

**APPENDIX 1-A**

**Water and Sewerage Priorities**



## APPENDIX 1-A WATER AND SEWERAGE PRIORITIES

The system for presenting the existing and planned sequence for water and sewer construction is a simplified one compared to previous plans. The service categories have been reduced from previous versions of the plan to three service categories.

<u>Service Time Period</u>	<u>Code</u>	<u>Former Code</u>	<u>Mapped</u>
Existing service or service in less than 1 year	Existing	W/S-1	Yes
Service possible in 1 to 10 year time frame	Planned	W/S-2	Yes
No Planned Service	None	None	Yes

Service Areas will be shown on all appropriate maps following the section that they illustrate.

**Existing:** Areas where improvements to or construction of new shared water supply and sewerage facilities are existing or will be in service within one year from the adoption of this Plan.

**Planned:** Areas where improvement to or construction of new shared water supply and sewerage facilities are permitted by current zoning and may be constructed by individuals or developers at their cost during the next 1 to 10-year time frame.

Note: The Town of Millington includes sub designations for Planned 3-5/6 Years and Planned 6-7/10 Years.



**APPENDIX 1-B**

**Sewer Allocation Policy**



# **KENT COUNTY WATER & WASTEWATER**

## **WATER AND SEWER ALLOCATION POLICY**

### **PURPOSE**

Title 9 of the Environment Article of the Annotated Code of Maryland requires that each County adopt a Comprehensive Water and Sewerage Plan that will provide for the orderly expansion and extension of community and shared water and sewerage systems in a manner consistent with all applicable County and local comprehensive plans. In addition, the Code of Maryland Regulation 26.03.03, provides the basis for the establishment of allocation policies for water supply and sewerage services. The Kent County Department of Water and Wastewater has determined that the establishment of such an allocation policy is in the best interest of the County and adopts the sewerage allocation policy presented herein for the following purposes:

1. Provide public knowledge regarding available capacity in public water and wastewater facilities;
2. Establish a procedure for fair and equitable allocation of available water and wastewater capacity in such a manner as to protect the public health, safety, welfare, and water quality in the County;
3. Establish a method by which available capacity is calculated and allocated, so as to assume that adequate capacity is available over time;
4. Establish the priority by which water and wastewater service is determined;
5. To responsibly plan for future growth in Kent County in accordance with the Land Use Ordinance plan and growth management objectives, as established in the Comprehensive Plan and adopted growth management papers; and
6. Provide for the administrative procedures and guidance for the allocation of water and sewer service in a reasonable, fair, and equitable manner.

## **APPLICABILITY**

This policy applies to all water distribution, water treatment plants, and wastewater collection and treatment facilities owned, operated, and maintained by the Kent County Department of Water and Wastewater Services. These include the following systems:

- I. **Water Distribution and Treatment Plants**
  - a. **Worton/Butlertown**
  - b. **Fairlee/Georgetown**
  - c. **Kennedyville**
  - d. **Millington (distribution only)**
  - e. **Edesville/Wesley Chapel (distribution only)**
  
- II. **Wastewater Collection and Treatment Systems**
  - a. **Worton/Butlertown**
  - b. **Fairlee/Georgetown/Tolchester**
  - c. **Kennedyville**
  - d. **Piney Neck/Skinners Neck/Wesley Chapel/Edesville**
  - e. **Quaker Neck/Lover's Lane**
  - f. **Millington/Chesterville Forest**
  - g. **Spring Cove/Green Lane/Allen's Lane**



## DEFINITIONS

As used in this policy, the following terms are defined as indicated:

1. **ANNUAL AVERAGE DAILY WATER DEMAND** — The total flow of water through a particular water system divided by the number of days in the year.
2. **ANNUAL AVERAGE DAILY WASTEWATER FLOW** — The total flow of wastewater through a particular wastewater system divided by the numbers of days in the year.
3. **AVERAGE DAILY FLOW** — The average daily flow of water or wastewater for a particular use.
4. **ALLOCATION** — The amount of water and/or wastewater service provided by the County. An allocation is the amount of treatment capacity at a facility, purchased by the developer or user for a particular project. An allocation is not made until the project has received a favorable concept plan review from the Kent County Planning Commission and the allocation fee is paid by the developer or user.
5. **AVAILABLE CAPACITY** — The difference between the permitted or contractual capacity of the water or sewerage treatment facility and the highest monthly average flow, less any allocations granted but not yet used. Portions of a service area may have limited available capacity due to size or condition of collection or distribution system components. It shall be the responsibility of the developer or user to bear the cost of upgrading distribution or collection components to serve their project.
6. **PROJECT** — A development, subdivision, parcel, individual lot or unit, regardless of whether use is residential, commercial, industrial, or institutional/government. Expansion of, or addition to, an existing use shall be considered a new project.
7. **PUBLIC WORKS AGREEMENT** — A written document describing the conditions under which a developer or potential user shall be granted a water and/or sewerage allocation from the Kent County Department of Water and Wastewater.

## ALLOCATION OF CAPACITY

An allocation shall be required for any project within a designated Kent County Department of Water and Wastewater service area which requires either water or sewerage service or both. Vacant lots that abut sewerage collection lines or water distribution lines and receive quarterly bills will be considered as having an allocation for a single residence. Owners of vacant lots that have not been paying quarterly fees must apply for an allocation.

The Kent County Department of Water and Wastewater has determined that it is in the best interest of the citizens of Kent County that allocation targets of available capacity be established for each water and sewerage system subject to these regulations. These allocation targets and guidelines are beneficial to the County and ensure that the County does not over-allocate its water or wastewater resources. These allocation targets and guidelines are established as of this policy for all water and wastewater collection, treatment, distribution facilities owned, operated, and maintained by the Department of Water and Wastewater. An allocation may not be approved for a system under moratorium or where the allocation would exceed the available or contractual capacity.

The Kent County Department of Water and Wastewater will review the allocation targets on an annual basis at a minimum. The Department of Water and Wastewater reserves the right to amend the targets during any given year if it feels the amendment benefits and provides continued health, safety, welfare, and comfort to the citizens of Kent County. The allocation targets are meant as a guideline to monitor the overall allocation availability of a particular system. The Department of Water & Wastewater reserves the right to exceed the allocation targets for particular projects at the request of the Planning Commission.

Unless otherwise specified on a system-specific basis, allocations shall be made on a first-come, first-serve basis. The allocation amounts will be determined by the Kent County Department of Water and Wastewater, and shall be consistent the Kent County Comprehensive Plan, the Kent County Comprehensive Water & Sewerage Plan, and adopted growth management policies for specific areas where applicable.

## PRIORITY OF ALLOCATION OF AVAILABLE CAPACITY

Subject to maintaining the allocation targets and guidelines as identified in this policy, the Kent County Department of Water and Wastewater will allocate available water and sewerage treatment capacity in the following order of priority:

1. Development of existing recorded lots which abut water and/or sewerage collection lines within designated service areas;
2. Projects that promote economic development or County projects.
3. Projects with favorable concept plan review from the Kent County Planning Commission for which water and/or sewerage allocations will be required but not yet granted;
4. New projects for which water and/or sewerage allocations will be required but not yet granted.

## ALLOCATION PROCESS

An allocation is required for any residential, commercial, industrial, institutional, or governmental project within a designated service area which requires water or sewerage service. Areas available for allocation must be included in the Kent County Comprehensive Water & Sewerage Plan. The Water & Sewerage Plan requires that certain projects be included in the document before an allocation can be granted.

Applications for an allocation must be submitted on forms provided by the Kent County Department of Water and Wastewater. Typically the forms include, but are not limited to, the following information:

1. Location.
2. Specific address, tax map and parcel numbers for the subject property.
3. Name, address, and telephone number of developer, builder, or owner.
4. Type of project.
5. Area of project property.
6. Zoning of project property.
7. Existing conditions onsite.
8. Number of lots or units to be developed, and type of units.
9. Build out rate by phase(s).
10. Projected water demand with basis for projection.
11. Projected sewerage flow with basis for projection.
12. Date of application.
13. Signature of applicant.
14. Action taken (granted, conditioned, denied, amount of allocation, number of limitations, date action taken, signature of acting official, time limitations, time extensions, or other changes).

Projects that require Planning Commission approval must receive favorable concept plan review prior to amending the Comprehensive Water & Sewerage Plan, if required, and prior to requesting allocation. Allocation fees must be paid before final approval is granted by the Kent County Planning Commission.

The allocation fee must be paid on execution of the Public Works Agreement (PWA) for all projects requesting capacity less than 5,000 gallons per day. For projects exceeding the 5,000 gallons per day limit, allocation fees may be paid by posting a Letter of Credit guarantying full payment of the allocation fees within 3 years. The acceptance of a Letter of Credit is conditioned upon entering into an agreement to pay the allocation fees in installments within the three year period from the execution of the PWA. Thereafter the developer/owner of the applicable property or project (hereafter the "developer/owner" or the "owner") will be assessed the minimum quarterly charges for vacant lots established by the Department of Water and Wastewater Services for the respective service area until the earlier of the connection of the project to the District's water and/or sewer lines or two years after the execution of the (PWA). At this time, the developer/owner shall be charged the full quarterly charges for the improvements on the property, unless additional arrangements are specified in the (PWA).

The Owner will be responsible for the installation of any water or sewer appurtenances necessary for service to the property, for obtaining all necessary permits, and for the payment to the Commissioners of all associated inspection fees.

Owner shall guarantee the construction for a period of one (1) year from final acceptance by the Department.

## RECAPTURING ALLOCATIONS

The Kent County Department of Water and Wastewater may issue allocations to a specific project for water and/or sewer service; however, the commitment will remain valid only if the original conditions of the Public Works Agreement remain unchanged. The applicant cannot propose changing the project without risking the loss of allocation(s). Allocations are considered to be granted when a Public Works Agreement has been executed between the Kent County Commissioners and the developer/owner.

The Commissioners reserve the right to review and recapture any allocations that have not been connected to Kent County's water and/or sewer lines in the event that the Water and/or Wastewater Plant in the service area for which they were approved is within 85% of its design capacity. The Owner acknowledges the Commissioners' right to recapture any unconnected allocations subject to the conditions stated in this paragraph. The Owner further acknowledges that allocation fees for any recaptured allocation are NON- REFUNDABLE. The failure of the Commissioners to undertake the review and recapture at a time when the Wastewater Plant is within 85% of its design capacity shall not constitute a waiver of the provisions of this paragraph in the event that the Commissioners decide to conduct a review and recapture during a subsequent time when the plant is within 85% of capacity.



## KENT COUNTY WATER & WASTEWATER USER CLASS DEFINITIONS

### 1. UNIT FLOWS:

Flow will be determined on a square foot basis using the following guidelines:

Office - Gross Sq. Ft. x 0.09 = GPD

Retail - Gross Sq. Ft. x 0.05 = GPD

GPD = gallons per day

For additional flow projection rates not specified see the "MDE Guidance Document, Wastewater Capacity Management Plan 2006", Flow Calculation Tables or the MDE "Design Guidelines for Wastewater Facilities 2012."

### 2. SMALL BUSINESS:

The flow generated from any accessory or stand-alone structure which require separate connections and/or bathroom (s) used for retail/office based on the unit flow generated from the square foot unit flows from above not to exceed 100 GPD. In cases where the use is a mixture of the above, the sum of the uses will determine the amount of allocation required.

### 3. BUSINESS:

Flow will be determined on a square foot basis. The same guidelines that apply to the small business user class will apply to this category. Flows between 101 GPD and 250 GPD will be rounded to 250 GPD for a minimum of one allocation. In cases where the use is a mixture of the above, the sum of the uses unit flows will determine the amount of allocation units required. Calculated flows are to be rounded up to the nearest 50 gallons. Where the determined daily flows are greater than 250 GPD, business allocations shall be purchased in increments of 50 gallons equating to 1/5 of a full allocation (250 GPD).

### 4. 1 BEDROOM APARTMENT (1 BEDROOM UP TO 900 Sq. FT.):

Apartments must be an addition to or accessory to a primary structure or part of a multi-unit building or complex. Flows are based on 100 GPD full service apartments

### 5. 2 BEDROOM APARTMENT (2 BEDROOMS UP TO 1,200 Sq. FT.):

Apartments must be an addition to or accessory to a primary structure or part of a multi-unit building or complex. Flows are based on 175 GPD full service apartments

### 6. NURSING HOME:

This user class is typically used for Traditional Nursing Homes, Assisted Living Facilities, and other institutional uses which provide continuous care for frail and elderly people which are allocated capacity on a "Per Bed" basis (50 GPD/Bed).

7. HOME OCCUPATIONS:

Those uses, which it is determined, will create little if any additional flows, and are contained within the existing structure and don't require additional bathroom facilities will be exempt from purchasing additional allocations. Determination will be made by the Director of Public Works.

8. HOME DAY CARE:

Those uses licensed by the State and which include 8 or fewer children are exempt from purchasing allocation.

9. LARGE FAMILY CHILD CARE HOME:

Those uses licensed by the State and which include 9 to 12 children. Flows will be based on ½ average school flows (7 GPD/child). Allocations will be assessed on a "PER CHILD" basis in excess of 8 children and charged per the current per child rate.

10. USER FEES:

User fees will be charged in ½ EDU increments at current County user fee rates. Any use classification with a flow less than 125 GPD would be assessed ½ an EDU user charge per quarter.

Example

The User Fees for a 600 GPD flow would be calculated as follows:  
 $600 \text{ GPD} / 250 \text{ GPD/EDU} = 2.4 \text{ EDUs}$  rounded up to the nearest ½ increment equals 2.5 EDUs.

11. MINIMUM ALLOCATION FEES:

No property or parcel shall be assessed less than one full residential unit allocation charge independent of the use or intended use for the property.



2017  
SEWER AND WATER ALLOCATION FEE CHARGES

	UNIT OF MEASURE	FLOW ALLOTTED PER UNIT (GPD)	ALLOCATION COSTS PER UNIT SEWER	WATER	COMBINED
RESIDENTIAL-----	Dwelling	250	\$11,800	\$4,400	\$16,200
1 BEDROOM APT. ----	EACH	100	\$4,720	\$1,760	\$6,480
2 BEDROOM APT. ----	EACH	175	\$8,260	\$3,080	\$11,340
SMALL BUSINESS----	EACH	100	\$4,720	\$1,760	\$6,480
BUSINESS-----	BUSINESS	250	\$11,800	\$4,400	\$16,200
NURSING HOME----	BED	50	\$2,360	\$880	\$3,240
LG. FAMILY CARE---	CHILD	7	\$331	\$124	\$455

Example Calculations:

- An 11-child daycare with water and sewer would be assessed as follows: Since it has a capacity greater than 8 children it is classified as a Large Family Child Care Home and is responsible for the number of children in excess of 8.  
 $11 \text{ Children} - 8 \text{ Children (No charge Home Daycare)} = 3 \text{ Child Units}$   
 $3 \text{ Child Units} \times \$455/\text{Child Combined} = \$1,365$
- A 12-bed assisted living with water and sewer would be assessed 12 bed allocations.  
 $12 \text{ Bed} \times \$3,240 / \text{Bed Combined} = \$38,880.$
- A 2200 square foot business with sewer only would be assessed as follows:  
 $2200 \text{ s.f.} \times 0.09 \text{ GPD/s.f.} = 198 \text{ GPD}$ , this is greater than 100 GPD so it falls under the Business use and assessed the minimum of one allocation, since it is less than 250 GPD.  
 $1 \text{ Business Unit} \times \$11,800 / \text{Business Unit Sewer} = \$11,800$
- 4250 square foot commercial (1250 s.f. office and 3000 s.f.) with water and sewer would be assessed as follows:  
 $1250 \text{ s.f.} \times 0.09 \text{ GPD/s.f.} + 3000 \text{ s.f.} \times 0.05 \text{ GPD/s.f.} = 262.5 \text{ GPD}$   
 Since this is greater than 100 GPD it falls under the Business use. The calculated daily flow of 262.5 GPD must be rounded up to the nearest 50 gallons for a projected flow of 300 GPD.  
 $300 \text{ GPD} / 250 \text{ GPD} / \text{Business Unit} = 1.2 \text{ Business Unit Allocations}$   
 $1.2 \text{ Business Units} \times \$16,200 / \text{Business Unit Combined} = \$19,440$



**APPENDIX 1-C**

**Department of Health Policy on Wellhead Protection (1.5.3)**



# Maryland Model Wellhead Protection Ordinance



**Martin O'Malley**  
*Governor*

**Shari T. Wilson**  
*Acting Secretary*

**Anthony G. Brown**  
*Lieutenant Governor*

**Maryland Department of the Environment  
Water Management Administration  
Water Supply Program**

**February, 1997  
Revised August, 2005  
Revised February, 2007**

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**Section 1.0 PURPOSE AND INTENT**

**WHEREAS**, the ground water underlying the community water supply wellhead protection areas is a major source of (name of community)'s existing and future water supply; and

**WHEREAS**, a safe and adequate source of drinking water is of great benefit to the health and well being of the \_\_\_\_\_; and

**WHEREAS**, the aquifer systems supplying the community water supply wellhead protection areas, with its ground water supply, is integrally connected with numerous surface waters and streams; and

**WHEREAS**, accidental spills and discharges of toxic and hazardous materials can threaten the quality of such water supplies, posing public health and safety hazards; and

**WHEREAS**, unless preventive measures are adopted to control the discharge and storage of toxic and hazardous materials within the community water supply wellhead protection areas, further spills and discharges of such materials will predictably occur, and with greater frequency and degree of hazard by reason of increasing land development, population, and vehicular traffic within the wellhead protection areas; and

**WHEREAS**, agricultural and residential development can result in increased nitrogen loading to the ground water from septic systems, fertilizer application and livestock wastes; and

**WHEREAS**, proper siting, installation, operation, and maintenance of septic systems, agricultural operations, feedlots and animal wastes areas are necessary to prevent contamination of the ground water from excessive nitrogen and pathogenic organisms; and

**WHEREAS**, the purpose of this ordinance is to protect the public health, safety, and welfare through the preservation of the ground water resources of community public water supplies to ensure a future supply of safe and healthful drinking water. The designation of the wellhead protection districts, and careful regulation of development activities within these districts, can reduce the potential for ground and surface water contamination.

*Section 2.0*

**DEFINITIONS**

- A. **AQUIFER** means any formation of soil, sand, rock, gravel, limestone, sandstone, or other material, or any crevice from which underground water is or may be produced.
- B. **BEST MANAGEMENT PRACTICES (BMPs)** means a conservation or pollution control practice that manages wastes, agricultural chemicals, or hazardous materials so as to minimize movement into surface or ground waters of the State.
- C. **CONTAINMENT DEVICE** shall be defined as a device that is designed to contain an unauthorized release, retain it for cleanup, and prevent released materials from penetrating into the ground.
- D. **EPA** refers to the United States Environmental Protection Agency.
- E. **EPA STORMWATER NPDES PERMIT** shall be defined as a permit meeting the requirements of the National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges issued by EPA on November 16, 1990.
- F. **HAZARDOUS MATERIALS** means any substance that: (1) conveys toxic, lethal, or other injurious effects or which causes sublethal alterations to plant, animal, or aquatic life; or (2) may be injurious to human beings. Hazardous materials include any matter identified as a "hazardous waste" by the Environmental Protection Agency or a "controlled hazardous substance" by the Maryland Department of the Environment.
- G. **MDE** refers to the Maryland Department of the Environment.
- H. **NUTRIENT/MANURE MANAGEMENT PLAN** shall be defined as a plan prepared by a certified nutrient management consultant to manage the amount, placement, timing, and application of animal waste, fertilizer, sewage sludge, and other plant nutrients in order to prevent pollution and to maintain productivity of the soil.
- I. **ON-SITE FLOOR DRAINS** shall be defined as drains which are not connected to municipal sewer or stormwater systems and which discharge directly to the ground or septic system.
- J. **OWNER** shall be defined as a property owner or his duly authorized agent or attorney, a purchaser, devisee, fiduciary, and any other person having vested or contingent interest in the property of question.
- K. **PERSON** shall be defined as any natural person, individual, public or private corporation, firm, association, joint venture, partnership, municipality, government agency, political subdivision, public officer, owner, lessee, tenant, or any other entity whatsoever or any combination of such, jointly or severally.



- L. **PESTICIDE** shall be defined as any substance or mixture of substances intended for: (1) preventing, destroying, repelling, or mitigating any pest; (2) use as a plant regulator, defoliant, or desiccant; or (3) use as a spray adjuvant such as a wetting agent or adhesive.
- M. **RULES AND REGULATIONS OF MDE** shall be defined as official publications of MDE with standards and requirements for protection of ground water resources.
- N. **UNDERGROUND INJECTION WELL** shall be defined as a bored, drilled, driven or dug well whose depth is greater than the largest surface dimension, through which fluids enter the subsurface; or, an improved sinkhole; or, a subsurface fluid distribution system.
- O. **UNDERGROUND STORAGE TANK** means an underground storage tank, connected piping, underground ancillary equipment, and containment system, if any.
- P. **WELLHEAD PROTECTION DISTRICT** means that land area overlying the aquifer which contributes water to a public water supply well under the permitted withdrawal rate (average annual) and average annual recharge conditions that can be anticipated based on historical data. It is bounded and may be influenced by the ground water divides which result from pumping the well and by the contact of the aquifer with less permeable geologic boundaries. In all cases, the Wellhead Protection District shall extend upgradient to its point of intersection with prevailing hydrogeologic boundaries (a ground water flow divide, a contact with geologic formations, or a recharge boundary), or be limited by time-of-travel. The Wellhead Protection District shall be reviewed and approved by MDE.  
  
The Wellhead Protection District may include two (2) zones of protection, with Zone 1 being the most restrictive. Zone 1 is based on a 1 year time of travel, fixed radius or other assessment of an area most closely connected to the water supply. Zone 2 is based on a 10-year<sup>1</sup> time of travel or by hydrogeologic boundaries. The boundary of Zone 3, when delineated, encompasses the total land area that is determined to provide recharge to a public water supply well.
- Q. **YARDING AREAS** shall be defined as a pen or other outdoor area used for the feeding and care of livestock or poultry.

***Section 3.0***

**AUTHORITY**

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<sup>1</sup> A 20 or 25 year time of travel may be used to mark the edge of Zone 2, if numerical modeling with particle tracking is used to delineation the wellhead protection area.

*Section 3.1*

*Enabling Statute*

**\* \* \* For Use by Jurisdictions Empowered under Article 66B \* \* \***  
**of the Annotated Code of Maryland, as follows:**

1. All non-charter (including code home rule\*) counties:

Allegany*	Garrett
Calvert	Kent*
Caroline*	Queen Anne's*
Carroll	St. Mary's
Cecil	Somerset
Charles	Washington
Dorchester	Worcester*
Frederick	

2. Baltimore City.

3. All incorporated municipalities lying outside Montgomery and Prince George's Counties.

4. The incorporated municipalities of Barnesville, Brookeville, Gaithersburg, Laytonsville, Poolesville, Rockville, and Washington Grove in Montgomery County, and the City of Laurel in Prince George's County.

B. **WHEREAS**, the \_\_\_\_\_ has duly adopted within the Comprehensive Plan, after public notice and hearing, a Sensitive Areas Plan element in accordance with §3.05 of Article 66B of the Annotated Code of Maryland; and

**WHEREAS**, § 3.05 of Article 66B requires protection of streams and their buffers, 100-year floodplains, habitats of threatened and endangered species (habitat), and steep slopes; and

**WHEREAS**, § 3.05 (a)(2) of Article 66B authorizes protection of additional types of sensitive areas; and

**WHEREAS**, the \_\_\_\_\_ has determined through the Sensitive Areas element of the Comprehensive Plan that, in addition to streams and their buffers, 100-year floodplains, habitats of threatened and endangered species, and steep slopes, wellhead protection areas are in need of special protection; and

**WHEREAS**, § 4.01 of Article 66B empowers the \_\_\_\_\_ with the authority to regulate and restrict land use for the purpose of promoting the health, safety and general welfare of the community; and

**WHEREAS**, Section 1428 of the Federal Safe Drinking Water Act Amendments of 1986 requires that each state develop a wellhead protection program to protect public water supplies from contamination from contamination; and

**WHEREAS**, the Maryland Department of the Environment (MDE) has developed a wellhead protection program, approved by EPA, which identifies that local governments have responsibility for developing programs, including regulations and management controls, to protect public water supplies from contamination.

**\* \* \* For Use by Jurisdictions Empowered Under Articles 25A and 28 \* \* \*  
of the Annotated Code of Maryland, as follows:**

1. Charter Counties delegated by Article 25A:

Anne Arundel	Howard
Baltimore	Talbot
Harford	Wicomico

2. Charter Counties delegated by Article 28:

Montgomery	Prince George's
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3. Incorporated towns within Montgomery and Prince George's Counties.

B. **WHEREAS**, the \_\_\_\_\_ has duly adopted Zoning Regulations for the purpose of protecting the health, safety, and welfare of its residents; and

**WHEREAS**, § 3.05(a)(1)(vi) and (viii) of Article 66B requires jurisdictions empowered under Articles 25A and 28 of the Annotated Code of Maryland to require a sensitive area element that contains goals and standards to protect sensitive areas; and

**WHEREAS**, § 3.05 of Article 66B requires protection of streams and their buffers, 100-year floodplains, habitats of threatened and endangered species (habitat), and steep slopes; and

**WHEREAS**, § 3.05 of Article 66B authorizes protection of additional types of sensitive areas; and

**WHEREAS**, the \_\_\_\_\_ has determined through the Sensitive Areas element of the Comprehensive Plan that, in addition to streams and their buffers, 100-year floodplains, habitats of threatened and endangered species, steep slopes, and wellhead protection areas are in need of special protection; and

**WHEREAS**, § 4.01 of Article 66B empowers the \_\_\_\_\_ with the authority to regulate and restrict land use for the purpose of promoting the health, safety and general welfare of the community; and

**WHEREAS**, Section 1428 of the Federal Safe Drinking Water Act Amendments of 1986 requires that each state develop a wellhead protection program to protect public water supplies from contamination; and

**WHEREAS**, the Maryland Department of the Environment (MDE) has developed a wellhead protection program, approved by EPA, which identifies that local governments have responsibility for developing programs, including regulations and management controls, to protect public water supplies from contamination.

**\* \* \* For Use by Jurisdictions Empowered under Public \* \* \***  
**Local Laws, as follows:**

1. LaVale, an unincorporated community in Allegany County.

B. **WHEREAS**, the \_\_\_\_\_ has duly adopted Zoning Regulations for the purpose of protecting the health, safety, and general welfare of its residents; and

**WHEREAS**, § 3.05(a)(1)(vi) and (viii) of Article 66B requires a sensitive area element that contains goals and standards to protect sensitive areas; and

**WHEREAS**, § 3.05 of Article 66B requires protection of streams and their buffers, 100-year floodplains, habitats of threatened and endangered species (habitat), and steep slopes; and

**WHEREAS**, § 3.05(a)(2) of Article 66B authorizes protection of additional types of sensitive areas; and

**WHEREAS**, the \_\_\_\_\_ has determined through the Sensitive Areas element of the Comprehensive Plan that, in addition to streams and their buffers, 100-year floodplains, habitats of threatened and endangered species, and steep slopes, wellhead protection areas are in need of special protection; and

**WHEREAS**, § 4.01 of Article 66B empowers the \_\_\_\_\_ with the authority to regulate and restrict land use for the purpose of promoting the health, safety and general welfare of the community; and

**WHEREAS**, Section 1428 of the Federal Safe Drinking Water Act Amendments of 1986 requires that each state develop a program to protect public water supplies from contamination; and

**WHEREAS**, the Maryland Department of the Environment (MDE) has developed a wellhead protection program, approved by EPA, which identifies that local governments have responsibility for developing programs, including regulations and management controls, to protect public water supplies from contamination.

***Section 3.2 Severability***

Should any section, paragraph, sentence, clause, or phrase of this ordinance be declared unconstitutional or invalid for any reason, the remainder of this ordinance shall not be affected and remain in full force.

***Section 3.3 Amendments***

This ordinance or any part thereof may be amended from time to time in accordance with the procedures as established by law.

***Section 4.0***

**APPLICABILITY**

- A. This Ordinance applies to all land uses and activities located or proposed within the area delineated as the Wellhead Protection District in \_\_\_\_\_ on a map available for inspection at the office of the \_\_\_\_\_ and as defined in the definitions section of the ordinance. The Wellhead Protection District consists of Zone 1, Zone 2, and Zone 3, (select all that apply) described in 5.0 below.
- B. This Ordinance is supplementary to other laws and regulations. Where this Ordinance or any portion thereof imposes a greater restriction than is imposed by other regulations, the provisions of this Ordinance shall control.

***Section 5.0***

**EXTENT AND DESIGNATIONS**

- A. The Wellhead Protection District includes differing zones of protection as recommended by MDE. Wellhead Protection Districts may include 1, 2, or 3 zones of protection.

For each community this section will need to be customized. The text then needs to describe what each of the zones represent and what method was used to delineate the area. Several possibilities are described below.

**If only one zone of protection:**

1. The wellhead protection area (WHPA) delineated represents the recharge area for (name of supply source and location) supply. The boundaries of the WHPA are based on ground water flow direction and ground water divides inferred from topography and groundwater discharge areas, changes in formation type, permitted withdrawal rates, linear features (fracture traces) and a calculated down gradient zone of contribution using the average annual withdrawal rate. A detailed explanation and basis for the delineation is described in (title and date of report with author). MDE has indicated its approval of this area as being consistent with the requirements of Section 1428 of the Safe Drinking Water Act by letter dated \_\_\_\_\_.

**If there are two zones of protection:**

1. Zone 1 represents the area bounded by a ground water travel time of 1 year to (name of supply source and location) as determined by a modular semi-analytical ground water flow model (such as WHPA Code Version 2.2, Huyakorn and Blandford). All input values and boundary conditions are documented in (title and date of report with author). MDE has indicated its approval of this area as being consistent with the requirements of Section 1428 of the Safe Drinking Water Act by letter dated \_\_\_\_\_.
2. Zone 2 represents an area bounded by a ground water travel time of 10 years to name of supply source and location as determined by a modular semi-analytical ground water flow model (such as WHPA Code Version 2.2 Huyakorn and Blandford). All input values and boundary conditions are documented in (title and date of report with author). MDE has indicated its approval of this area as being consistent with the requirements of Section 1428 of the Safe Drinking Water Act by letter dated \_\_\_\_\_.

**If there is a third zone of protection:**

3. Zone 3 represents that area between the 10-year time of travel boundary and the boundary of the ultimate recharge area to (name of supply source and location). This area was determined by applying a numerical ground water flow model and particle tracking routine (provide model reference). The model grid size, boundary locations, input parameters and calibration results are all described in detail in (title and date of report with author). MDE has indicated its approval of this area as being consistent with the requirements of Section 1428 of the Safe Drinking Water Act by letter dated \_\_\_\_\_.
- B. The maps delineating the Wellhead Protection District and Zone(s) (1,1&2, or 1,2&3) are entitled (title and date) and are incorporated herein and made a part of this Ordinance.

The maps shall be on file and maintained by \_\_\_\_\_. Accurate copies of these maps shall be made available for review by the public.

- C. In determining how properties within the Wellhead Protection District depicted on the (title and date of map) are affected by the requirements of this ordinance the following rules shall apply:
1. Properties located wholly within one zone as reflected on (title and date of map) shall be governed by the restrictions applicable to that Zone.
  2. Properties having parts lying within more than one zone as reflected on the (title and date of map) shall be governed by the restrictions applicable in each zone.
  3. Where the boundary line between two zones passes through a building, the entire building shall be considered to be in that zone in which more than fifty (50) percent of the floor space of the building is situated.
- D. The boundary of the Wellhead Protection District or individual zones within the District may be modified should additional information or analysis be provided that shows that the current boundary lines no longer appropriately reflects the criterion which they purport to represent.

Procedures for modification of such boundaries shall be as follows:

1. The applicant wishing a change in boundary shall provide the evidence to the Zoning Commissioner. The applicant shall petition the Zoning Commissioner for a special hearing/District Reclassification and be required to present detailed hydrogeologic and hydrologic information to the Board of Appeals indicating where in fact the new boundary line should be drawn. The applicant shall provide (No. of copies) copies of all reports and maps to the Zoning Commissioner for a technical review of geologic and hydrologic, and any other relevant information. Maps shall be submitted on the same scale or more detailed as the official Wellhead Protection District Maps.
2. The Zoning Commissioner shall seek competent technical advice of such a change request. The (name of community) wellhead protection planning team shall be given a copy of the information given to the zoning commissioner and be granted adequate time to comment on the proposed change.
3. The burden of proof shall be on the applicant to show that the current boundaries do not represent the criterion which they purport to represent.
4. If after receiving written advice from the (name of community) planning team and/or other technical advisors, and the Zoning Commissioner believes that the proposed change has merit, all property owners potentially affected by the changes shall be sent





	<u>Zone 1</u>	<u>Zone 2<sup>2</sup></u>
A. Bulk Storage of Hazardous Materials, except the following <sup>3</sup> :	X	Cu
1. Materials needed for normal household use, outdoor maintenance, and heating of a structure;		
2. Waste oil retention facilities required by statute, rule, or regulation;		
3. Materials needed for emergency generators; or		
4. Materials used in Water Treatment Plants.		
B. Dry Cleaning Establishments, Coin or Commercial Laundries	X	Cu
C. Garage, Service Station	X	Cu
D. Heavy Manufacturing Uses	X	X
E. Junk Yards	X	X
F. Yarding Area	X	Cu <sup>4</sup>
G. Manure Piles, Animal Waste Pits, Lagoons, and Sewage Sludge Storage Facilities	X	Cu
H. Metal Plating Establishments	X	X
I. On-site Wastewater Disposal	X	Cu <sup>5</sup>

<sup>3</sup> *These prohibitions and conditional uses may also apply to Zone 3 areas. The decision should be based on vulnerability of the specific area to the category of use.*

<sup>2</sup> *Secondary containment and release detection standards for inground tanks and above ground tanks found later in this manual apply to the exceptions permitted in Zone 1 of the wellhead protection district.*

<sup>4</sup> *Counties/municipalities may require nutrient management plans through local regulation or other non-zoning by law/ordinance. Local requirements must be consistent with MD-1/SCD standards.*

<sup>5</sup> *Counties/municipalities should consider requiring commercial and residential developments within this Zone to be serviced by public sewer. For all lots subdivided which propose on-site wastewater disposal, the intention is to ensure that the nitrate-levels do not exceed 10 mg/l. In some instances on-site systems that maximize nitrogen removal may be required.*

J.	Open Burning Sites and Dumps	X	X
K.	Quarries and Mining Operations	X	X
L.	Storage of Deicing Chemicals	X	Cu
M.	Disposal of Fuels or Hazardous Materials	X	X
N.	Sanitary Landfills and Rubble Fills	X	X
O.	Bulk Storage and Mixing of Pesticides and Fertilizers <sup>6</sup>	X	Cu
P.	Underground Injection Wells	X	Cu <sup>7</sup>
Q.	Underground Storage Tanks	X	Cu
R.	Uses which involve, as a principal activity, the manufacture, storage, use, transport, or disposal of hazardous materials	X	X
S.	Uses which involve hazardous materials in quantities greater than those associated with normal household use <sup>9</sup>	X <sup>8</sup>	Cu
T.	Underground pipelines <sup>10</sup> carrying hazardous	X	Cu

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***Process wastewater that contain hazardous materials above drinking water standards or otherwise to harm to the water supply should be prohibited from on-site disposal.***

***<sup>6</sup>New standards and guidelines adopted by Maryland Department of Agriculture should be referenced as a condition for special exception.***

***<sup>7</sup>Process wastewater that contain hazardous materials above drinking water standards or otherwise cause harm to the water supply should be prohibited from on-site disposal.***

***<sup>8</sup>This prohibition does not apply to uses permitted in Section 6.2.1.***

***<sup>9</sup>Normal household use does not imply that it is acceptable to dispose of hazardous material through the home's plumbing system.***

***<sup>10</sup> Counties and local governments may be pre-empted from regulating the location of pipelines used in interstate commerce.***

materials

- U. Development with greater than 50% impervious surfaces Cu Cu

Key:

- X = Not Allowed  
Cu = Conditional Use

***Section 6.3 Conditional Uses***

Activities that are defined as conditional uses will not be allowed within the Wellhead Protection District unless the property owner can show the use will not harm the ground water and is able to meet the conditions described in 6.3.B and 6.7 of this ordinance.

- A. The landowner or representative shall submit to the \_\_\_\_\_ an application for a Conditional Use. The application shall include:
1. A list of all hazardous materials which are to be stored, handled, used, or produced in the activity being proposed.
  2. A description of the quantities and containers for the storage, handling, use, or production of hazardous materials by the proposed activity.
  3. A site plan illustrating the location of all operations involving hazardous materials, spill containment structures and showing all points of potential discharge to ground water including dry wells, infiltration ponds, septic tanks and drainfields.
  4. Documentation of approval by MDE of any industrial waste treatment or disposal system or any wastewater treatment system over 5,000 gallons per day (gpd) capacity.
  5. Documentation of MDE permit or approval for any discharge via an underground injection well.
  6. A description and estimate of the average and maximum number of poultry livestock animals that will be yarded within the Wellhead Protection District. Evidence that a nutrient management plan for nitrogen has been completed for all livestock or poultry wastes to be generated by the activity. This plan must incorporate adequate waste holding facilities and show any application sites within the wellhead protection district.
  7. Plans showing secondary containment, for all underground and above ground tanks and lines containing hazardous material.

8. A description of the best management practices which will be followed during the construction of the facility to ensure that hazardous materials are not released to the ground water.
  9. An emergency plan indicating the procedures which will be followed in the event of a spill of a hazardous material to control and collect the spilled material to prevent the substance from reaching the ground water.
  10. A hydrologic assessment for properties with greater than 50% planned impervious surfaces (building footprints, sidewalks, and transportation surfaces) to determine the ground water recharge rate after site development is completed. The assessment will also estimate the ground water recharge rate prior to development.
- B. The \_\_\_\_\_ shall obtain advice from all appropriate local agencies to assess whether the wellhead protection area will be protected from contaminants which pose an adverse effect on the health or comfort of persons. In making their determination, the \_\_\_\_\_ shall give consideration to the simplicity, reliability, and feasibility of the control measures proposed and the degree of threat to drinking water quality which would result if the control measures failed. \_\_\_\_\_ shall then issue a written decision. In order for the area to be approved, it must be shown that the use:
1. Will protect the water supply from contaminants used on the property which pose an adverse effect on the health or comfort of persons;
  2. Will not cause the average ground water quality on the property to violate drinking water standards promulgated by MDE and the EPA; or
  3. Will maintain recharge of water to the water supply aquifer consistent with rates prior to development.<sup>11</sup>

A request may not be approved until all comments provided by local agencies have been addressed by the applicant to the satisfaction of \_\_\_\_\_.

- C. \_\_\_\_\_ may deny the Conditional Use if it is determined that the Conditional Use would not meet the requirements outlined in 6.3.B. above. The \_\_\_\_\_'s decision shall be made in writing to the applicant.

#### ***Section 6.4    Nonconforming Uses***

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***"No more than a 20% drop in recharge rates is recommended as a standard.***

Non-conforming uses lawfully in existence within the Wellhead Protection District may continue to exist in the form in which they existed at the time on this Ordinance is adopted. Changes in title or right to possession shall not effect continuation of an existing use.

In the event a non-conforming use poses a direct hazard to the public water supply, \_\_\_\_\_ may take any action permitted by law to abate the hazard.

### ***Section 6.5***    **Variances**

Variances to the provisions of this ordinance may be granted by \_\_\_\_\_, following a public hearing, provided that a strict interpretation of the Ordinance deprives such property of privileges or safety enjoyed by other similarly situated property within the Wellhead Protection District. Applications for Variances must be presented to the \_\_\_\_\_.

### ***Section 6.6***    **Exemptions**

The following activities are exempt from regulation under this ordinance:

1. Transportation of Hazardous Material- The transportation of any Hazardous Material through the Wellhead Protection District shall be exempt from the provisions of this ordinance.
2. Application of Pesticides- The application of pesticides in recreation, agriculture, pest control, and aquatic weed control activities shall be exempt from the provisions of this ordinance provided that:
  - a. The application is in strict conformity with the use requirement as set forth in the substances EPA registries. A pesticide can only be used according to its labeling and according to pertinent federal and state laws.
  - b. The application of pesticides shall be noted in the records of an applicator certified by the Maryland Department of Agriculture. Records shall be kept of the date and amount of these substances applied at each location and said records shall be available for inspection.
3. Underground Storage of Oil(s)- The underground storage of oil(s) used for heating fuel shall be exempt from the provisions of this ordinance if the tank used for storage is located within an enclosed structure (i.e., secondary containment or any currently approvable containment technology) sufficient to contain leakage of oil from the environment and to provide routine access for visual inspection (e.g., cement-floored basement), and sheltered to prevent the intrusion of precipitation. Any tank used for the underground storage of oil that is out of service for more than one year shall be removed. Liquid residue shall be removed and all connecting piping securely capped or plugged.
4. Aboveground Storage of Oil(s)- The aboveground storage of oil(s) used for heating fuel shall be exempt from the provisions of this ordinance provided that the tank used for storage is: 1) located on an impervious pad or container of sufficient volume to capture and contain spills

and leakage of oil from entering the environment, 2) sheltered to prevent the intrusion of precipitation and, 3) located in a manner that allows for routine visual inspection. Aboveground storage of oil shall be located as far away from the public water supply wells as possible.<sup>12</sup>

### ***Section 6.7 Performance Plan Standards***

All activities that are designated conditional uses shall meet the following design and operation guidelines.

- A. Containment of hazardous materials. Leak-proof trays under containers, floor curbing, or other containment systems to provide secondary liquid containment shall be installed. The containment shall be of adequate size to handle all spills, leaks, overflows, and precipitation until appropriate action can be taken. The specific design and selection of materials shall be sufficient to contain any hazardous material at the location and prevent escape to the environment. These requirements shall apply to all areas of use, production, and handling, to all storage areas, to loading and off-loading areas, and to aboveground and underground storage areas. Because State and federal governments already regulate hazardous materials nothing in this ordinance shall be applied in a way to prevent a person from complying with State and federal requirements.
- B. All underground tanks(s) and piping systems shall meet the requirements of COMAR 26.10.05.03.C 1-4 for secondary containment, double wall tanks, liners, vaults and underground piping.
- C. Dry cleaning establishments shall not discharge to the ground or subsurface any wastewater that was in contact with the organic solvents used in dry cleaning process.

As specified in A. above, secondary containment is required for areas when dry cleaning solvent is stored, used and transferred.

- D. Infiltration of stormwater runoff that has come in contact with the pavement surfaces shall not be permitted at gasoline service stations. Waste from service stations' work areas is not permitted to be discharged to the ground or subsurface.
- E. All sewage sludge and animal waste holding facilities shall be constructed so as not to allow the waste material to leach into the ground water. All inground facilities shall use low permeability liners constructed to meet one of the standards specified below:
  - a. one foot of clay with a permeability less than  $10^{-7}$  cm/sec, or
  - b. two feet of clay with a permeability less than  $10^{-6}$  cm/sec or
  - c. two feet of compacted soil with a permeability less than  $10^{-5}$  cm/sec, and

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<sup>12</sup> ***Homeowners are exempt, consistent with COMAR 26.10, Oil Pollution and Tank Management.***

a manmade liner, 30 mil thick, and permeability less than  $10^{-7}$  cm/sec.

- F. Agricultural operations with yarding areas shall follow nutrient management plans for nitrogen. Waste application rates for all sites within the wellhead protection district are to be designed to not exceed crop requirements and therefore minimize nitrate discharge to ground water.
- G. All facilities with wastewater disposal greater than 5,000 gpd shall have a State discharge permit. All developments with on-site disposal shall be designed so that the average  $\text{NO}_3\text{-N}$  concentration of the water recharging the surficial ground water aquifer under the property shall not exceed 10 milligrams per liter.
- H. All de-icing chemicals (salt piles and sand/salt mixes) must be stored under roof and protected from precipitation by a permanent cover. Runoff from mixing and loading areas may not be discharged to the subsurface.
- I. All facilities with bulk storage of pesticides must show evidence of compliance with Maryland Department of Agriculture requirements.
- J. All tanks of liquid fertilizers must have secondary containment of at least 110% of the largest tank within the contained area. All dry fertilizer storage must be under a permanent cover and protected from rainfall.
- K. All facilities with underground injection wells must show evidence of compliance with all applicable MDE permits, consent orders, or other State actions, regarding the underground disposal of wastes.
- L. All underground pipelines carrying hazardous materials shall be equipped with operable secondary release detection equipment and be protected against corrosion.
- M. All excess hazardous materials from the construction of any facility shall not be released to the environment and shall be removed from the property, unless such materials are incorporated into a contained hazardous materials storage area.
- N. At all facilities practicing stormwater infiltration the following design standards shall apply:
  - 1. Stormwater management facilities including drainage swales, detention ponds, and retention ponds shall be designed in a manner to provide optimal protection of the ground water resources. Uses of grass swales, open shoulder roads and grass filter strips shall be considered as first options in plan development.
  - 2. At least four feet of soil material is required between the top of bedrock surface or high water table (whichever is higher) and the bottom of any stormwater infiltration pond or system.

3. Stormwater infiltration shall be prohibited in areas receiving runoff from handling and mixing areas of hazardous materials.
  4. At least 80% of the predevelopment recharge rate shall be preserved following development. The design shall be made to ensure that this rate can be maintained over the life of the facility.
- O. Reporting of Spills. Any spill of a hazardous material shall be reported by the facility owner by telephone to the water supplier, within two (2) hours of discovery of the spill. Clean-up shall commence immediately upon discovery of the spill. A written report detailing the steps taken to contain and clean up the spill and preventing a recurrence shall be submitted to the water supplier within five (5) working days of the spill.
- P. Monitoring for Hazardous Materials in Ground Water. If required by the \_\_\_\_\_, ground water monitoring well(s) shall be installed at the expense of the facility owner or operator in accordance with an approved ground water monitoring plan. The permittee shall be responsible for developing an approved ground water monitoring system. Samples shall be analyzed by a State-certified laboratory and the results reported to \_\_\_\_\_.
- Q. Alterations and Expansion. The \_\_\_\_\_ shall be notified in writing prior to the expansion, alteration, or modification of any activity that is subject to a Conditional Use. Approval by \_\_\_\_\_ is required before the activity subject to a Conditional Use can begin. The landowner or representative shall submit an explanation of the change in activity and the information as required by this ordinance above.

## ***Section 7.0        ADMINISTRATION REQUIREMENTS***

### ***Section 7.1    Subdivision and Land Development Review***

All subdivision proposals and other proposed new development plans within the Wellhead Protection District shall be reviewed by \_\_\_\_\_ for compliance with the provisions of this ordinance. It shall be the responsibility of the \_\_\_\_\_ to recommend approval, disapproval, or approval with modifications of the proposed subdivision or development plan.

### ***Section 7.2    Notice of Violation***

Whenever it is determined that there is a violation of this ordinance, A Notice of Violation shall be issued. The Notice of Violation shall:



1. Specify the violation or violations in writing.
2. Specify the length of time available to correct the violation.
3. Clearly state any penalties associated with the subject violation.
4. Provide a description of any rights of appeal.

***Section 7.3    Stop Work Orders***

The \_\_\_\_\_ is authorized to issue cease and desist orders whenever it becomes aware of violations of this ordinance.

***Section 7.4    Penalties***

All costs incurred by the \_\_\_\_\_, including engineering and attorney's fees for enforcing this ordinance shall be paid by the owner who violated the provisions of this ordinance.

A penalty of up to \$1,000 may be levied for any violation of this ordinance.

***Section 8.0***

***FEES***

***Fees Established by Resolution***

All fees for review of Subdivision and Land Development Plans shall be established by resolution of the appropriate local governing body. Fees established shall be reviewed annually and adjusted as required. The fees shall include reasonable costs involved with the implementation of this ordinance and may include Administrative and professional staff review costs.



**APPENDIX 1-D**

**Annotated Code of Maryland 4-400 Municipal Annexation**



# Annotated Code of Maryland

## Local Government Article , Subtitle 4-400

### §4-401. **Enlargement of Municipal Corporate Boundaries Authorized**

(a) Subject to subsections (b) and (c) of this section, the legislative body of a municipality may enlarge its boundaries by annexation as provided in this subtitle.

(b) The power of annexation applies only to land that:

(1) is contiguous and adjoining to the existing boundaries of the municipality; and

(2) does not create an unincorporated area that is bounded on all sides by:

(i) real property presently in the boundaries of the municipality;

(ii) real property proposed to be in the boundaries of the municipality as a result of the proposed annexation; or

(iii) any combination of real property described in item (i) or (ii) of this item.

(c) A municipality may not annex land that is in another municipality.

### §4-402. **How Annexation Initiated**

An annexation proposal may be initiated by:

(1) the legislative body of the municipality as provided in § 4-403 of this subtitle; or

(2) a petition in accordance with § 4-404 of this subtitle.

### §4-403. **Initiation by Legislative Body**

(a) Subject to subsection (b) of this section, an annexation resolution may be introduced in the legislative body of the municipality in accordance with:

(1) the requirements and practices applicable to its legislative enactments; and

(2) the requirements of § 4-303(a) of this title.

(b) Before an annexation resolution is introduced, the legislative body shall obtain consent from:

(1) at least 25% of the registered voters who are residents in the area to be annexed; and

- (2) the owners of at least 25% of the assessed valuation of the real property in the area to be annexed.
- (c) The annexation resolution:
  - (1) shall describe by a survey of courses and distances the exact area to be annexed;
  - (2) may also describe by landmarks and other well-known terms the exact area to be annexed; and
  - (3) shall contain a complete and detailed description of the conditions and circumstances that apply to:
    - (i) the change in boundaries; and
    - (ii) the residents and property in the area to be annexed.

#### **§4-404. Annexation Petition**

- (a) Subject to § 4-413 of this subtitle, an annexation petition shall be signed by:
  - (1) at least 25% of the registered voters who are residents in the area to be annexed; and
  - (2) the owners of at least 25% of the assessed valuation of the real property in the area to be annexed.
- (b) After an annexation petition is presented to the legislative body of the municipality, the presiding officer of the legislative body shall verify:
  - (1) the signatures on the petition; and
  - (2) that the petition meets the requirements of subsection (a) of this section.
- (c) (1) After verifying compliance with the requirements of this section, the presiding officer of the legislative body promptly shall cause a resolution proposing the change of boundaries as requested by the petition to be introduced in the legislative body.
- (2) The annexation resolution shall conform to the form and content requirements of this subtitle.

#### **§4-405. Annexation Resolution**

- (a) An annexation resolution shall provide that the residents in the area to be annexed and their property shall be added to the municipality, generally subject or not, as applicable, to specific provisions of the municipal charter.
- (b) (1) Notwithstanding subsection (a) of this section, an annexation resolution may provide, for stated periods and under specific conditions, special treatment of the residents in the area to be annexed and their property as to:

## ***Annexation Procedures Flow Chart***

- (i) rates of municipal taxation; and
  - (ii) municipal services and facilities.
- (2) After an annexation resolution takes effect, any change in the provisions for special treatment for stated periods and under specific conditions may be made only by a resolution enacted under this subtitle.

**§4-406. Public Notice and Hearing**

(a) After an annexation resolution is introduced, the chief executive and administrative officer of the municipality shall publish notice in accordance with the requirements of this section that:

- (1) briefly and accurately describes the proposed annexation and the applicable conditions and circumstances; and
- (2) specifies the date, time, and place that the legislative body sets for the public hearing on the proposed annexation.

(b) (1) Public notice of the annexation resolution shall be published:

- (i) 1. at least four times; or
- 2. if the total area of the proposed annexation is 25 acres or less, at least two times;
- (ii) at not less than weekly intervals; and
- (iii) in at least one newspaper of general circulation in the municipality and the area to be annexed.

(2) The public hearing shall be:

- (i) set no sooner than 15 days after the final required publication of the public notice; and
- (ii) held in the municipality or the area to be annexed.

(c) Immediately after the first publication of the public notice, the municipality shall provide a copy of the public notice to:

- (1) the governing body of the county in which the municipality is located; and
- (2) any regional or State planning agency with jurisdiction in the county.

(d) The county and any regional or State planning agency with jurisdiction in the county has the right to be heard before the public at the hearing on the proposed annexation.

(e) (1) The public hearing may be rescheduled for or continued to a later date not more than 30 days after:

- (i) the date when the hearing was originally scheduled; or
- (ii) the date on which the hearing began but was not completed.



(2) If the hearing is rescheduled or continued, public notice shall be published:  
(i) at least 7 days before the date of the rescheduled or continued hearing; and  
(ii) in a newspaper of general circulation in the municipality and the area to be annexed.

(3) The public notice shall:

- (i) briefly and accurately describe the area to be annexed; and
- (ii) specify the date, time, and place of the rescheduled or continued public hearing.

**§4-407. Enactment and Effective Date**

(a) After a public hearing, the legislative body of a municipality may enact an annexation resolution in accordance with its normal legislative procedure.

(b) The annexation resolution may not take effect until at least 45 days after its enactment.

**§4-408. Petition of Resolution to Referendum by Residents of Areas to be Annexed**

(a) Subject to § 4-413 of this subtitle, at any time within 45 days after enactment of an annexation resolution, at least 20% of the registered voters who are residents in the area to be annexed may petition the chief executive and administrative officer of the municipality in writing for a referendum on the resolution.

(b) After a petition is presented to the chief executive and administrative officer, the officer shall verify:

- (1) the signatures on the petition; and
- (2) that the petition meets the requirements of subsection (a) of this section.

(c) After verifying compliance with the requirements of this section, the chief executive and administrative officer, by proclamation, shall suspend the effectiveness of the annexation resolution pending the results of the referendum.

**§4-409. Petition of Resolution to Referendum by Residents of Municipality**

(a) At any time within 45 days after enactment of an annexation resolution, at least 20% of the qualified voters of the municipality may petition the chief executive and administrative officer of the municipality in writing for a referendum on the resolution.

(b) After a petition is presented to the chief executive and administrative officer, the officer shall verify:

- (1) the signatures on the petition; and
- (2) that the petition meets the requirements of subsection (a) of this section.
- (c) After verifying compliance with the requirements of this section, the chief executive and administrative officer, by proclamation, shall suspend the effectiveness of the annexation resolution pending the results of the referendum.

**§4-410. Petition of Resolution to Referendum by County Governing Body**

- (a) At any time within 45 days after enactment of an annexation resolution, the governing body of the county or counties in which the municipality is located, by at least a two-thirds majority vote, may petition the chief executive and administrative officer of the municipality for a referendum on the resolution.
- (b) After verifying compliance with the requirements of this section, the chief executive and administrative officer, by proclamation, shall suspend the effectiveness of the annexation resolution pending the results of the referendum.

**§4-411. Referendum Timing and Public Notice**

- (a) The chief executive and administrative officer of the municipality shall schedule a referendum on the annexation resolution and publish notice of the date, time, and place at which the referendum will be held.
- (b) The referendum shall be held:
  - (1) no sooner than 15 days and no later than 90 days after notices of the referendum are published; and
  - (2) at one or more places in:
    - (i) the municipality, for the referendum in the municipality; and
    - (ii) the area to be annexed, for the referendum in that area.
- (c) Public notice of the referendum shall be published:
  - (1) twice at not less than weekly intervals; and
  - (2) in at least one newspaper of general circulation in the municipality and

**§4-412. Conduct of Referendum**

- (a) The governing body of a municipality, by ordinance, resolution, or regulation, may provide for conducting and tabulating the results of a referendum held under this subtitle.
- (b) (1) The annexation resolution shall be submitted to:

- (i) a referendum of the qualified voters of the municipality if the petition for referendum was presented by the residents of the municipality;
  - (ii) subject to § 4-413 of this subtitle, a referendum of the registered voters who are residents in the area to be annexed if the petition for referendum was presented by the residents of the area to be annexed; or
  - (iii) separate referendums of the voters specified in items (i) and (ii) of this paragraph if a petition for referendum was presented by the residents of the municipality and the residents in the area to be annexed.
- (2) A petition for referendum presented by the governing body of a county shall be acted on in the same manner as a petition for referendum presented by the residents of the area to be annexed.
- (c) The ballot shall:
- (1) contain a summary of the annexation resolution; and
  - (2) provide for the voter to indicate a choice for or against the annexation resolution.
- (d) (1) If only one petition for a referendum is filed and if a majority of the persons voting on the annexation resolution vote for the resolution, the resolution takes effect on the 14th day after the referendum.
- (2) (i) If a referendum is conducted for both the residents of the municipality and the residents in the area to be annexed, the votes cast for the two referendums shall be tabulated separately to show the votes cast in the municipality and the area to be annexed.
- (ii) If in both referendums a majority of the persons voting on the annexation resolution vote for the resolution, the resolution takes effect on the 14<sup>th</sup> day after the referendum.
- (iii) If two referendums are held, the annexation resolution is void unless a majority in both referendums vote for the resolution.
- (e) The municipality shall pay for a referendum held under this subtitle.

**§4-413. Who May Sign Petition and Vote in Referendum in Special Circumstances**

If fewer than 20 residents in an area to be annexed are eligible to sign a petition for annexation and vote in a referendum under this subtitle, any person, including the two or more joint owners of jointly owned property, who owns real property in the area to be annexed may sign the petition and vote in the referendum.

**§4-414. Completed Annexation Notification Requirements**

(a) (1) The chief executive and administrative officer of a municipality that has annexed property shall send a copy of the annexation resolution with the new boundaries to:

- (i) the clerk or similar official of the municipality;
- (ii) (ii) the clerk of the court in any county in which the municipality is located;
- (iii) (iii) the Department of Legislative Services in accordance with paragraph (2) of this subsection; and
- (vi) (iv) for any municipality located in the regional district, the Maryland–National Capital Park and Planning Commission.

(2) The annexation resolution shall be sent to the Department of Legislative Services within 10 days after the resolution takes effect.

(b) Each official or agency that receives an annexation resolution under subsection (a) of this section shall:

- (1) keep on record the resolution with the new boundaries; and
- (2) make the resolution available for public inspection during regular business hours.

**§4-415. Annexation Plan Requirements**

(a) In addition to, but not as part of, an annexation resolution, the legislative body of the municipality shall adopt an annexation plan for the area to be annexed.

(b) Except as provided in subsection (e) of this section, for an annexation that began before October 1, 2009, the annexation plan shall:

- (1) contain a description of the land use pattern proposed for the area to be annexed, which may include a county master plan already in effect for the area;
- (2) describe the schedule to extend each municipal service performed in the municipality at the time of the annexation to the area to be annexed;
- (3) describe the general methods by which the municipality anticipates financing the extension of municipal services to the area to be annexed; and
- (4) be presented so as to demonstrate the available land for public facilities that may be considered reasonably necessary for the proposed use, including facilities for schools, water or sewage treatment, libraries, recreation, or fire or police services.

(c) Except as provided in subsection (e) of this section, for annexation that begins on or after October 1, 2009, the annexation plan shall be consistent with the municipal growth element of the comprehensive plan of the municipality.

- (d) For purposes of subsections (b) and (c) of this section, an annexation begins when a proposal for annexation is initiated by:
- (1) resolution under § 4-403 of this subtitle; or
  - (2) petition under § 4-404 of this subtitle.
- (e) (1) On or after October 1, 2009, a municipality may submit an annexation plan under subsection (b) of this section if the municipality is granted an extension for the inclusion of a municipal growth element under § 3-304 of the Land Use Article.
- (2) After the expiration of a final extension granted under § 3-304 of the Land Use Article for the inclusion of a municipal growth element, an annexation plan shall be submitted in accordance with subsection (c) of this section.
- (f) At least 30 days before the public hearing on an annexation resolution required under § 4-406 of this subtitle, a copy of the annexation plan shall be provided to:
- (1) the governing body of any county in which the municipality is located;
  - (2) the Department of Planning; and
  - (3) any regional or State planning agency with jurisdiction in the county.
- (g) (1) The annexation plan shall be open to public review and discussion at the public hearing on the annexation resolution.
- (2) An amendment to the annexation plan does not:
- (i) amend the proposed annexation resolution; or
  - (ii) cause a reinitiation of the annexation procedure then in process.

#### §4-416. **Zoning within Annexed Area**

- (a) (1) Notwithstanding § 4-104(f) of this title, if an area is annexed to a municipality that has planning and zoning authority at the time of annexation, the municipality shall have exclusive jurisdiction over planning, subdivision control, and zoning in the area annexed.
- (2) Paragraph (1) of this subsection does not grant any planning or zoning power or subdivision control to a municipality that is not authorized to exercise planning or zoning power or subdivision control at the time of annexation.
- (b) Without the express approval of the county commissioners or county council of the county in which the municipality is located, for 5 years after an annexation by a municipality, the municipality may not allow development of the annexed land for land uses substantially different than the authorized use, or at a substantially higher density, not exceeding 50%, than could be granted for the proposed development, in accordance with the zoning classification of the county applicable at the time of the annexation.

(c) Notwithstanding § 4-204 of the Land Use Article and if the county expressly approves, the municipality may place the annexed land in a zoning classification that allows a land use or density different from the land use or density specified in the zoning classification of the county or agency with planning and zoning jurisdiction over the land prior to its annexation applicable at the time of the annexation.

**APPENDIX 1-E**

**Intermunicipal Agreements for Sewerage  
and/or Water Service**





THIS AGREEMENT, Made this 18<sup>th</sup> day of August, 1982, by and between the Town Of Chestertown, Maryland, a municipal corporate body politic, of the State of Maryland, hereinafter referred to as "Town", party of the first part, and the Kent County Sanitary District, Inc., a municipal body politic of the State of Maryland, hereinafter referred to as the "Commission", party of the second part.

WITNESSETH:

WHEREAS, under the provisions of Article 43, Section 650, of the Maryland Code Annotated, a Sanitary district which has been created under Article 43, Section 646 of the Maryland Code Annotated, is authorized to contract with any municipality on such terms as said Commission may determine proper for the operation of any project, and

WHEREAS, the Commission has been formed under said provisions of Article 43, Section 646 of said Maryland Code Annotated, and

WHEREAS, the Town is an incorporated municipality, lawfully created in Kent County, State of Maryland, and said Town owns and operates sewerage treatment and disposal facilities for the benefit of the citizens who live within its incorporated borders, which facilities are adequate under State regulations, to handle most sewage which is generated by said citizens who live within said borders of said Town, and

WHEREAS, the Town and the Commission have mutually settled upon the provisions of an agreement wherein said Town would make available some of its excess sewage treatment capacity to the residents of the Commission living in the Quaker Neck/Country Club Estates section of said District, provided that the Commission causes to be constructed the necessary sewage

*Law Office*  
PAUL M. BOWMAN  
P. O. BOX 70  
100 CASH STREET  
CHESTERTOWN, MARYLAND 21620  
301 778 3171

collection mains and brings them to a point where they will discharge into the treatment facility owned by the Town, which provisions and the implementations thereof are embodied herein.

NOW, THEREFORE THIS AGREEMENT WITNESSETH:

That the Town and the Commission, in consideration of their mutual covenants herein made, as well as the sum of ONE DOLLAR (\$1.00) current money of the United States of America, by each paid unto the other, the receipt of which is hereby acknowledged, hereby covenant and agree as follows:

1. CONSTRUCTION OF SEWERAGE SYSTEM. The Commission shall, at its own cost and expense, construct such sewerage system as it deems advisable in those areas of Quaker Neck and Country Club Estates which are currently a part of the Commission, which system shall terminate where the same enters The Town Treatment Facility, which is adjacent to John Hanson Road, and make such additions and extensions and to permit such connections to such system as it deems advisable, with the consent of the Town.

2. PAYMENT OF COMMISSION TO TOWN. The Commission agrees to pay the Town for receiving and treating the sewage, and the fair share of amortization of the Bonds for the facilities used by the residents of the said Quaker Neck and Country Club Estates section of the Commission the following amount:

a. A lump sum amount of \$8,000.00 per year which will cover 150 revenue units (the term "revenue unit" being hereafter defined). If it becomes necessary to connect more than 150 revenue units, the annual payment shall be increased in direct proportion to the increased number of revenue units added.

b. The payment to the Town will commence when 50% of the base amount of revenue units are actually connected to the system. Payment at this point shall be at a rate proportionate

to the number of revenue units actually connected.

c. One year after the Commission's engineer declares in writing that the newly installed system is complete and ready for the homes to connect the system, the Commission shall pay the Town the full rate described above whether all revenue units are connected or not.

d. Payments will be made quarterly on MAY 1, AUGUST 1, NOVEMBER 1 and FEBRUARY 1, and be pro-rated on a quarterly basis for units joining the system within each quarter. Provided that, the Commission agrees to pay interest at a rate of 8% PER ANNUM on any amounts due the Town, and not paid by the above mentioned date.

e. It is further understood and agreed between the parties, that the above payments are to be made by the Commission to the Town regardless of whether or not the Commission has actually collected any monies from the units representing said monies.

f. Provided further, that the term "REVENUE UNIT" shall be defined as equivalent to one residential usage actually hooked to the system and the Commission shall have the right to set and define how many revenue units are located in each individual commercial structure considering, however, that the method used for determining this shall be commensurate with the method used by the Town to bill commercial and residential structures within the Town.

g. The above charge shall be re-evaluated every 5 years. Any increase in the fee must be based on an actual increase in costs to the Town.

3. MAINTENANCE, OWNERSHIP AND OPERATION OF SYSTEM. In consideration of the payments provided for in paragraph 2, the Town agrees to accept and treat the sanitary sewage from the said Quaker Neck and Country Club Estates area in its existing

sewage treatment facility. The Commission will handle all billing to the residents and users, including the collection of commercial fees and special assessments, if any.

The Commission agrees to maintain all sewage collection mains, pumping stations, and all other equipment and various parts of the sewage system which lead from the private residences in the said Quaker Neck and Country Club Estates area to the Town's existing treatment facility.

It is further agreed that the Commission shall be the owner of the said sewage system in Quaker Neck and Country Club Estates area, this not to include the Town's existing facility.

4. INSPECTION OF RECORDS AND BOOKS. The parties agree that the Town shall have the right, at any time during business hours, upon reasonable notice, to inspect the records of the Commission which pertain to the number of units connected to the system.

5. WASTES. The Commission shall discharge only residential and industrial wastes of the same strength as that in normal domestic sewers into the Town's sewerage system, unless adequate pre-treatment is given prior to their passing through the Commission's pumping station.

6. TERM. This Agreement shall be for a term of THIRTY (30) YEARS from the date hereof.

This Agreement may be amended at any time by the mutual agreement of the parties hereto, but it may not be terminated without the approval of the Maryland State Dept. of Health and Mental Hygiene.

7. RENEWALS OF AGREEMENT. The Commission shall have the option to renew this Agreement for an additional term of TEN (10) YEARS, upon the terms and provisions of this Agreement, by giving the Town notice in writing of its intention to renew said Agreement for an additional TEN (10) YEAR term, sixty (60) days

prior to the expiration of this Agreement.

If the Commission exercises its option to renew this Agreement for a TEN (10) YEAR term, then at the expiration of said TEN (10) YEAR term, said Commission shall have the option to renew this Agreement for another TEN (10) YEAR term, by giving written notice of its intention to renew said Agreement sixty (60) days prior to the expiration of said renewal term, said written notice to be hand delivered to the Town Mayor.

8. ARBITRATION. In case of any dispute or question between the parties hereto which shall arise under this Agreement the same shall be submitted to arbitration. Each party to the Agreement shall select one arbitrator and the two thus selected shall choose a third. In the event said two arbitrators cannot agree upon the selection of a third, they shall request that said third arbitrator be appointed by the resident Judge of the Circuit Court for Kent County, Maryland. The decision of a majority of the arbitrators shall be final and binding upon both parties to this Agreement.

IN WITNESS WHEREOF, The Town of Chestertown has caused these presents to be executed in its name by its Mayor and its corporate seal to be hereunto affixed, duly attested by the Town Manager, and the Kent County Sanitary District, Inc., has caused these presents to be executed in its name by its Chairman, and its corporate seal to be hereunto affixed, duly attested to by its Secretary, on the date first above written.

ATTEST:

THE TOWN OF CHESTERTOWN

*William B. [Signature]*  
Town Manager

BY: *Edna E. [Signature]* (SEAL)  
Mayor



PROCEEDINGS OF THE BOARD OF DIRECTORS OF THE KENT COUNTY SANITARY DISTRICT, INC.

Medford C. Capel (SEAL)  
Chairman

[Signature]  
Secretary-Treasurer

STATE OF MARYLAND, COUNTY OF KENT, to wit:

I HEREBY CERTIFY, That on this 16<sup>th</sup> day of August, 1982, before me, the subscriber, a Notary Public of the State and County aforesaid, personally appeared Clara E. Horsey, Mayor of the Town of Chestertown, a municipal corporation, and acknowledged the foregoing agreement to be the act and deed of said corporation.

WITNESS my hand and Notarial Seal.

Joan W. Merryman  
Notary Public



My Commission Expires:

July 1, 1982

STATE OF MARYLAND, COUNTY OF KENT, to wit:

I HEREBY CERTIFY, That on this 16<sup>th</sup> day of August, 1982, before me, the subscriber, a Notary Public of the State and County aforesaid, personally appeared William B. Nielsen, Town Manager of the Town of Chestertown and made oath in due form of law as to his (her) position, and that by resolution duly passed on the 16<sup>th</sup> day of August, 1982, at a properly constituted meeting of said Town Council, at which a quorum was present, said Council authorized Clara E. Horsey, Mayor of Chestertown, to enter into the above agreement with the Kent County Sanitary District, Inc., regarding acceptance and treatment of sewage effluent from the area known as Quaker Neck and Country Club Estates area.

WITNESS my hand and Notarial Seal.

Joan W. Merryman  
Notary Public



My Commission Expires:

July 1, 1986

STATE OF MARYLAND, COUNTY OF KENT, to wit:

I HEREBY CERTIFY, That on this 18<sup>th</sup> day of August, 1982, before me, the subscriber, a Notary Public of the State and County aforesaid, personally appeared Medford C. Capel, Chairman of The Kent County Sanitary District, Inc., a body

corporate of the State of Maryland, and acknowledged the afore-  
going agreement to be the act and deed of said corporation.

WITNESS my hand and Notarial Seal.

My Commission Expires:                     Suzanne Y. Mason                      
Notary Public

July 1, 1986

STATE OF MARYLAND, COUNTY OF KENT, to wit:

I HEREBY CERTIFY, That on this 18<sup>th</sup> day of August,  
1982, before me, the subscriber, a Notary Public of the State  
and County aforesaid, personally appeared W. Raymond Spencer,  
Secretary to the Kent County Sanitary District, Inc., and made  
oath in due form of law as to his position, and that by resolu-  
tion duly passed on the 18<sup>th</sup> day of August, 1982, at a  
properly constituted meeting of the Kent County Sanitary District,  
Inc., at which a quorum was present, said Sanitary District  
authorized Medford C. Capel, Chairman, to enter into the above  
agreement with the Mayor and Council of Chestertown, regarding  
acceptance and treatment of sewage effluent from the area known  
as Quaker Neck and Country Club Estates area.

WITNESS my hand and Notarial Seal.

My Commission Expires:                     Suzanne Y. Mason                      
Notary Public

July 1, 1986

ADDENDUM TO  
TOWN OF CHESTERTOWN  
AND  
KENT COUNTY SANITARY DISTRICT, INC.  
SEWER AGREEMENT OF AUGUST 18, 1982

THIS ADDENDUM, Made this 7<sup>th</sup> day of March, 1988, by and between the Town of Chestertown, Maryland, hereinafter referred to as the Town, and the Kent County Sanitary District, Inc., hereinafter referred to as the Commission, revises the Sewer Agreement made between the Town and the Commission on August 18, 1982, hereinafter referred to as the Original Agreement.

WHEREAS, Section 2.g. of the above mentioned document allows the Town to reevaluate, every five years, the fee charged for the acceptance of sewage, and to increase this fee if actual costs to the Town increase, and

WHEREAS, the 1987-88 Chestertown Water Study Committee Report indicated that the increased cost of operating the Town system necessitates an increase from \$8,000 to \$9,000 in the annual fee established in the Original Agreement.

NOW, THEREFORE THIS AGREEMENT WITNESSETH:

That the Town increase the annual fee charged to the Commission to \$9,000 annually, based on increased costs of operation, and that the Commission begin the payment of this amount on a full or prorated basis, effective April 1, 1988.

IN WITNESS THEREOF, The Town of Chestertown has caused these presents to be executed in its name by its Mayor and its corporate seal to be hereunto affixed, duly attested by the Town Manager, and the Kent County Sanitary District, Inc., has caused these presents to be executed in its name by its Chairman, and its corporate seal to be hereunto affixed, duly attested to by its Secretary, on the date first above written.

ATTEST:

William S. Hagerhall  
Town Manager

THE TOWN OF CHESTERTOWN

BY: Elmer E. Horsey (SEAL)  
Elmer E. Horsey, Mayor



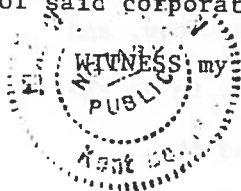
KENT COUNTY SANITARY DISTRICT, INC.

*M. Raymond Spencer*  
Secretary-Treasurer

By: *Medford C. Capel* (SEAL)  
Medford C. Capel, Chairman

STATE OF MARYLAND, COUNTY OF KENT, TO WIT:

I HEREBY CERTIFY that on this 4th day of February, 1988, before me, the subscriber, a Notary Public of the State and County aforesaid, personally appeared Elmer E. Horsey, Mayor of the Town of Chestertown, a municipal corporation, and acknowledged the foregoing agreement to be the act and deed of said corporation.



WITNESS my hand and Notarial Seal.

*James W. Harrington*  
Notary Public

My Commission Expires:  
July 1, 1990

STATE OF MARYLAND, COUNTY OF KENT, TO WIT:

I HEREBY CERTIFY that on this 7th day of March, 1988, before me, the subscriber, a Notary Public of the State and County aforesaid, personally appeared Medford C. Capel, Chairman of the Kent County Sanitary District, Inc., a body corporate of the State of Maryland, and acknowledged the foregoing agreement to be the act and deed of said corporation.

WITNESS my hand and Notarial Seal.

*James W. Harrington*  
Notary Public

My Commission Expires:  
July 1, 1990

copy  
file  
7/27/93

ADDENDUM TO  
TOWN OF CHESTERTOWN  
AND

KENT COUNTY SANITARY DISTRICT, INC.  
SEWER AGREEMENT OF AUGUST 18, 1982

THIS ADDENDUM, Made this 15<sup>th</sup> day of July, 1993, by and between the Town of Chestertown, Maryland, hereinafter referred to as the Town, and and the Kent County Sanitary District, Inc., hereinafter referred to as the Commission, revises the Sewer Agreement made between the Town and the Commission on August 18, 1982, hereinafter referred to as the Original Agreement.

WHEREAS, Section 2.g. of the above mentioned document allows the Town to reevaluate, every five years, the fee charged for the acceptance of sewage, and to increase this fee if actual costs to the Town increase, and

WHEREAS, the last reevaluation was executed on March 7, 1988 following the 1987-88 Chestertown Water Study Committee Report, and,

WHEREAS, the 1992-93 Chestertown Water Study Committee Report indicated that the increased cost of operating the Town system necessitates an increase to \$22.50 a quarter per each revenue unit.

NOW, THEREFORE THIS AGREEMENT WITNESSETH:

That the Town increase the annual fee charged to the Commission to \$22.50 per revenue unit quarterly, based on increased costs of operation, and that the Commission begin the payment of this amount on a full or prorated basis, effective July 1, 1993.

IN WITNESS WHEREOF, the Town of Chestertown has caused these presents to be executed in its name by its Mayor and its corporate seal to be hereunto affixed, duly attested by the Town Manager, and the Kent County Sanitary

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District, Inc., has caused these presents to be executed in its name by its Chairman, and its corporate seal to be hereunto affixed, duly attested to by its Secretary, on the date first above written.

ATTEST:

THE TOWN OF CHESTERTOWN

W. Stigeboll  
Town Manager

By: Elmer E. Horsey (SEAL)  
Elmer E. Horsey, Mayor

KENT COUNTY SANITARY DISTRICT, INC.

Oliver C. Briscoe  
Secretary-Treasurer

By: Harry D. Whiteley (SEAL)  
Harry D. Whiteley, Chairman

STATE OF MARYLAND, COUNTY OF KENT, TO WIT:

I HEREBY CERTIFY that on this 15<sup>th</sup> day of July, 1993, before me, the subscriber, a Notary Public of the State and County aforesaid, personally appeared Elmer E. Horsey, Mayor of the Town of Chestertown, a municipal corporation, and acknowledged the foregoing to be the act and deed of said corporation.

WITNESS my hand and Notarial Seal.

  
My Commission Expires: 3/1/94

Joan W. Merryman  
Notary Public

STATE OF MARYLAND, COUNTY OF KENT, TO WIT:

I HEREBY CERTIFY that on this 7<sup>th</sup> day of July, 1993, before me, the subscriber, a Notary Public of the State and County aforesaid, personally appeared Harry D. Whiteley, Chairman of the Kent County Sanitary District, Inc., a body corporate of the State of Maryland, and acknowledged

the foregoing agreement to be the act and deed of said corporation.

WITNESS my hand and Notarial Seal.

Theresa A. Crew

My Commission Expires:

4/22/97

Notary Public



THIRD ADDENDUM  
TO  
TOWN OF CHESTERTOWN  
AND  
KENT COUNTY SANITARY DISTRICT, INC.  
SEWER AGREEMENT OF AUGUST 18, 1982

THIS THIRD ADDENDUM is made this 14<sup>th</sup> day of MAY, 1997, by and between the Town of Chestertown, Maryland, hereinafter referred to as "Town" and The Kent County Sanitary District, Inc., hereinafter referred to as the "Commission".

WHEREAS, the Town and Commission entered into an Agreement on August 18, 1982, wherein the Town agreed to make available sewage treatment capacity to the Commission for the benefit of residents in the Quaker Neck Subservice Area, hereinafter referred to as the "Quaker Neck Sewer Agreement"; and

WHEREAS, the First Addendum to the Quaker Neck Sewer Agreement, dated March 7, 1982, provided that the lump sum annual fee payable to the Town be increased to \$9,000.00; and

WHEREAS, the Second Addendum to the Quaker Neck Sewer Agreement, dated July 15, 1993, provided that the lump sum annual fee payable to the Town be replaced by a quarterly fee of \$22.50 per Revenue Unit ("Revenue Unit" being defined in the Quaker Neck Sewer Agreement); and

WHEREAS, the Quaker Neck Sewer Agreement originally contemplated 150 Revenue Units, but actual use has increased to 187 Revenue Units; and

WHEREAS, the Town and the Commission have agreed that there is a need in the Quaker Neck Subservice area for a total of 236 Revenue Units to meet the needs of unbuilt lots presently along the sewer line completed in 1982.

NOW, THEREFORE, THIS AGREEMENT WITNESSETH: That for and in consideration of the sum of Ten (\$10.00) and other good and valuable consideration, paid by Commission to Town, the receipt of which is hereby acknowledged, the Town and Commission do hereby agree as follows:

I. That the Town make available to Commission a total of 236 Revenue Units, to be used solely in the service areas shown on the attached service area drawing. It is further agreed that 236

Revenue Units is the final number of Revenue Units needed in the Service Area (unless mutually agreed in writing by Town and Commission) and provides for all lots where benefit assessments have been paid to the Commission. If it is determined that, for one reason or another, any existing lot is unbuildable, the Revenue Unit lost to the Commission can be used elsewhere in the service area delineated on the attached drawing.

2. That paragraph 2.a. of the Quaker Neck Sewer Agreement be amended to read as follows:  
a. A quarterly lump sum payment shall be paid by the Commission to the Town for all Revenue Units (the term "Revenue Unit" being hereafter defined) hooked up to the system, including Revenue Units hooked up during the quarter of the billing. Said billing will reflect the Town sewer rate in effect at the time.

3. In all other respects the Quaker Neck Sewer Agreement shall remain in full force and effect.

IN WITNESS WHEREOF, the Town of Chestertown has caused these presents to be executed in its name by its Mayor and its corporate seal to be hereunto affixed, duly attested by the Town Manager, and the Kent County Sanitary District, Inc. has caused these presents to be executed in its name by its Chairman, and its corporate seal to be hereunto affixed, duly attested by its Secretary, on the day first above written.

WITNESS/ATTEST:

William S. Ingersoll  
William S. Ingersoll, Town Manager

THE TOWN OF CHESTERTOWN

By: Margo G. Bailey [SEAL]  
Margo G. Bailey, Mayor

THE KENT COUNTY SANITARY DISTRICT,  
INC.

Oliver E. Briscoe  
Oliver E. Briscoe, Secretary-Treasurer

By: Harry D. Whiteley [SEAL]  
Harry D. Whiteley, Chairman

the foregoing agreement to be the act and deed of said corporation.

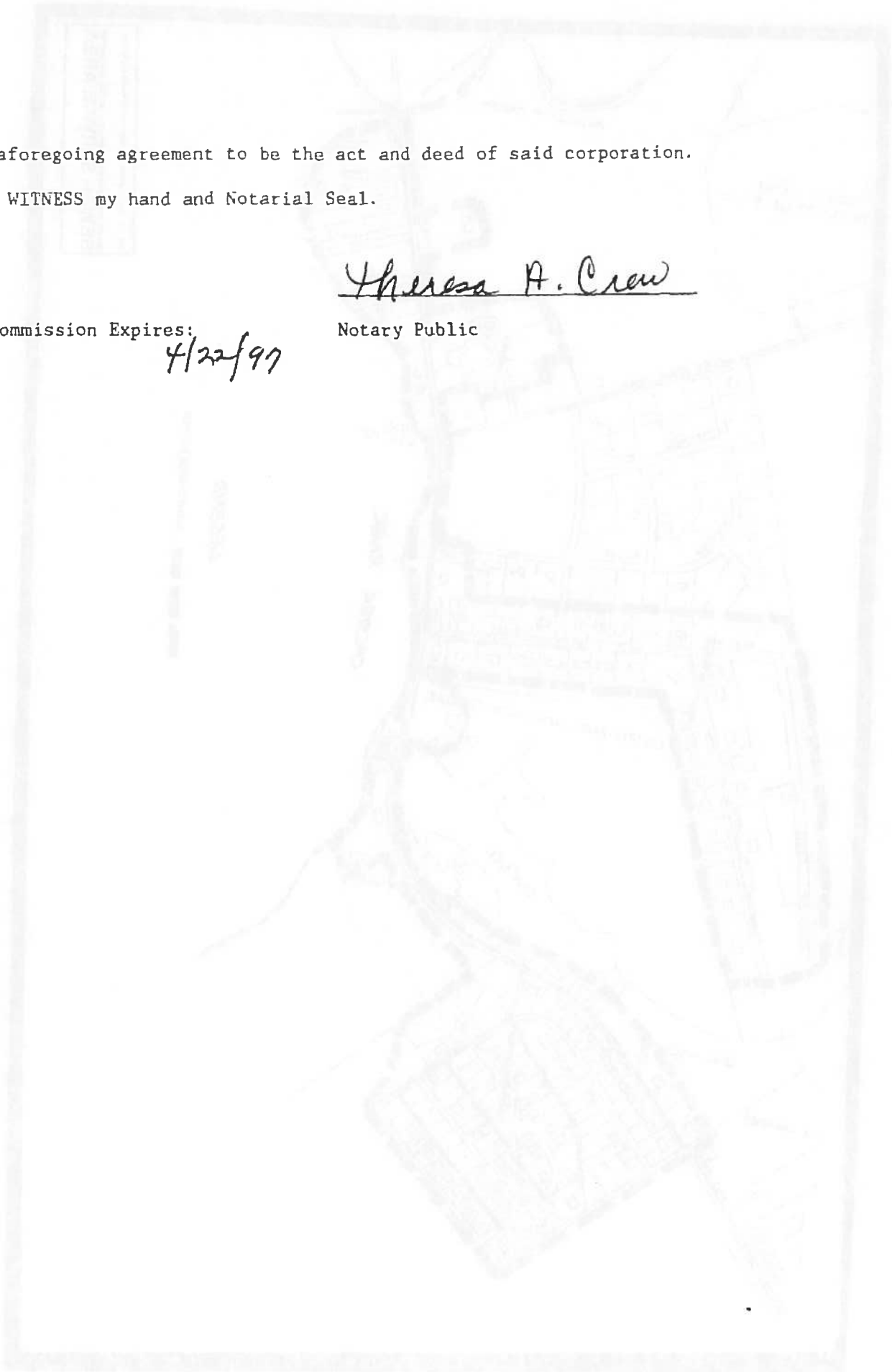
WITNESS my hand and Notarial Seal.

Theresa A. Crew

My Commission Expires:

4/22/97

Notary Public



WASTE WATER  
STABILIZATION POND

HADCLIFF CREEK

298

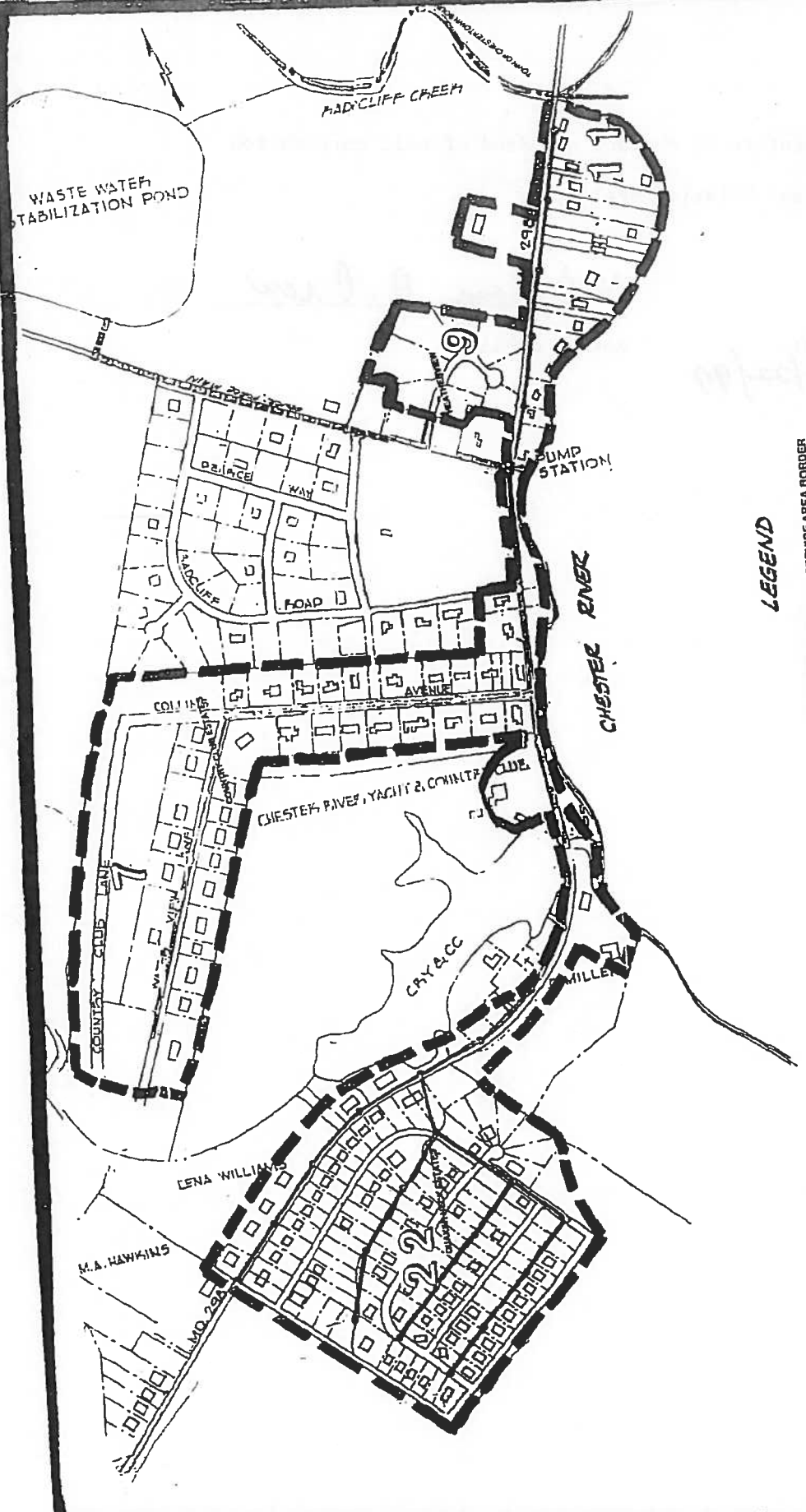
PUMP  
STATION

CHESTER RIVER

LEGEND

SERVICE AREA BORDER

TOWN OF CHESTERTON AND WEST COUNTY SANITARY DISTRICT  
DANGER TO LIFE AND PROPERTY - CHESTERTON AND WEST COUNTY  
SEWER SERVICE AREA



M.A. HAWKINS

LENA WILLIAMS

MO. 298

CRY & CO.

MILLERSVILLE

CHESTNUT AVENUE, YACHT & COMPANY

COLLIER

FOAD

HADCLIFF

DELRICE

WAIN



221  
30  
165

### SEWER WASTEWATER SERVICE AGREEMENT

THIS AGREEMENT, by and between the Mayor and Council of the town of Millington, ("Town"), and The County Commissioners of Kent County, Maryland ("County"), made this 13<sup>th</sup> day of April, 2004;

WITNESSETH, whereas the Town is an incorporated municipality in Kent County and Queen Anne's County, Maryland, and the County is also an incorporated municipality, and the state is contemplating the installation for the improvement of a wastewater plant in cooperation with the County, and,

WHEREAS there are certain properties within the County located close to the Town which will benefit by having an available wastewater system, and the Town and the County hereby agree as follows:

1. The engineering plans and studies prepared by McCrone are incorporated herein and made a part hereof.
2. The wastewater plant, per se, and the lines shall be property of the Town, and the County shall own and maintain the sewer lines and grinder pumps beginning at the Town's boundary at the new manhole #38A on Route 291, and also the lines and pump station in the Sandfield subdivision terminating at manhole #17 located north on Route 313, all as indicated by the aforesaid construction plans by McCrone's engineering study.
3. The County currently has allocations for 88 Equivalent Dwelling Units (EDU's)/22,000 gallons per day (gpd). The Town and County have mutually agreed whereby the Town will sell the Commissioners additional capacity for 133 EDU's/33,250 gpd, for which the County shall pay the Town Six Hundred Ninety Thousand Dollars (\$690,000). All Contract Change Orders increasing construction cost and approved by Rural Development would also be shared. The first payment of Three Hundred Thousand Dollars (\$300,000) shall be made once the County's Collection System is complete and ready for use. The second payment of One Hundred Fifty Thousand Dollars (\$150,000) shall be made to the Town when substantial completion of the new Bio-Lac treatment process is given to the contractor, and the final payment of Two Hundred Forty Thousand Dollars (\$240,000) shall be made at project close out.
4. The Town will grant an easement to the County to enter, construct and maintain the pump station located at Robvanary Park, near the Town's westerly boundary line along Route 291.
5. There is an existing agreement by and between the County and the Town wherein the County is paying the Town \$61.50 per EDU quarter. This agreement was entered into by and between the Town and the Kent County

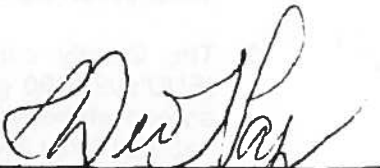
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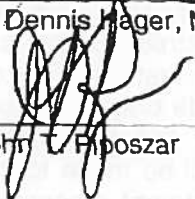
Sanitary District on September 17, 1997, pursuant to a letter from Mayor Hager that established an annual rate per ERU (the Town's equivalent of EDU) of Two Hundred Forty Six Dollars (\$246.00) per year, effective July 1, 1997. The County shall continue to make payments to the Town on a quarterly basis (February 1, May 1, August 1, and November 1). When the first Fiscal Year audit numbers are complete, the old agreement shall be null and void, and the following charging formula will be implemented: 'The total cost to operate the plant, including administration costs (based on year end audit numbers), will be divided by the total number of EDU's on the system to obtain a cost per EDU. That number will be multiplied by the total number of EDU's connected to the County system to determine the next FY quarterly payments to the Town.' The terms EDU and ERU shall be defined as equivalent to one residential usage actually connected to the system.

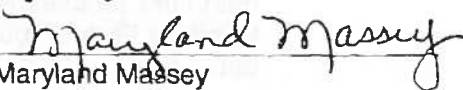
6. The Town and County shall negotiate future growth capacity, which may require allocations beyond that which is agreed upon, when and if such capacity becomes necessary.
7. The terms of this agreement shall be forty years (40) from the date hereof and shall thereafter be renewed and renegotiated by the parties.
8. Each party does hereby agree to save the other party harmless from any and all claims, suits and damages arising out of that portion of the system that is under the party's control.

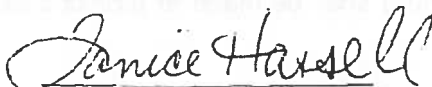
IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized representatives on the day and year first above written.

The Mayor and Council of Millington, Maryland,

  
\_\_\_\_\_  
R. Dennis Hager, Mayor

  
\_\_\_\_\_  
John T. Pioszar

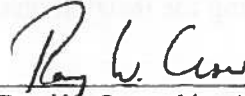
  
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Maryland Massey

  
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Attest

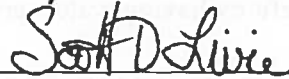
The County Commissioners of Kent County, Maryland



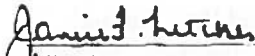
William W. Pickrum, President



Roy W. Crow, Member



Scott D. Livie, Member

  
Attest

## WATER SERVICE AGREEMENT

THIS AGREEMENT, by and between the Mayor and Council of the town of Millington, ("Town"), and The County Commissioners of Kent County, Maryland ("County"), made this 21st day of September, 2004;

WITNESSETH, whereas the Town is an incorporated municipality in Kent County, and Queen Anne's County, Maryland, and the County is also an incorporated municipality, and the Town is contemplating the installation of a municipal water system in cooperation with the County; and;


WHEREAS there are certain properties within the County located close to the Town which will benefit by having water service, and the Town and the County hereby agree as follows:

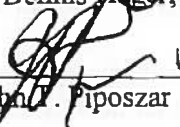
1. The engineering plans and studies prepared by McCrone, and the "Annual Operating and Maintenance Projection" in the McCrone engineering study are incorporated herein and made a part hereof.
2. The water plant, distribution lines, fire hydrants, and meters within the Town limits, together with the distribution lines and the division valve all as shown on the McCrone plans shall be owned by and be the responsibility of the Town.
3. BEGINNING AT the division valve located on the Town boundary, where the boundary crosses Route 291, all water lines, fire hydrants, water meters West on Route 291; and all water lines, fire hydrants, and meters located within the Sandfield subdivision, plus all lines, fire hydrants, and meters located North of the division valve on Route 313, all as is more particularly shown on the McCrone plans, shall be owned by and be the responsibility of the County.
4. The County is to purchase from the Town water capacity for the 88 existing equivalent dwelling units (EDUs), plus the proposed 96 EDU's west of town for which the County shall pay the Town the sum of Five Hundred and Fourteen Thousand, Two Hundred Fifty Seven Dollars (\$514,257) for the allocation of this capacity. Plus cost associated with Contract Change Orders approved by R.U.S.. The first payment of Two Hundred and Fifty Thousand Dollars (\$250,000) shall be made once the County's System is complete and ready for use. The second payment of One Hundred and Twenty Five Thousand Dollars (\$125,000) shall be made to the Town when substantial completion is given to the contractor, and the final payment of One Hundred and Thirty Nine Thousand, Two Hundred and Fifty Seven Dollars (\$139,257) shall be made at project close out. 1984 FEA
5. The County will pay the Town Twenty-Four (\$24.00) Dollars per EDU each quarter, which payment shall begin six months after the system is ready for hook-ups. See McCrone study, Table 20, Study Area 2C on page 18 of Plan dated December 15, 2000.

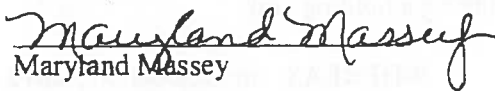
6. The administration and maintenance costs and the EDU charge will be adjusted according to the following formula, and will be calculated annually utilizing FY audit figures after the system has been on line for one year.
  - a. The quarterly costs shall be determined by taking the total operations, administration, and maintenance costs of the Plant and Tank and dividing the resulting figure by the total EDUs to obtain the costs per EDU, which resultant cost shall be multiplied by the number of EDUs the County has connected to the system. This figure is to be reviewed annually and adjusted pursuant to the annual audit figures to figure the next FY quarterly payments to the Town.
  - b. "EDU" is one residential unit actually connected to the system.
7. The Town and County shall negotiate future growth capacity that may require allocation beyond that, which is agreed upon, when and if such capacity becomes necessary.
8. The term of this Agreement shall be Forty years (40) from the date hereof, and shall thereafter be renewed and renegotiated by the parties.
9. Each party does hereby agree to save the other party harmless from any and all claims, suits, damages, arising out of that portion of the system which is under that party's control.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized representatives on the day and year first above written.

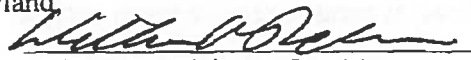
The Mayor and Council of Millington, Maryland,

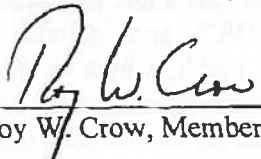
  
 \_\_\_\_\_  
 R. Dennis Heger, Mayor

  
 \_\_\_\_\_  
 John J. Fiposzar

  
 \_\_\_\_\_  
 Maryland Massey

The County Commissioners of Kent County, Maryland

  
 \_\_\_\_\_  
 William W. Pickrum, President

  
 \_\_\_\_\_  
 Roy W. Crow, Member

  
 \_\_\_\_\_  
 Scott D. Livie, Member

WASTEWATER TREATMENT AGREEMENT  
Between  
TOWN OF GALENA  
And  
COUNTY COMMISSIONERS OF KENT COUNTY

THIS WASTEWATER TREATMENT AGREEMENT (this "Agreement") is made this 3<sup>rd</sup> day of November 2015 between the TOWN OF GALENA, an incorporated municipality in the State of Maryland (the "Town"), and the COUNTY COMMISSIONERS OF KENT COUNTY, a political subdivision and body corporate and politic of the State of Maryland (the "County").

RECITALS

WHEREAS, the Town and the County each currently own and operate sewerage treatment and disposal facilities for the benefit of the citizens who live within their respective jurisdictional borders;

WHEREAS, the Town and County are in the process of designing and building a new upgraded Wastewater Treatment Plant in the Town of Galena and related facilities (the "WWTP"), which have more capacity for the treatment of sewerage than the existing plant;

WHEREAS, the Georgetown area of Kent County is not located within an area currently served by County wastewater treatment facilities;

WHEREAS, there are residences and businesses in the Georgetown area that have septic systems that are either non-existent or failing, including a business that is currently utilizing a holding tank;

WHEREAS, on October 31, 2012 the County adopted a Comprehensive Water and Sewerage Plan (the "Plan") to include Georgetown and two additional locations near the Town as areas to receive sewer service;

WHEREAS, the Plan has been approved by the Maryland Department of the Environment ("MDE"), and includes an expansion of the Town WWTP to 110,000 gallons per day ("gpd"), which is the equivalent of 440 EDU's, in order to provide capacity to the Town users and to the Georgetown area and to properties in existing subdivisions located on Lee Avenue and Maplewood Lane (the "County Service Areas");

WHEREAS, the Town will need to utilize 80,000 gpd of capacity, which is the equivalent of 320 EDU's for treatment of existing and future sewerage generated by users of the Town sewerage system;

WHEREAS, the Town and the County have entered into various agreements governing the allocation of costs related to the engineering and construction of the WWTP; and

WHEREAS, it is in the best interest of the parties to enter into this Agreement to define, clarify, allocate, and set the allocations for operating costs of the WWTP;

NOW, THEREFORE, THIS AGREEMENT WITNESSETH, that for and in consideration of the mutual covenants and agreements herein contained, the receipt and sufficiency of all of which are hereby acknowledged, the parties hereto covenant and agree as follows:

Section 1. Design and Construction of Wastewater Treatment Plant and Facilities. The agreements for the non-construction and construction costs, shall remain in full force and effect, as from time to time amended.

Section 2. Growth Capacity.

(a) The County is hereby allocated, granted and reserved 30,000 gpd average daily flow, which is the equivalent of 120 Equivalent Dwelling Units ("EDUs"), at the WWTP for use in the County Service Areas as defined herein. The County may not add any additional service areas that (1) would intentionally cause the County to exceed its capacity allocation, or (2) would cause any change to, or violate, the terms or conditions of any federal or State grants or loans in respect of the financing for the plant without the consent of the Town and the federal or State agencies involved in the financing of the WWTP. Any such additional service areas shall be in conformance with the Kent County Master Water and Sewer Plan approved by the State of Maryland. The total capacity of the WWTP is 110,000 gpd. It is understood that the Town will be utilizing up to 80,000 gpd (320 EDUs). Therefore, the Town is under no obligation to provide any additional capacity above 30,000 gpd (120 EDUs) to the County. In the event that either party exceeds its allocation based on quarterly metered data, the party exceeding its allocation shall pay the other party an overage fee which shall be an amount equal to the cost per gallon of treated wastewater from the previous fiscal year times the number of gallons of the overage times two. The cost per gallon is calculated by dividing the total operating costs by the number of gallons of wastewater treated per fiscal year. This remedy is in addition to any other remedies available at law or in equity for a breach of this Agreement.

(b) Once the Town utilizes at least percent (80%) of the Town's capacity, which is an average daily flow of 64,000 gpd, the Town shall notify the County. Because the Town is the permit holder, the Town shall also notify the County if the Town

becomes aware that the County has utilized at least eight percent (80%) of the County's capacity.

(c) Once the County utilizes at least eighty percent (80%) of the County's capacity, which is an average daily flow of 24,000 gpd, the County shall notify the Town.

(d) The Town's NPDES permit is attached hereto and incorporated herein by reference. The Town shall supply the County with an amendment, addenda, and/or renewals of the permit, and such documentation shall supplement or amend the attached permit as appropriate.

(e) The Town is under no obligation to increase the County's capacity. In the event that the WWTP's capacity is increased, or the WWTP's permit is amended to provide for additional capacity for either party (or both parties), each such party benefitted shall incur such capital costs, including all engineering, permitting, and construction costs. To the extent that capacity is increased for either party, WWTP operating cost allocations shall be adjusted for future periods based on the new capacity allocations. If any additional capacity increase requires additional capital costs, such costs shall be shared in the proportion that each party's cumulative additional capacity increases above the original capacity granted herein bears to the total of all additional capacity increases granted above the original capacities granted herein.

Section 3. County Payment. The County agrees to compensate the Town for a percentage of the operating expenditures for receiving and treating sewerage generated in the County Service Areas at the Town's WWTP, based upon the following:

(a) The County will pre-pay the Town \$20,000 for each quarter of service beginning when the Plant becomes operational. This is to cover the expected total operating quarterly expenditures the Town will incur. After completion of the Town's Audited Financial Statement for each year, the County's annual payment will be adjusted to reflect thirty percent (30%) of the total actual operating expenditures for the year as set forth in item (b) below. If there is a surplus, the County's account will be credited. If there is a deficit, the County will be invoiced for the balance. Payment will be due within 30 days.

(b) The County will pay to the Town an amount which shall be thirty percent (30%) of the annual operating WWTP costs as defined in Exhibit No. 1, which is attached to this Agreement and incorporated herein by reference.

(c) The County will make payments under this Agreement to the Town quarterly and without demand, on the first day of the month in the months of August,



November, February and May. The parties agree that the Town may assess an interest charge of one and one-half percent (1.5%) per month or eighteen percent (18%) per annum against the County for any payment that is more than 30 days late.

(d) The parties agree that the County Payments are to be made to the Town regardless of whether or not the County has actually collected any monies from the users/units connected throughout the County Service Areas.

(e) The County shall have the right to set and define the rate structure for users in the County Service Areas.

(f) County shall pay to the Town an administrative overhead fee of ten percent on each billing, including but not limited to billings for pre-payments, from the Town for WWTP operating costs.

#### Section 4. Maintenance, Ownership, and Operation.

(a) In consideration of the County Payment and Administrative Premium provided for under this Agreement, the Town agrees to accept and treat the wastewater from the County Service Areas.

(b) The County will administer all billing to the residents and users within the County Service Areas, including the collection of commercial fees and special assessments, if any.

(c) The County shall own, maintain, and operate the sewerage collection system in the County Service Areas. The County's ownership and maintenance responsibility shall terminate at the point where the County collection system discharges into the existing town collection system as depicted in the as-built construction drawings for the County collection system. The County shall be responsible for obtaining all necessary easements and rights of way for the installation of the County facilities in the County Service Areas. It is understood that in accordance with the Plan, the County will utilize a denied-access force main to provide service to the County Service Areas; provided, however, that exceptions to such denied access policy, where approved by the appropriate federal and State agencies, and in accordance with the county's Master Water and Sewerage Plan, shall be allowed, subject to the provisions governing the County's capacity allocation.

(d) The Town shall own, maintain, and operate the WWTP and all lines and facilities other than those described in subsection (c) above.

(e) In the event that a repair or upgrade is required for any WWTP facilities, or main distribution line servicing the County, or part thereof, and such facilities treat or transport wastewater from the County Service Areas, the Town shall promptly have such

repairs and upgrades made, the cost of which shall be shared by the parties as follows: 30% County and 70% Town. The costs of repairs to Town facilities that do not transport or treat wastewater from the County Service Areas are the sole responsibility of the Town. If a repair, replacement, or improvement is necessary due to the negligent act of either party, that party shall bear the full cost of such repair, replacement, or improvement.

(f) The County, at the County's expense, shall install a magnetic flow meter with a system that tracks the flow meter that will be at the pump station located in the County's Georgetown Service Area, which shall be accessible to the Town for reading purposes. The meter shall be properly functioning and working at all times. The County shall be responsible for maintenance, upkeep, and repair of the meter. Alternatively, at the Town's request, the County shall provide periodic meter readings (not more frequently than monthly). In the event that the County's service area is expanded, all such additional service locations shall be metered as set forth above.

(g) A meter shall be installed at the WWTP to monitor water usage at the facility. The installation of such meter shall be considered a construction cost of the WWTP pursuant to the Agreement between the Town and the County dated January 15, 2013. The water usage shall be considered an operating expense.

(h) The parties recognize that the Town's NPDES Permit for the WWTP requires that quarterly documentation from the Kent County Health Department be submitted to the Maryland Department of the Environment ("MDE") Compliance Program certifying that the Onsite Septic Disposal System units were connected to the Galena WWTP in accordance with Section II G. of the Permit. The County shall cooperate with the Town in obtaining and supplying such documentation. In the event that the Town incurs any costs or fines in regard to a violation of the Permit, the County shall reimburse the Town for all such fines and costs incurred if such costs were a result of the County's breach of this provision.

#### Section 5. Inspection of Records and Books.

(a) The County shall provide the Town with a list of all properties connected to the sewerage system in the County Service Areas at the time the system is ready for use. For all additional properties to be connected to the system, the County shall advise the Town in writing of any additional connections to the system at the time of connection.

(b) The County shall supply the Town with a copy of each application for connection to and/or service in the County Service Areas at such time the application is approved by the County. In the event that the County fails to supply an application within 30 days of approval, the County shall reimburse the Town for any costs or fines incurred

by the Town as the result of any overages and/or violations of the Town's permits for the WWTP.

(c) The parties agree that the Town shall have the right, at any time during business hours, upon reasonable notice, to inspect pertinent records of the County, and the County shall have the right, at any time during business hours, upon reasonable notice, to inspect the pertinent records of the Town.

#### Section 6. Wastes Discharged Into System.

(a) The County shall discharge only residential and commercial wastes of the same strength as that in normal domestic sewers into the Town's system.

(b) The parties agree that should industrial users or other users generating high-strength waste be connected to the public sewer systems which are the subject of this Agreement, appropriate action will be taken to adopt necessary ordinances and/or regulations to provide for a high-strength waste surcharge and industrial pre-treatment program in accordance with any applicable State and federal laws.

#### Section 7. Violations of Governmental Regulations or Permits

In the event the Town receives a fine imposed by a governmental permitting or regulatory agency or authority, by way of example, MDE, the County shall indemnify the Town for any portion of the fine that is attributable to the County's usage. If the portion of the fine attributable to the County's usage cannot be determined, then the County's portion of the fine shall be 30%, provided, however, to the extent that any such fine is the result of the negligence act or omission of the Town or its personnel, the Town shall bear such cost.

#### Section 8. Term.

(a) The term of this Agreement shall be for twenty-five (25) years, commencing on November 3, 2015 and ending on November 2, 2040 (the "Term"), unless otherwise sooner terminated. This Agreement may be terminated at any time by mutual agreement of the parties, subject to and in accordance with State law. While any extension is being discussed or negotiated, the Agreement shall continue in force.

(b) The parties may agree to extend the Term of this Agreement, subject to terms and conditions acceptable to both parties. Any renewal shall be in writing and shall be signed by the Town and by the County.

(c) The parties agree to jointly and periodically review and re-evaluate this Agreement at least every five (5) years throughout the Term, and additionally as needed.

This provision does not require any party to agree to any change of any provision, or to add or delete any provision.

Section 9. Miscellaneous.

(a) Amendment. This Agreement may be amended at any time by the mutual agreement of the parties. Any amendments to this Agreement must be in writing.

(b) Severability. Should any portion of this Agreement be determined to be inconsistent with federal, state or local law, the remaining provisions will continue to apply and remain in force.

(c) Indemnification. The County shall save and hold harmless from any liability and/or extraordinary expenses incurred by the Town as a result of County's operation of its facilities and for any non-permitted material introduced into the system from the County Service Areas, and the Town shall save and hold the County harmless from any liability and/or extraordinary expenses incurred by the Town as a result of Town's operation of its facilities and for non-permitted material introduced into the system by any Town user within the Town limits.

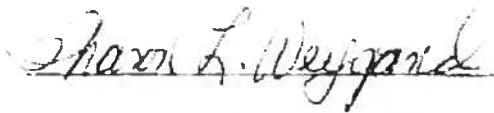
(d) Entire Agreement. This Agreement constitutes the entire agreement between Town and County, and it shall not be amended, altered, or changed except by written agreement signed by the parties.

(e) Governing Law. This Agreement shall be governed, construed and interpreted by, through and under the Law of the State of Maryland.

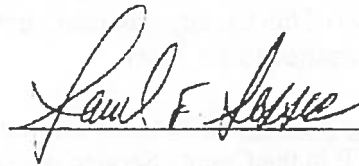
IN WITNESS WHEREOF, the Town of Galena has caused these presents to be executed in its name by its Mayor, duly attested by the Town Administrator, and its corporate seal to be hereunto affixed, and County Commissioners of Kent County has caused these presents to be executed in its name by the President of the Board of County Commissioners, and its seal to be hereunto affixed, duly attested by the County Clerk, on this 3<sup>rd</sup> day of November 2015.

WITNESS/ATTEST:

TOWN OF GALENA

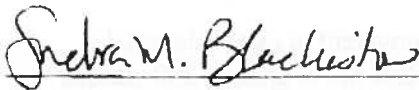


Sharon L. Weygand, Town Administrator

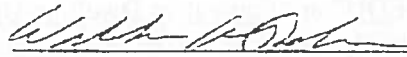


Samuel F. Sessa II, Mayor

COUNTY COMMISSIONERS OF  
KENT COUNTY



Sondra Blackiston, Clerk



William W. Pickrum, President



Exhibit No. 1

**County Payment Formula**

Defined Terms:

“Administrative Premium” means that amount charged to the County for Town direct overhead expenses that are not accounted for in the WWTP Costs. The Administrative Premium shall be (i) in addition to the County Payment, (ii) equal to ten percent (10%) of the County Payment, and (iii) payable at the same time any County Payment is remitted to the Town.

“County EDUs” means the total number of Equivalent Dwelling Units serviced by the WWTP in the County Service Areas.

“County Payment” means the annual amount owed by the County to the Town for covering the operating expenditures for receiving and treating sewage generated in the County Service Areas at the Town’s WWTP. The County Payment shall be paid to the Town in quarterly installments.

“EDU” or “Equivalent Dwelling Unit” means the equivalent to one residential usage actually connected to the sewer system, which has a flow not to exceed 250 gallons per day (“gpd”). Flow in excess of 250 gpd shall require an additional EDU for each additional 250 gpd or fraction thereof.

“Town EDUs” means the total number of Equivalent Dwelling Units serviced by the WWTP within the boundaries of the Town during a fiscal year.

“WWTP Costs” means the total operating expenses incurred by the Town for the operation and maintenance of the WWTP during a fiscal year, according to audited financial statements. The costs of the annual audit and for the maintenance of the property upon which the WWTP facilities are located shall be included among the operating expenses herein.

The Formula:

For a given fiscal year:

- a. The audited WWTP Costs multiplied by Thirty Percent (30%) equals the County Payment;
- b. The County Payment multiplied by .10 (10%) equals the Administrative Premium;

**WASTEWATER TREATMENT AGREEMENT**  
between  
**TOWN OF ROCK HALL**  
and  
**COUNTY COMMISSIONERS OF KENT COUNTY**

THIS WASTEWATER TREATMENT AGREEMENT (the "Agreement") is made by and between the TOWN OF ROCK HALL (the "Town"), an incorporated municipality lawfully created in Kent County, Maryland, and the BOARD OF COUNTY COMMISSIONERS FOR KENT COUNTY (the "County"), a political subdivision and a body politic of the State of Maryland, and shall be effective for the fiscal year commencing on July 1, 2003.

**RECITALS**

WHEREAS, the Town and the County each currently own and operate sewage treatment and disposal facilities for the benefit of the citizens who live within their respective jurisdictional borders; and

WHEREAS, in 1992 the Town and the Kent County Sanitary District, Inc. (the "Commission") entered into an agreement providing for the expansion of the Town's waste water treatment plant (the "WWTP") for the benefit of the residents in the Spring Cove/Green Lane Service Area of the Commission, which agreement was subsequently amended by the Town and Commission in the years 1993, 1995, 1998, and 2000; and

WHEREAS, in 1993 the Town and the Commission entered into an agreement providing for the expansion of the Town's WWTP for the benefit of the residents in the Piney Neck/Skinners Neck/Wesley Chapel Service Area of the Commission, which agreement was subsequently amended by the Town and Commission in 1997; and

WHEREAS, the County, pursuant to the provisions of Maryland Code Article 25B, Section 13E and the Code of Public Local Laws of Kent County, Chapter 161 in 2000, abolished the Commission and the County assumed all responsibility for management of water and sewer services in the unincorporated areas of Kent County; and

WHEREAS, on March 3, 2003, the Town's Mayor and Council authorized the County to divert sewage flow from the County's Edesville Service Area for treatment at the Town's WWTP, subject to a written agreement with terms and conditions acceptable to both parties; and

WHEREAS, by letter dated May 20, 2003, the Kent County Health Department reported to the County the results of a sanitary survey involving the area of Allen's Lane and Gray's Inn, and advised the County that (i) of the 33 residences in the study area, 32 have septic systems that are either non-existent or failing by direct surface discharge; (ii) the soil conditions and high water table in the area preclude the installation of individual on-site sewage disposal systems, and (iii) in the interest of public health, the extension of public sewer service to the area is imperative.

WHEREAS, the Town and County deem it in their respective best interests to revise, update and consolidate all of the existing wastewater treatment agreements and to enter into this new Agreement defining and clarifying the sharing of costs between the Town and County for wastewater treatment for the County's Piney Neck, Skinners Neck, Wesley Chapel, Spring Cove, Green Lane, Edesville, and Allen's Lane Service Areas (collectively, the "County Service Areas").

**NOW, THEREFORE, THIS AGREEMENT WITNESSETH**, that for and in consideration of the mutual covenants and agreements herein contained, the parties hereto covenant and agree as follows:

Section 1. Construction of Sewerage System. Prior to the date of this Agreement, the County, at its own cost and expense, and with the consent of the Town, designed, constructed and maintained such sewerage system improvements as the County deemed advisable to provide the treatment capacity required for the Town's treatment of sewage from the County Service Areas, and such construction by the County resulted in the maximum allocation provided for in Section 3.

Section 2. County Payment. The County agrees to compensate the Town for receiving and treating sewage generated in the County Services Areas at the Town's WWTP, based upon the following:

(a) The County will pay to the Town an amount based on a cost per equivalent dwelling unit formula; which "County Payment Formula" is specified in Exhibit No. 1 attached to this Agreement and incorporated herein by reference.

(b) The County will make the payments required under this Agreement to the Town quarterly, and without demand, on the first day in the months of May, August, November, and February. The parties agree that the Town will not assess any interest charges for late payment against the County.

(c) The parties agree that the County Payments are to be made to the Town regardless of whether or not the County has actually collected any monies from the users/units connected throughout the County Services Areas.

(d) The County shall have the right to set and define the rate structure for users in the County Service Areas.

(e) It is understood that the WWTP Costs will be evaluated at least annually, and that any increase or decrease in the WWTP Cost per EDU will be based upon an actual increase or decrease in the Town's expenses related to the WWTP and/or upon an increase or decrease in the total number of EDUs connected to the Town's WWTP system.

Section 3. Growth Capacity. The Town shall provide the County with a maximum allocation of 153,200 gallons per day ("gpd") average daily flow at the WWTP for use in the County Service Areas. The County may request additional flow allocations beyond the maximum 153,200 gpd, and the Town may provide additional allocations to the County as follows:



(a) should any property within the County Service Areas be annexed into the Town, the Town may provide the County with an additional number of allocations equal to those EDUs annexed into the Town;

(b) additional allocation may be provided by the Town to the County subject to terms and conditions negotiated by the parties and in writing as an amendment to this Agreement or a separate agreement;

(c) in evaluating any proposed increase in the maximum County allocation, consideration will be given by the Town to overall WWTP capacity, applicable land use policies and regulations, pending development projects, operating and capital costs, and the overall best interests of the Town;

(d) in no event shall the Town be obligated to increase the maximum allocation available to the County under this Agreement.

#### Section 4. Maintenance, Ownership and Operation.

(a) In consideration of the County Payment and Administrative Premium provided for under this Agreement, the Town agrees to accept and treat the sanitary sewage (wastewater) from the County Services Areas.

(b) The County will administer all billing to the residents and users within the County Service Areas, including the collection of commercial fees and special assessments, if any.

(c) The County shall own, maintain and operate the sewage collection systems in the County Service Areas. In the case of the Piney Neck/Skinners Neck/Wesley Chapel Service Areas, the County's ownership and maintenance responsibility shall terminate at the point where the force main exits the flow meter vault at the Town's WWTP. In the case of the Spring Cove/Green Lane Service Areas, the County's ownership and maintenance responsibility shall terminate at the point where the County's force main enters the Town's manhole. The Town shall retain full ownership and maintenance responsibility of the WWTP and all remaining lines within the corporate limits of the Town.

Section 5. Inspection of Records and Books. The parties agree that the Town shall have the right, at any time during business hours, upon reasonable notice, to inspect the pertinent records of the County, and the County shall have the right, at any time during business hours, upon reasonable notice, to inspect the pertinent records of the Town.

#### Section 6. Wastes Discharged Into System.

(a) The County shall discharge only residential wastes of the same strength as that in normal domestic sewers into the Town's system.

(b) The parties agree that should industrial users or other users generating high-strength waste be connected to the public sewer system, appropriate action will be taken to adopt necessary ordinances and/or regulations to provide for a high-strength waste surcharge and industrial pretreatment program in accordance with State and federal law.

Section 7. Term.

(a) The term of this Agreement shall be for twenty (20) years, commencing on July 1, 2003 and ending on June 30, 2023 (the "Term"), unless otherwise sooner terminated. This Agreement may be terminated by mutual agreement of the parties.

(b) The parties may agree to extend the Term of this Agreement, subject to terms and conditions acceptable to both parties. Any renewal shall be in writing and signed by the Town and the County.

(c) The parties agree to jointly and periodically review and reevaluate this Agreement at least every five (5) years throughout the Term, and additionally as needed.

Section 8. Miscellaneous.

(a) Amendment. This Agreement may be amended at any time by the mutual agreement of the parties. Any amendments to this Agreement must be in writing.

(b) Severability. Should any portion of this Agreement be determined to be inconsistent with federal, state or local law, the remaining provisions will continue to apply and remain in force.


(c) Indemnification. The County shall save and hold harmless from any liability and/or extraordinary expenses incurred by the Town as a result of material introduced into the system from the County Service Areas; and the Town shall save and hold the County harmless from any liability and/or extraordinary expenses incurred by the Town as a result of material introduced into the system by any Town user within the Town limits.

(d) Entire Agreement. This Agreement constitutes the entire agreement between Town and County, and it shall not be amended, altered, or changed except by written agreement signed by the parties.

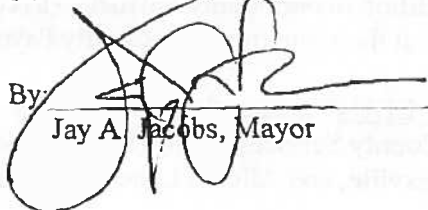
(e) Governing Law. This Agreement shall be governed, construed and interpreted by, through and under the Laws of the State of Maryland.

IN WITNESS WHEREOF, the Town of Rock Hall has caused these presents to be executed in its name by its Mayor, duly attested by the Town Manager, and its corporate seal to be hereunto affixed, and County Commissioners of Kent County has caused these presents to be executed in its name by the President of the Board of County Commissioners, and its seal to be hereunto affixed, duly attested by the County Clerk, on this \_\_\_\_\_ day of \_\_\_\_\_, 2003.

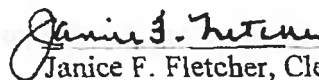
WITNESS/ATTEST:

  
Ronald H. Fithian, Town Manager

TOWN OF ROCK HALL

By:  (SEAL)  
Jay A. Jacobs, Mayor

COUNTY COMMISSIONERS  
OF KENT COUNTY

  
Janice F. Fletcher, Clerk


By:  (SEAL)  
William W. Pickrum, President

Exhibit No. 1

**County Payment Formula**

Defined Terms:

“Administrative Premium” means that amount charged to the County for Town overhead, expenses and liabilities that are not accounted for in the WWTP Costs. The Administrative Premium shall be (i) in addition to the County Payment, (ii) equal to ten percent (10%) of the County Payment, and (iii) payable at the same time any County Payment is remitted to the Town.

“County EDUs” means the total number of Equivalent Dwelling Units serviced by the WWTP in the County Services Areas (Piney Neck, Skinners Neck, Wesley Chapel, Spring Cove, Green Lane, Edesville, and Allen’s Lane/Gray’s Inn) during a fiscal year.

“County Payment” means the annual amount owed by the County to the Town for receiving and treating sewage generated in the County Services Areas at the Town’s WWTP. The County Payment shall be paid to the Town in quarterly installments.

“EDU” or “Equivalent Dwelling Unit” means the equivalent to one residential usage actually connected to the sewer system.

“Town EDUs” means the total number of Equivalent Dwelling Units serviced by the WWTP within the boundaries of the Town during a fiscal year.

“WWTP Costs” means the total expenses incurred by the Town for the operation and maintenance of the WWTP during a fiscal year, according to audited financial statements.

The Formula:

For a given fiscal year:

- a. (Town EDUs) plus (County EDUs) equals (Total EDUs);
- b. (WWTP Costs) divided by (Total EDUs) equals (Cost Per EDU);
- c. (Cost Per EDU) multiplied by (County EDUs) equals (County Payment);
- d. (County Payment) multiplied by .10 (10%) equals (Administrative Premium);
- e. ((County Payment) plus (Administrative Premium)) divided by 4 equals the amount to be remitted by the County to the Town on a quarterly basis.

Example of County Payment Formula (for illustrative purposes only):

For Fiscal Year 2003 (July 1, 2003 to June 30, 2003)

- a.  $953 + 615 (366 \text{ WC/PN/SN} + 86 \text{ SC/GL} + 97 \text{ E'ville} + 66 \text{ AL}) = 1,568$
- b.  $\$205,882 \div 1,568 = \$131.30$
- c.  $\$131.30 \times 615 = \$80,749.50$
- d.  $\$80,749.50 \times .10 = \$8,074.95$
- e.  $(\$80,749.50 + \$8,074.95 = \$88,824.45) \div 4 = \$22,206.11$  quarterly payment

**WATER AGREEMENT**  
**between**  
**TOWN OF ROCK HALL**  
**and**  
**COUNTY COMMISSIONERS OF KENT COUNTY**

THIS WATER AGREEMENT (the "Agreement") is made and between the TOWN OF ROCK HALL (the "Town"), an incorporated municipality lawfully created in Kent County, Maryland, and the BOARD OF COUNTY COMMISSIONERS OF KENT COUNTY (the "County"), a political subdivision and a body politic of the State of Maryland, and shall be effective March 1, 2006.

**RECITALS**

WHEREAS, the Town and the County each currently own and operate public water and wastewater treatment facilities for the benefit of the citizens who live within their respective jurisdictional borders; and

WHEREAS, in 2004 the County contracted with McCrone, Inc. to study the water distribution system in the Town to determine (i) how the water system would be affected by the new transmission main under construction between the Town and the community known as Edesville, and (ii) the feasibility of supplying Town water service to the properties in Edesville (the "Rock Hall Water Study" or "Study"). The 2005 Study evaluated the well supply, elevated storage and available fire flow; and

WHEREAS, in January, 2005, the County and the Town adopted "Scenario C" as recommended in the Rock Hall Water Study, which recommendation involves the rehabilitation of Town well #5 construction of new 100,000 gallon elevated water storage tank in the Edesville area; and

WHEREAS, the Town has commenced with the rehabilitation of well #5 as proposed in Scenario C; and

WHEREAS, the Rock Hall Water Study is incorporated herein by reference and deemed a substantive part of this Agreement; and

WHEREAS, Scenario C of the Study proposes to combine the water distribution systems of the Town and Edesville, allowing water service to be distributed to the properties along Maryland Route 20 between the Town and Edesville.

NOW, THEREFORE, THIS AGREEMENT WITNESSETH, that for and in consideration of the mutual covenants and agreements herein contained, the parties hereto covenant and agree as follows:

Section 1. Capital Costs

(a) Water Tower. The County agrees to pay for all costs associated with the design, engineering, permitting, construction, and inspection of the new water tower and related improvements provided for in Scenario C of the Study.

(b) Well Rehabilitation. The Town agrees to pay for all costs associated with the evaluation, engineering, construction, and inspection of the well rehabilitation and related improvements provided for in Scenario C of the Study.

Section 2. Operational and Maintenance Costs. The County agrees to pay for all operational and maintenance costs associated with the new water tower, distribution lines and meters that serve County users. The Town agrees to pay for all operational and maintenance costs associated with the rehabilitated well.

Section 3. Water Usage Fees.

(a) It is understood and agreed by and between the parties hereto that the County will pay the Town each quarter based on the total gallons used by and for all in County users located beyond the property located at 6190 Rock Hall Road (MD Route 20) and the property located at 5859 Crosby Road (those points where the water distribution lines owned by the Town and/or recently upgraded by the Town end), to be determined by actual meter readings taken each quarter by the County.

(b) For the usage of water under this Agreement, the County shall pay on a quarterly basis one and one-half (1.5) times the in-Town water usage rate/charges in effect at the time of the usage.

(c) In the event of a discrepancy or dispute between the County and Town resulting from meter readings, water usage data and/or charges, an independent third party consultant/professional (i.e., accountant, engineer) shall be engaged to review and assist the parties in resolving the matter. The County and Town must concur on the third party selection and agree to share the costs of the consultant.

(d) It is understood that the user fees and charges realized by the Town under this Agreement will be used by the Town, in whole or in part, to satisfy any debt service obligations of Town in connection with the portion of the water system infrastructure that serves properties beyond the Town limits. To this end, and the provisions in subsection (b) of this section notwithstanding, the user fees and charges realized by the Town under this Agreement must be sufficient for the Town to timely satisfy any capital costs and/or debt service associated with the portion of the water system infrastructure that serves properties beyond the Town limits.

Section 4. Additional Water Reserve. It is understood and agreed that the additional water reserve capacity generated by the new water tower under Scenario C belongs to the County and that the Town is credited for additional system capacity resulting from the rehabilitation of Well #5. In the event that the Town needs additional water capacity, the Town will be required to construct their own facilities or, should the Town desire to use any of the aforementioned water reserve capacity, a new Agreement would be required between the County and the Town.

Section 5. Future Development and New Users.

(a) Subject to review and approval by the Town, and subject to the availability of sufficient capacity as projected in Scenario C, the County may add new County users to the water system. The County and the Town will rely upon the 2005 Water Study when considering the feasibility of and capacity for new in County users being added to the water system. However, in no event shall infill lots within the Town limits be denied water allocation because of the addition of or reservation for new in County users. The Town and the County shall confer regularly and no less than quarterly, to discuss system capacity, service requests and growth projections.

(b) In the event of a shortage of water being supplied under this Agreement, County and Town users shall proportionately share in such shortage and in any rationing that may be required.

Section 6. Term.

(a) The term of this Agreement shall be for forty (40) years, commencing on March 1, 2006 and ending on February 28, 2046 (the "Term"), unless otherwise sooner terminated. This Agreement may be terminated for convenience and by mutual agreement of the parties.

(b) The parties may agree to extend the Term of this Agreement, subject to terms and conditions acceptable to both parties. Any renewal shall be in writing and signed by the Town and the County.

(c) The parties agree to jointly and periodically review and reevaluate this Agreement at least every five (5) years throughout the Term, and additionally as needed.

Section 7. General Provisions.

(a) This Agreement is subject to all such rules, regulations or laws as may be applicable to similar intergovernmental agreements in the State of Maryland, the County and Town agree to collaborate and cooperate in obtaining such permits, certificates or other approvals which may be required to comply therewith.



(b) The construction of the Water Tower by the County is to be financed by a loan and/or grant from the U.S.D.A. Rural Development ("RD") and the provisions herein pertaining to the undertakings of the County are conditioned upon the written approval of RD.

(c) In the event of an occurrence rendering the County incapable of performing under this Agreement, any successor of the County, whether the result of legal process, assignment approved by the Town, or otherwise, shall assume the rights and responsibilities of the County hereunder. In the event of municipal annexation that includes properties being served water by virtue of this Agreement, the County and Town shall determine whether any amendments to this Agreement are necessitated and, if so, each agrees to cooperate in modifying this Agreement accordingly. Any amendment to this Agreement shall be in writing.

IN WITNESS WHEREOF, the Town of Rock Hall has caused these presents to be executed in its name by its Mayor, duly attested by the Town Manager, and its corporate seal to be hereunto affixed, and County Commissioners of Kent County has caused these presents to be executed in its name by the President of the Board of County Commissioners, and its seal to be hereunto affixed, duly attested by the County Clerk, on this 24th day of October, 2006.

WITNESS/ATTEST:

  
Ronald H. Fithian, Town Manager

TOWN OF ROCK HALL

By:  (SEAL)  
Jay A. Jacobs, Mayor

COUNTY COMMISSIONERS OF  
KENT COUNTY, MARYLAND

  
Janice F. Fletcher, Clerk

By:  (SEAL)  
William W. Pickrum, President

12/14/89 RETURNED TO HOON & BARROLL, ESQS.

NOV 22 AM 10 17

LIMITED SHARED \* BEFORE THE KENT COUNTY  
FACILITY AGREEMENT \* SANITARY COMMISSION  
LITTLE NECK FARM SUBDIVISION \*

THIS LIMITED SHARED FACILITY AGREEMENT (this "Agreement") is made as of September 1, 1989, by and between SWAN CREEK LIMITED PARTNERSHIP, a Maryland limited partnership, ("Owner") and the KENT COUNTY SANITARY DISTRICT, INC., a Maryland body corporate, by its governing body, the KENT COUNTY SANITARY COMMISSION (the "Commission").

REC'D FEE 87.00

BACKGROUND

Owner has filed a petition pursuant to Article 10, §5-87 et seq. of the Public Local Laws of Kent County, Maryland (the "Kent County Shared Facilities Law") with the Commission requesting that a specified locality within Kent County, Maryland, be constituted and developed as a "limited shared facility", as that phrase is defined in the Kent County Shared Facilities Law. The requested limited shared facility is intended to service a portion of the development known as the "Little Neck Farm" subdivision in the Fifth Election District of Kent County, Maryland as more fully described herein.

The Commission has found that the creation of the requested limited shared facility is necessary and expedient for the public health, safety and welfare of the residents which would be affected by and benefit from it. The Commission has also found that the establishment of the requested limited shared facility is feasible and proper in accordance with the Kent County Shared Facilities Law.

The Commission has passed a Resolution (the "Resolution") defining the boundaries of Owner's requested limited shared facility, which boundaries are described on Exhibit B attached hereto and incorporated herein, and has thus created and authorized the development of Owner's requested limited shared facility. The aforesaid Resolution has been recorded or is intended to be recorded among the Land Records of Kent County, Maryland.

It is the purpose of this Agreement to define the terms, provisions, obligations, conditions and covenants concerning Owner's requested shared facility, including the use, operation, maintenance and repair of it.

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Attorneys At Law  
Christiansburg, Maryland 21620

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of Limited Shared Facility and  
Easement Area . . . . . 16

WITNESSETH

In consideration of the sum of One Dollar (\$1.00) and the mutual covenants and promises contained herein, and other good and valuable consideration, the receipt of which is hereby acknowledged, it is hereby mutually agreed as follows:

§1 CREATION OF THE LIMITED SHARED FACILITY. Pursuant to the Kent County Shared Facilities Law and the Resolution, a limited shared facility on Owner's property known as the "Little Neck Farm" subdivision (the "Subdivision") is hereby created, established and ordained as hereinafter set forth. The Subdivision is more particularly described in Exhibit A attached hereto and incorporated herein by reference. The limited shared facility to be constructed by Owner pursuant hereto is hereinafter sometimes referred to as the "Little Neck Limited Shared Facility" and/or the "Limited Shared Facility". The seventeen (17) properties and facilities to be served by the Limited Shared Facility (the "Limited Shared Facility Lots") are identified on the "Plans and Specifications" (as defined below in §4) as "Lots 15, 16, 17-30" and the "Community Area".

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Attorneys At Law  
Charleston Maryland 21020

§2 BOUNDARIES OF THE LIMITED SHARED FACILITY. The boundaries of the Limited Shared Facility area together with and in which the drainfields, distribution boxes and other equipment and facilities (except for the sewage connector lines and individual user facilities) are to be located (the "Limited Shared Facility Area") is described by metes and bounds on Exhibit B attached hereto and incorporated herein by reference. The other components of the Limited Shared Facility are also shown on the "Plans and Specifications" (as defined below in §4). Owner shall transfer legal title to the Limited Shared Facility Area to the Commission by deed to be recorded among the Land Records of Kent County, Maryland, at Owner's expense upon completion of construction of the Limited Shared Facility as evidenced by the "Certificate of Completion".

§3 COMMON EASEMENT AREA Owner hereby grants and conveys unto the Commission and the Kent County Health Department (the "Health Department") their agents, servants, employees, consultants, and their successors and assigns, an absolute, unconditional and perpetual right-of-way easement (the Maintenance and Repair Easement) over the "Common Easement Area" (as defined below) for the express purposes of inspecting, repairing, maintaining and operating the Limited Shared Facility, or for such other reasonable purposes which may result from time to time for the operation, repair and maintenance of the Limited Shared Facility. The "Common Easement Area" is that twenty foot (20') wide easement area of land as defined on Exhibit B attached hereto and incorporated herein by reference (the "Common Easement Area") and is also shown on the "Plans and Specifications" (as defined below in §4).

§4 COVENANT TO CONSTRUCT. Owner hereby covenants and agrees at Owner's sole expense to construct and have fully operational the Limited Shared Facility in accordance with the plans and specifications shown on plats (3 pages) entitled "Septic Tank Efficient Pumping System ("STEP") Community Septic Disposal Plan for Little Neck Farm" dated August, 1988 (revised November, 1988; March 21, April, 1989; and May, 1989), prepared by Rauch, Walls and Lane, Inc., Engineers - Design Planners - Surveyors, Job 631778 (the "Plans and Specifications") and this

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Charlottesville, Maryland 21620

Agreement. The Plans and Specifications are recorded among the Land Records of Kent County in Plat Book EHP 3, Page 21. Owner shall not commence construction until it has posted the "Construction Completion Letter of Credit/Bond" (as defined below in §5) with the Commission.

§5 OWNER'S LETTERS OF CREDIT/BONUS. As required by the Kent County Shared Facilities Law and the rules and regulations promulgated thereto which are in effect as of the date hereof (the "Rules and Regulations"), Owner shall post with the Commission two (2) letters of credit or bonds to assure the completion of the construction of the Limited Shared Facility.

A. The first letter of credit or bond shall be posted by Owner with the Commission at least thirty (30) days prior to commencement of construction of the Limited Shared Facility and shall be in the amount of one hundred twenty percent (120%) of the cost of construction of the Limited Shared Facility (the "Construction Completion Letter of Credit/Bond"). The Construction Completion Letter of Credit/Bond shall be posted to assure completion of the construction of the Limited Shared Facility pursuant to the Plans and Specifications as required by §2.g of the Rules and Regulations. One-half (1/2) of the Construction Completion Letter of Credit/Bond shall be released and returned to Owner upon the date of the "Certificate of Completion" (as defined below in §7) and the other one-half (1/2) shall be released and returned to Owner within one (1) year thereafter. The Commission shall have the right to draw upon the Construction Completion Letter of Credit/Bond for a period of one (1) year following the date of the "Certificate of Completion" for the sole purpose of paying for any construction defect repairs to the construction of the Limited Shared Facility. For purposes of this Agreement, the phrase "construction defect repairs" shall mean repairs which are necessitated by faulty or improper construction but shall not include ordinary and necessary maintenance and repairs.

B. The second letter of credit or bond shall be posted by Owner with the Commission prior to the completion of the construction of the Limited Shared Facility and shall be in the amount of one hundred percent (100%) of the "effluent receiving area" as defined in §9.g of the Rules and Regulations (the

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"Effluent Receiving Area Letter of Credit/Bond"). The Effluent Receiving Area Letter of Credit/Bond is posted pursuant to §9.g of the Rules and Regulations for the payment for construction defect repairs to the "effluent receiving area" as defined therein. The Effluent Receiving Area Letter of Credit/Bond shall be released and returned to Owner on the date which is five (5) years after the date of the "Certificate of Completion" as defined below in §7. The Commission shall have the right to draw upon the Effluent Receiving Area Letter of Credit/Bond for a period of five (5) years following the date of the "Certificate of Completion" for the sole purpose of repairing any construction defects in the construction of the "effluent receiving area". At the end of said five (5) years, the Commission shall release and return the Effluent Receiving Area Letter of Credit/Bond to Owner.

The Commission shall authorize the release of any portion of the Construction Completion Letter of Credit/Bond and/or the Effluent Receiving Area Letter of Credit/Bond in a proportionate amount of and upon receipt of substitute bonds, escrow accounts and/or letters of credit from third party purchasers or owners of the Limited Shared Facility Lots. The Commission shall not have any right to draw upon the Construction Completion Letter of Credit/Bond and/or the Effluent Receiving Area Letter of Credit/Bond without giving written notice to Owner of its intent to do so; the required notice to Owner shall give Owner a period of at least sixty (60) days to voluntarily make the necessary construction defect repairs. The Commission shall have the right to utilize and resort to the Construction Completion Letter of Credit/Bond only to pay for construction defect repairs to the Limited Shared Facility. The Commission shall likewise have the right to utilize and resort to the Effluent Receiving Area Letter of Credit/Bond only to pay for construction defect repairs to the "effluent receiving area" as defined in §9.g of the Rules and Regulations. It is the intent of the parties that the Commission shall be responsible for all ordinary and necessary maintenance and repair of the Limited Shared Facility following the construction thereof except for construction defects for which the Construction Completion Letter of Credit/Bond and the Effluent Receiving Area Letter of Credit/Bond are posted.

**Hoon & Carroll**  
Attorneys At Law  
Chesapeake, Maryland 21620

§6 FAILURE TO CONSTRUCT. Owner shall complete the construction of the Limited Shared System within one (1) year following the commencement thereof (the "Completion Date"), subject to automatic extensions for acts of God or other causes which are beyond Owner's control. Unless the time for construction is extended as a result of acts of God or other causes beyond Owner's control or is voluntarily extended by the Commission, if Owner fails to construct the Limited Shared Facility in accordance with this §6, the right of Owner to maintain, use, erect and construct the Limited Shared Facility may be revoked by the Commission. If Owner fails to construct the Limited Shared Facility prior to the Completion Date as it may be extended pursuant to this §6, then the Commission may file and record a notice of revocation of its approval of the Limited Shared Facility among the Land Record Books of Kent County, Maryland indicating its revocation of the permits for the Limited Shared Facility. Upon such revocation, the Commission shall mail a copy of its notice of revocation to the following:

1. Kent County Health Department
2. Kent County Planning & Zoning Commission
3. Kent County Highway Department
4. The County Commissioners of Kent County, Maryland
5. Kent County Soil Conservation Office
6. Owner

§7 CERTIFICATE AFTER CONSTRUCTION. After the Limited Shared Facility has been constructed, Owner and the Commission shall file a certificate and deed among the Land Record Books of Kent County certifying that the Limited Shared Facility has been constructed in accordance of the Plans and Specifications, this Agreement and transferring ownership thereof to the Commission. In the event of any dispute between the Commission and Owner as to whether the construction of the Limited Shared Facility has been completed pursuant to the Plans and Specifications, the matter shall be referred to the Health Department and the decision of the Health Department shall control.

§8 CONVEYANCES OF LOTS. Owner agrees not to convey legal title to any of the Limited Shared Facility Lots until the Certificate of Completion has been recorded among the Land Records of Kent County, Maryland.

**Heon & Harrell**  
Attorneys at Law  
Charleston, Maryland 21610

187 285 01

§9 COVENANT TO OPERATE. Owner and its successors and assigns of the Limited Shared Facility Lots hereby absolutely, irrevocably and unconditionally covenant and agree to operate, maintain, repair and use the Limited Shared Facility in strict accordance with this Agreement, the Plans and Specifications, and all applicable federal, state and local laws and rules and regulations.

§10 MAINTENANCE AND REPAIR.

A) Except as specifically otherwise provided herein, all necessary maintenance and repair of the Limited Shared Facility shall be performed by the Commission after the construction thereof. The maintenance and repair obligations of the Commission shall be funded out of the "Annual Assessments", "Common Fund" and by "Commission Assessments" (as defined below in §11).

B) Owner shall be responsible for making any "construction defect repairs" (as defined above in §5) of any portion of the Limited Shared Facility which arise and of which the Commission gives notice to Owner within one (1) year following the date of the Certificate of Completion. Owner shall be responsible for the repair of any construction defects in the "effluent receiving area" (as defined in §9.g of the Rules and Regulations) which arise and of which the Commission gives notice to Owner within five (5) years following the date of the Certificate of Completion.

§11 ASSESSMENTS.

A. In order to assure that the Limited Shared Facility shall be operated, used, maintained and repaired as provided herein, a minimum annual assessment of One Hundred Thirty Dollars (\$130) per Limited Shared Facility Lot is hereby assessed and imposed (the "Annual Assessment"). The Annual Assessment shall be due and payable March 31st of each year commencing with the calendar year following that during which the Certificate of Completion is executed and recorded. The Commission shall have the right to assess and

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bill the Annual Assessment in equal quarterly payments of Thirty-Five Dollars (\$35) each.

B. The Annual Assessment may be increased by the Commission on a pro-rata basis among the Limited Shared Facility Lot owners if necessary for the payment of the costs of the maintenance and repair of the Limited Shared Facility required to be made by the Association pursuant hereto. The Annual Assessments shall be accumulated by the Commission as a common fund (the "Common Fund") for the maintenance, repair and replacement of the Limited Shared Facility System as may be necessary from time-to-time. In the event that the Commission desires to increase the Annual Assessment, it shall provide the Shared Facility Lot owners with at least ninety (90) days prior written notice thereof, which notice shall include specific explanation of the need and calculation of such increase as well as a full and complete financial statement of the collection of Annual Assessments and Common Fund expenditures for a period of at least five (5) years prior thereto or from the date of the Certificate of Completion, whichever is a shorter period.

C. The Common Fund shall be used by the Commission exclusively for ministerial, clerical, legal or accounting expenses incurred by the Commission in its administration of the Limited Shared Facility, and the ordinary and necessary maintenance and repair of the Limited Shared Facility (collectively the "Limited Shared Facility Expenses"). In no event shall the Common Fund be utilized for any expenses other than those attributable directly to the Little Neck Limited Shared Facility.

D. In the event that the Annual Assessments and Common Fund are insufficient to pay for the Limited Shared Facility Expenses, the Commission shall have the right to impose additional assessments on the Limited Shared Facility Lot owners (the "Commission Assessments") for the balance thereof. All Commission Assessments shall be levied and assessed pro-rata among the Limited Shared Facility Lot owners so that each such owner shall be assessed for and pay an equal

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one-seventeenth (1/17) share of the total of the Commission Assessments.

E. Owner and the Limited Shared Facility Lot owners hereby consent to the minimum Annual Assessment of One Hundred Thirty Dollars (\$130) per Limited Shared Facility Lot as it may be increased from time-to-time by the Commission and to the payment of Commission Assessments which are levied pursuant hereto. All Annual Assessments and Commission Assessments shall be due and payable by the Limited Shared Facility Owner within sixty (60) days after the date they are assessed and billed.

§12 SHARED FACILITY LOT OWNER EASEMENT, MAINTENANCE AND REPAIR. In order to use and benefit from the Limited Shared Facility, each Limited Shared Facility Lot owner shall have a perpetual right and easement to connect to and utilize the Limited Shared Facility at a point adjacent to such owner's property. Each Limited Shared Facility Lot owner shall be responsible for the installation, maintenance and repair of the equipment and fixtures which connect such owner's property and septic facilities to the Limited Shared Facility.

§13 COMMON EASEMENT AREAS. The Limited Shared Facility Area and the Common Easement Area shall be common easement areas for the Commission, the Health Department, Owner and all Limited Shared Facility Lot owners, to use in common for the use, repair, maintenance and operation of the Limited Shared Facility.

§14 DESIGNATED AGENT. The record title holder of Lot 16 of the Subdivision as shown on the Plans and Specifications is hereby designated as the designated agent upon which any legal service of process related to this Agreement shall be served (the "Designated Agent"). A majority of the Shared Facility Lot owners shall be permitted to change the identity of the Designated Agent by written notice thereof to the Commission. Once any service of process is received by the Designated Agent or served on the Designated Agent, it shall be deemed constructive notice to and bind the remaining record title owners of the other Limited Shared Facility Lots. All other

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Chesapeake, Maryland 21620

notices from the Commission, including but not limited to invoices for the Annual Assessments and Association Assessments, notices of increase in the Annual Assessment and/or change of the Designated Agent shall be sent by first-class mail, postage prepaid to the current address of each Shared Facility Lot Owner as specified on the real estate tax records of the Kent County Treasurer. Notwithstanding anything herein to the contrary, notices of Commission Assessments and proposed increases in the Annual Assessments shall be sent to the Limited Shared Facility Lot Owners by certified mail, return receipt requested.

§15 LIEN OF ASSESSMENTS. The Annual Assessments and Commission Assessments and deficiencies in the payment thereof as provided herein shall be liens upon the Limited Shared Facility Lots against which they are assessed.

§16 INTEREST ON UNPAID ASSESSMENTS. All Annual Assessments and Commission Assessments are delinquent if not paid within thirty (30) days after the Commission bills for such assessments or deficiencies. All delinquent Annual Assessments, Commission Assessments and deficiencies in the payment thereof shall bear interest at the rate of two percent (2%) per month until paid.

§17 HOLD HARMLESS. Owner and the Limited Shared Facility Lot owners shall solely be responsible for their use of the Limited Shared Facility (unless caused by the Commissioner's negligence) and shall hold the Commission harmless on account of any liability arising from any property damage or bodily injury including death, arising out of their use of the Limited Shared Facility unless caused by the negligence of the Commission or its agents. The Commission shall indemnify and hold Owner and the Limited Shared Facility Lot owners harmless from and against personal injury and property damage arising out of or caused by the Commissions' maintenance and repair of the Limited Shared Facility as provided herein.

§18 COVENANTS TO RUN WITH THE LAND. The terms, covenants and conditions of this Agreement shall run with the land in perpetuity and shall be binding on the parties hereto and their

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Charleston, Maryland 21620

heirs, successors, personal representatives and assigns, as the case may be.

§19 ADDITIONAL DOCUMENTS. Owner will, at any time after the execution hereof, sign, execute, and deliver, or cause others to do so, such confirmatory documents and confirmatory instruments as may be necessary to carry out the provisions of this Agreement.

§20 CAPTIONS. The captions of this Agreement are for convenience of reference only and shall not define nor limit any of the terms or provisions hereof.

§21 SEVERABILITY. Should any one or more of the provisions of this Agreement be determined to be invalid, unlawful, or unenforceable in any respect, the validity, legality, or enforceability of the remaining provisions thereof shall not in any way be affected or impaired thereby.

§22 GOVERNING LAW. This Agreement shall be governed by and construed in accordance with the laws of the State of Maryland.

§23 COUNTERPARTS. This Agreement may be executed in any number of counterparts, each of which shall be an original, but such counterparts shall together constitute but one and the same instrument.

§24 SIGNATURE AND EFFECTIVE DATE. This instrument shall not be effective until duly signed by all parties and recorded among the Land Records of Kent County.

§25 OWNER'S REPRESENTATIONS AND WARRANTIES. As an inducement to Commission to enter into this Agreement, Owner warrants and represents that:

(a) Owner is the owner of the Limited Shared Facility Lots, the Limited Shared Facility Area and the Common Easement Area.

(b) No party has any beneficial interest whatsoever in the Limited Shared Facility Lots, the Limited Shared Facility

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Attorneys At Law  
Chesertown Maryland 21620

Area and the Common Easement Area except for Maryland National Bank whose consent is a part hereof.

(c) There are no mortgage lienholders on the subdivision that have not consented to the creation of the Limited Shared Facility.

(d) Owner has not entered into and is not bound by any agreement, pending litigation, or contract which would prohibit in any way the transaction contemplated by this Agreement.

(e) There is no litigation, arbitration, or other legal proceeding pending or administrative proceedings pending, or, to the knowledge of Owner, threatened against the Owner which might materially affect the transactions contemplated hereby. Owner is not in default in any respect of any order or any decree or rule of any court or governmental authority which may have jurisdiction over Owner which have been issued against Owner.

**§26 GENDER.** Whenever the singular is used herein, the same shall include the plural, and words of any gender shall include each other gender.

**§27 TIME IS OF THE ESSENCE.** Time is of the essence with respect to the obligations of the parties hereto.

**§28 RULES AND REGULATIONS.** Owner and the Limited Shared Facility Lot owners agree to comply with any and all reasonable rules and regulations promulgated by the Commission and the Health Department with respect to the use and operation of the Limited Shared Facility from time to time.

As witness the hands and seals of the parties hereto, the day and year first above written.

WITNESS/ATTEST:

THE KENT COUNTY SANITARY COMMISSION the Governing Body of THE KENT COUNTY SANITARY DISTRICT, INC.

*[Signature]*  
\_\_\_\_\_

By: *[Signature]*  
Frank R. Dierker  
Acting Chairman

Hoon & Carroll  
Attorneys At Law  
Chesapeake Maryland 21620

KENT COUNTY CIRCUIT COURT (Land Records) EHP 285, p. 0099, MSA\_CE5 07. Date available 03/04/2005. Printed 11/08/2013

SWAN CREEK LIMITED PARTNERSHIP,  
a Maryland limited partnership

By: WYEMOOR DEVELOPMENT  
CORPORATION, a Maryland  
corporation, General Partner

Arnell W. Durgin

By: Thomas J. Hutchison  
Thomas J. Hutchison  
President

By: B. A. CHAPTERS CORPORATION,  
a Delaware corporation,  
General Partner

Mary A. Wright

By: Timothy E. Wyman  
Timothy E. Wyman  
President

STATE OF MARYLAND, Kent COUNTY, to wit:

On this the 7<sup>th</sup> day of November, 1989, before me,  
the undersigned, a Notary Public in and for the State and  
County aforesaid, personally appeared FRANK R. DIERKER, who  
acknowledged himself to be the Acting Chairman of the Kent  
County Sanitary Commission, the Governing Body of the Kent  
County Sanitary District, Inc., a corporation, and that he, as  
such Chairman, being authorized so to do, executed the  
foregoing instrument for the purposes therein contained, by  
signing the name of the corporation by himself as Acting  
Chairman.

In witness whereof I hereunto set my hand and official  
seal.

Jeanne M. Mason  
Notary Public

My Commission Expires: July 1, 1990

STATE OF MARYLAND, Queen Anne's COUNTY, to wit:

On this the 2<sup>nd</sup> day of October, 1989, before me, the  
undersigned, a Notary Public in and for the State and County  
aforesaid, personally appeared THOMAS J. HUTCHISON, who  
acknowledged himself to be the President of WYEMOOR DEVELOPMENT  
CORPORATION, a Maryland corporation and a General Partner of  
SWAN CREEK LIMITED PARTNERSHIP, a Maryland limited partnership  
and that he, as such President, being authorized so to do,  
executed the foregoing instrument for the purposes therein  
contained, by signing the name of the corporation by himself as  
President.

In witness whereof I hereunto set my hand and official  
seal.

Arnell W. Durgin  
Notary Public

My Commission Expires: July 1, 1990

STATE OF MARYLAND, Queen Anne's COUNTY, to wit:

On this the 28<sup>th</sup> day of September, 1989, before me, the  
undersigned, a Notary Public in and for the State and County

Hoon & Barrell  
Attorneys At Law  
Charleston, Maryland 21620

aforsaid, personally appeared TIMOTHY E. WYMAN, who adknnowledged himself to be the President of B. A. CHARTERS CORPORATION, a Delaware corporation and a General Partner of SWAN CREEK LIMITED PARTNERSHIP, a Maryland limited partnership, and that he, as such President, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corportion by himself as President.

In witness whereof I hereunto set my hand and official seal.

Mary J. Wright  
Notary Public

My Commission Expires: 7/1/90

MORTGAGEE'S CONSENT

Maryland National Bank, by Lawrence J. Grady, Jr., the sole surviving Trustee under the Deed of Trust encumbering the Little Neck Farm Subdivision dated June 22, 1987 and recorded among the Land Records of Kent County in Liber E.H.P. 229, page 287, hereby consents to the foregoing Limited Shared Facility Agreement.

MARYLAND NATIONAL BANK  
BY Lawrence J. Grady, Jr.  
Trustee

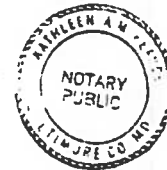
STATE OF MARYLAND, Baltimore COUNTY, to wit:

On this the 6<sup>th</sup> day of October, 1984, before me, the undersigned, a Notary Public in and for the State and County aforesaid, personally appeared LAWRENCE J. GRADY, JR., TRUSTEE, who acknowledged himself to be the Trustee for the benefit of MARYLAND NATIONAL BANK, a national banking association, and that he, as such Trustee, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corportion by himself as Trustee.

In witness whereof I hereunto set my hand and official seal.

Patricia P. H. [Signature]  
Notary Public

My Commission Expires: 7/1/90



Hoon & Marroll  
Attorneys at Law  
Charleston, Maryland 21620

Little Neck Farm  
Limited Shared Facility Agreement

EXHIBIT A  
PROPERTY DESCRIPTION OF LITTLE NECK FARM SUBDIVISION

ALL that lot of ground situated in the Fifth Election District of Kent County, Maryland, described as follows:

BEGINNING for the same on the Shore of Swan Creek and at the fence which divides the land formerly owned by Thomas Miller, but now owned by Richard W. Jones, from the lands hereby conveyed and running by and with the said fence, as it now stands, to Tavern Creek, then by and with Tavern Creek to the lower end of "Little Neck" Island, then up said island and by and with the waters of Swan Creek to the Beginning. Containing three hundred and fifty-three acres more or less.

BEING the same lands conveyed to Swan Creek Limited Partnership by Deed dated December 23, 1986 and recorded among the Land Records for Kent County in Liber E.H.P. 215, page 68 and by Confirmatory Deed dated June 23, 1987 and recorded among the Land Records for Kent County in Liber E.H.P. 231, page 83.

Little Neck Farm Subdivision

Phase I: Subdivision Plat (4 pages) dated April, 1988 and recorded among the Land Records for Kent County in Plat Book E.H.P. 2, page 290.

Phase II: Subdivision Plat (5 pages) dated April, 1988 and recorded among the Land Records for Kent County in Plat Book E.H.P. 2, page 314.

Phase III: Subdivision plat (4 pages) dated December 16, 1988 and intended to be recorded among the Land Records for Kent County.

Little Neck Farm Limited Shared Facility Lots

Phase I: Lots 15 & 16 and Community Area.

Phase II: Lots 17-30.

Hess & Marroll  
Attorneys At Law  
Chesapeake, Maryland 21620



1986 285 103

LITTLE NECK FARM  
LIMITED SHARED FACILITY AGREEMENT

EXHIBIT B

DESCRIPTION OF LIMITED SHARED FACILITY AREA AND  
COMMON EASEMENT AREA:

Beginning for the same at a Point, said Point being the northeasterly corner of the herein described land and bears South 57 degrees 01 minutes 49 seconds West 72.37 feet from the northwesterly corner of Lot No. 7 of Little Neck Farm and from said Place of Beginning running (1) South 14 degrees 03 minutes 56 seconds East 609.52 feet; thence (2) South 14 degrees 46 minutes 47 seconds East 211.60 feet; thence (3) South 72 degrees 46 minutes 37 seconds West 201.15 feet; thence (4) North 14 degrees 24 minutes 36 seconds West 218.97 feet; thence (5) North 14 degrees 14 minutes 21 seconds West 602.11 feet; thence (6) North 72 degrees 46 minutes 37 seconds East 201.66 feet to the Place of Beginning, containing 10.046 acres of land, more or less.

Together with a twenty foot wide easement, the outline of said easement being more particularly described as follows;

Beginning for the same at the end of the fifth course of the above description and running from thence (1) South 75 degrees 45 minutes 39 seconds West 32.27 feet to Burris Road; thence by and with the easterly side of Burris Road (2) by and with the Arc of a Curve deflecting to the right, the Chord of which bears North 23 degrees 38 minutes 18 seconds West 20.27 feet; thence (3) North 75 degrees 45 minutes 39 seconds East 35.68 feet; thence (4) South 14 degrees 14 minutes 21 seconds East 20,00 feet.

BEING part of the same lands conveyed to Swan Creek Limited Partnership by Deed dated December 23, 1986 and recorded among the Land Records for Kent County in Liber E.H.P. 215, page 68 and by Confirmatory Deed dated June 23, 1987 and recorded among the Land Records for Kent County in Liber E.H.P. 231, page 83.

Koss & Marrott  
Attorneys at Law  
Charleston, Maryland 21620

11/22/87 THE FOREGOING Comt FILED FOR RECORD  
AND IS ACCORDINGLY RECORDED AMONG THE LAND RECORDS OF KENT COUNTY, MD. IN  
LIBER EHP NO. 285 FOLIO 103  
Paul J. Under CLERK  
F-1



**APPENDIX 1-F**

**Glossary**



For the purposes of this Plan, the following definitions and terms are adopted:

1. "Advanced waste treatment" means the treatment of wastes or wastewaters to (a) reduce content of specific constituents, such as nitrogen and phosphorus, which are not controlled sufficiently by Best Practicable Control Technology Currently Available (BPCTCA) or by secondary treatment, or to (b) reduce organic oxygen demand beyond the level attainable by BPCTCA or secondary treatment, so as to comply with waste load allocations in water quality limited waters.
2. "Approving Authority" means one or more officials, agents or agencies of local government designated by the local governing body or specified by other provisions of the Environment Title 9, Subtitle 5, Article C of the Code of Maryland to take certain actions as a part of implementing this section.
3. "Aquifer" means any formation of soil, sand gravel, rock, or other material, or any crevice from which underground water is or may be produced.
4. "Average Flow" means an hourly flow in a 24-hour period, including domestic, industrial, and commercial components as well as infiltration and inflow (I and I). "Average Daily Flow"--the total gallonage of water for particular use in one year divided by 365.
5. "Base flow" means the discharge entering stream channels from groundwater or other delayed sources; i.e., stream flow periods not affected by recent precipitation.
6. "Bermed Infiltration Pond" is a means of wastewater disposal by discharge to groundwater through the water-bearing sands of the subsurface soil. This method is used in localities where a conventional sewage disposal system (tile field) is inoperable due to seasonally high groundwater.
7. "Best Practicable Control Technology Currently Available" (BPCTCA) means a feasible process which, as demonstrated by general use, demonstration process, or pilot plants, represents good engineering practice at reasonable cost at the time the State Discharge Permit is issued or thereafter modified or reissued. For discharges from publicly owned treatment works and other sewage treatment facilities, BPCTCA means the secondary treatment levels specified by EPA in the State Discharge Permits.
8. "Biochemical Oxygen Demand" (BOD) is the amount of oxygen required by bacteria while stabilizing decomposable organic matter under aerobic conditions. BOD5 is a standard laboratory test to determine oxygen demand of a sample incubated for a five-day period at 20 °C; usually expressed as milligrams per liter (mg/l) or parts per million (ppm).
9. "Community Sewerage System" means any system, whether publicly or privately owned, serving two or more individual lots, for the collection and disposal of sewerage or industrial wastes of a liquid nature, including various devices for the treatment of such sewage and industrial wastes. A community sewerage system having a capacity of less than 5,000 gpd shall, for regulatory purposes, be considered an individual sewerage system.
10. "Community Water Supply System" means any system, whether publicly or privately owned, serving two or more individual lots which provides a source of water and a distribution



system, including any treatment and storage facility. A community water system having a capacity of less than 5,000 gpd shall, for regulatory purposes, be considered an individual water system.

11. "Cost-effectiveness analysis" means an evaluation of data including economic factors such as capital, operation, maintenance, financing and user costs, environmental effects, implementation capability, public acceptance, and other related factors demonstrating the most efficient and economic alternative over the life of the treatment works being analyzed.
12. "County Plan" means a Comprehensive Plan for the provision of adequate water supply systems and sewerage systems, whether publicly or privately owned throughout the County and all amendments and revisions thereto.
13. "Denied Access Line" means a water or wastewater line which was designated and intended to function as part of a distribution and/or collection network. Such lines shall be specifically identified on the official Water & Sewerage Plan Maps. Access will not be permitted except as specified in the policies stated as part of this plan.
14. "Discharge" means the addition, introduction, leaking, spilling, or emitting any pollutant to waters of the State or the placing of any pollutant in a location where it is likely to pollute.
15. "Disposal system" means a system for disposing of wastes, either by surface or underground methods, and includes treatment works, disposal wells, and other systems.
16. "Dissolved Oxygen" (DO) is the amount of oxygen dissolved in liquid. Quantities are usually expressed as milligrams per liter (mg/l) or parts per million (ppm).
17. "DNR" means the Department of Natural Resources.
18. "Effluent" means the outflow of waste into the waters of the State, whether treated or untreated, from an industrial process, holding tank, pond, sewer, or other point source.
19. "Effluent limitations" means any restrictions or prohibitions established under State or Federal Law including, but not limited to, parameters for toxic and nontoxic discharges, standards of performance for new sources, or ocean discharge criteria. The restrictions or prohibitions shall specify quantities, rates, and concentrations of chemical, physical, biological, and other constituents which are discharged into State waters.
20. "Effluent limited waters" means waters of the State which the WRA has identified as those in which Best Practical Control Technology Currently Available for industrial discharges and secondary treatment for sewage discharges is sufficiently stringent to maintain applicable water quality standards.
21. "EHA" means the Environmental Health Administration of the Maryland Department of Health and Mental Hygiene. Its successor is the MDE.
22. "EPA" means the United States Environmental Protection Agency, or its successor.



23. "Estuary" means a semienclosed coastal body of water having a free connection with the open sea and within which the seawater is measurably diluted with fresh water deriving from land drainage.
24. "Evapotranspiration System" is a means of wastewater disposal in localities where site conditions preclude soil absorption due to seasonal high groundwater. This method consists of evaporation (the loss of water vapor from land or water body surfaces to the air) and transpiration (the net movement of soil water through plants to the air).
25. "Existing Service Area" means that area that is currently served.
26. "Facilities Plan" is the initial phase (Step 1) in implementing federally-aided construction of individual or central sewerage collection, treatment and disposal facilities under EPA's Construction Grants Program. A facilities plan study determines the most cost-effective method of providing adequate sewerage facilities in an area for preparation of design plans and specifications (Step 2) and construction (Step 3).
27. "Fecal coliform" means the portion of the coliform group which is present in the gut or the feces of warmblooded animals. It generally includes organisms which are capable of producing gas from lactose broth in a suitable culture medium within 24 hours at 44.5 ° +/- .5 °C.
28. "Federal Water Pollution Control Act, as amended" means the Federal Water Pollution Control Act Amendments of 1972 and 1977, or amendments thereto (codified as Title 33, U.S.C.).
29. "Final Planning Stages" means a work or works of community water supply and community sewerage system for which contract plans and specifications have been completed.
30. "Fish" means aquatic vertebrates which have bony skeletons, are covered by dermal scales, usually have spindle-shaped bodies, and swim by fins and breath by gills.
31. "Five-Year Period" means that period, depending upon the County's capital improvement program, five years following the date of adoption of the County Plan, its amendment, or revision by the County.
32. "Immediate Priority" means a work or works of community water supply and community sewerage system for which the beginning of construction is scheduled to start within two years following the date of adoption of the County Plan, its amendment, or revision by the County.
33. "Individual Sewerage System" means a single system of sewers and piping, treatment tanks, or other facilities serving only a single lot and disposing of sewage or individual wastes of a liquid nature, in whole or in part, on or in the soil of the property, into any waters of this State, or by other methods.
34. "Individual Water Supply System" means a single system of piping, pumps, tanks, or other facilities utilizing a source of ground or surface water to supply only a single lot.



35. "Industrial waste" means any liquid, gaseous, solid or other waste substance or combination thereof resulting from any process of industry, manufacturing, trade or business, or from the development of any natural resource including agriculture.
36. "Infiltration" is the water entering a sewer system and service connections from the ground, through such means as, but not limited to, defective pipes, pipe joints, connections, or manhole walls. Infiltration does not include, and is distinguished from, inflow.
37. "Inflow" is the water discharged into a sewer system, including service connections, from such sources as (but not limited to) roof leaders; cellar, yard, and area drains; foundation drains; cooling water discharges; drains from springs and swampy areas; manhole covers; cross connections from storm sewers and combined sewers; catch basins; storm waters; surface run-off; street wash waters, or drainage. Inflow does not include, and is distinguished from, infiltration.
38. "Infiltration/Inflow (I and I)" is the total quantity of water from both infiltration and inflow without distinguishing the source.
39. "Lot" (synonymous with parcel) means the area contained within the boundary lines of a plat as recognized by the Maryland Department of Assessments and Taxation as property lines defining one lot.
40. "Marina Facility" means a dock, wharf, or basin providing mooring for boats which may contain on-board toilet facilities, operated under public or private ownership, either free or on a fee basis, for the convenience of the public or club membership.
41. "Maximum (or Max) Flow" means the greatest hourly flow that would normally occur. "Maximum Daily Flow"--Two times average daily flow.
42. "MDE" means the Maryland Department of the Environment.
43. "Multiuse Sewerage System" means a single system serving a single lot (whether owned or operated by an individual or group of individuals) under private or collective ownership and serving a group of users for the collection and disposal of sewage or industrial wastes of a liquid nature, including various devices for the treatment of such sewage and industrial wastes having a treatment capacity of 5,000 gpd or more. A multiuse sewerage system having a capacity of less than 5,000 gpd shall, for regulatory purposes, be considered an individual sewerage system.
44. "Multiuse Water Supply System" means facilities utilizing a source of ground or surface water to supply a group of individuals on a single lot and having a capacity of 5,000 gpd or more. A multiuse water supply system having a capacity of less than 5,000 gpd shall, for regulatory purposes, be considered an individual water supply system.
45. "National Pollutant Discharge Elimination System" (NPDES) means the national system for the issuance of permits as designated by the 1972 amendments to the Federal Water Pollution Control Act.





46. "NPDES application" means the uniform national forms (including subsequent additions, revisions, or modifications duly promulgated by the Environmental Protection Agency pursuant to the Federal Water Pollution Control Act, as amended) for application for an NPDES permit.
47. "NPDES permit" means the permit issued under the Federal Water Pollution Control Act, as amended.
48. "NPDES reporting form" means the uniform national forms (including subsequent additions, revisions, or modifications duly promulgated by the Environmental Protection Agency pursuant to the Federal Water Pollution Control Act, as amended) for reporting data and information pursuant to monitoring and other conditions of the NPDES permit.
49. "Natural" or "naturally occurring values" means the following values applicable to all the waters of the State:
  - a. those water quality values which exist unaffected by, or unaffected as a consequence of, any water use by any person;
  - b. those water quality values which exist unaffected by the discharge, or indirect deposit of, any solid, liquid or gaseous substance by any person; or
  - c. (c) any other water quality values which represent conditions which the MDE by its rules and regulations defines as natural. For the purposes of this definition the following conditions shall be considered as natural: infestations of water milfoil, *Myriophyllum spicatum*; infestations of water chestnut, *Trapanatans*; the presence of sea lettuce, *ulva lactuca*; and the presence of sea nettles, *Aurelia sp.*
50. "New source" means any source, the construction of which is commenced after the publication of proposed regulations by the EPA prescribing a standard of performance which will be applicable to such source if such standard is thereafter promulgated.
51. "Non-Point Source" means pollution originating from land run off where no specific outfall or "point source" can be identified.
52. "Offshore facility" means any installation of any kind located in, on, or under any of the navigable waters within the State other than a vessel.
53. "Onshore facility" means any installation (including, but not limited to terminals, motor vehicles and rolling stock) of any kind located in, on, or under any land within the State.
54. "Operator" means that person or persons with responsibility for the management and performance of each facility.
55. "Other aquatic life" means all organisms, other than fish, which grow in, live in, or frequent water.

56. "Other waste" means garbage, refuse, wood, sawdust, shavings, bark, sand, lime, cinders, ashes, offal, oil, tar, dyestuffs, acids, chemical, and all discarded substances other than sewage or industrial waste.
57. "Peak Flow" means a rate of flow over sufficient length of time to adversely affect the detention time of treatment units or the flow characteristics of conduits (Maryland Design Manual). "Peak Daily Flow"--3.5 times average daily flow.
58. "Permeability" (of an aquifer) means the volume of water at the prevailing kinematic viscosity that will move in unit time under a unit hydraulic gradient through a unit area measured at right angles to the direction of flow.
59. "Point of discharge" means that location in or adjacent to a body of water at which any liquid, solid or gaseous substances are discharged or deposited.
60. "Point source" means any discernible, confined and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are, or may be, discharged.
61. "Pollutant" means any wastes or wastewaters discharged from any publicly owned treatment works or industrial source and all other liquid, gaseous, solid or other substances which pollute any waters of this State.
62. "Pollution" means every contamination or other alteration of the physical, chemical, or biological properties of any waters of the State, including change in temperature, taste, color, turbidity, or odor of the waters; or the discharge or deposit of any organic matter, harmful organism, liquid, gaseous, solid, radioactive, or other substance into any waters of the State as will render the waters harmful, detrimental, or injurious to public health, safety, or welfare, domestic, commercial, industrial, agricultural, recreational, other legitimate beneficial uses, or livestock, wild animals, birds, fish or other aquatic life.
63. "Public Works Agreement" (PWA) means the written document describing the conditions under which a developer or potential user shall be granted water and/or sewerage allocation from the Kent County Department of Water & Wastewater Services.
64. "Publicly owned treatment works" means any facility for the treatment of pollutants owned by the State or any political subdivision thereof, municipality, or other public entity.
65. "Receiving water" means surface waters of the State into which wastes or wastewaters are, or may be, discharged.
66. "Remodel" means the complete reconstructing or relocation of a whole plumbing system to another part of a building, per the Maryland Water Conservation Plumbing Fixtures Act.
67. "Sanitary District"--Division of an area or geographical unit for the purpose of providing water and/or sewer service. Kent County is considered a Sanitary District which may be divided up into smaller sections and each considered a subdistrict.

68. "Schedule of Compliance" means a schedule of remedial measures including an enforceable sequence of actions or operations leading to compliance with the effluent limitations or water quality standard as specified by an order or permit requirement of the EHA Administration.
69. "Secondary treatment" means the treatment of sewage to produce effluent equal to or better than the following criteria:
- a. Five-day biochemical oxygen demand (BOD5):
  - b. 30 mg/l--average for a 30-day period
  - c. 45 mg/l--average for a 7-day period
  - d. Total suspended solids (SS):
  - e. 30 mg/l--average for a 20-day period\*
  - f. 45 mg/l--average for a 7-day period
  - g. This has been amended to 90 mg/l for lagoon discharges, only, where applicable.
  - h. Bacterial Control: As required to meet water quality standards
  - i. Total chlorine residual: Non-detectable.
70. "Sewage" means the water-carried human waste from residences, buildings, industrial establishments, or other places.
71. "Sewerage Service Area" is that area served by, or capable of being served, a system of sanitary sewers connected to a treatment plant, or in a very large system, subareas of sewerage service as delineated by the County.
72. "Shared System" is a water or wastewater system that serves more than one single-family unit or equivalent dwelling unit.
73. "Shellfish harvesting waters" means waters that are actual or potential areas for the harvesting of shellfish including oysters, softshell clams, and brackish water clams.
74. "State" means the State of Maryland.
75. "State Discharge Permit" means a permit to discharge pollutants into waters of the State, issued by the Administration pursuant to Section 8-1413 of The Natural Resources Article, annotated Code of Maryland (1974 Volume) and Section 402 of the Federal Water Pollution Control Act Amendments, of 1972, or amendments thereto.
76. "Stream flow" means the nontidal water movement that occurs in a natural channel.
77. "Subbasin" means one of the 19 watershed areas delineated by the Maryland Department of the Environment, and comprising, in sum total, the surface waters of the State.
78. "Ten-Year Period" means that period of the 6 through 10 years following the date of adoption of the Plan, its amendment or revision by the County.
79. "Transmissivity" (of an aquifer) means the rate at which water of the prevailing kinematic viscosity is transmitted through a unit width of the aquifer under a unit hydraulic gradient.

80. "Treatment works" means any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature including intercepting sewers, outfall sewers, sewage collection systems, pumping, power, and other equipment, and their appurtenances; and any works including site acquisition of the land that will be an integral part of the treatment process or is used for ultimate disposal of residues resulting from such treatment. This term also means any method or system for preventing, abating, reducing, storing, treating, separating, or disposing of municipal waste, including stormwater runoff, or industrial waste, including waste in combined stormwater and sanitary sewer systems.
81. "Under Construction" means a work or works of community water supply and community sewerage systems where actual work is progressing or where a notice to proceed with a contract for such work has been let as of the adoption date of the Plan, its amendment or revision.
82. "Underground waters (Groundwater)" means water below the surface of the ground.
83. "Vessel" means every watercraft or other artificial contrivance used or capable of being used, as a means of transportation on the waters of the State.
84. "Waste load allocation" means the identification and allotment by the MDE, as necessary to achieve compliance with Water Quality Standards, of quantities of residual wastes which may be discharged from point sources. This allotment shall include consideration for seasonal variations, and a margin of safety, and the contribution of non-point sources.
85. "Wastes" means industrial wastes and all other liquid, gaseous, solid or other substances which will pollute any waters of the State.
86. "Wastewaters" means any liquid waste substance derived from industrial, commercial, municipal, residential, agricultural, recreational or other operations or establishments, and any other liquid waste substance containing liquid, gaseous, or solid matter and having characteristics which will pollute any waters of the State.
87. "Water class unit" means a distinct portion of a subbasin.
88. "Water quality limited waters" means shellfish waters and other waters of the State for which Best Practicable Control Technology Currently Available for industrial discharges and secondary treatment for sewage discharges is not sufficiently stringent to maintain applicable water quality standards.
89. "Watercourse" means a specific body or channel of water which is part of the waters of the State.
90. "Waters" means the liquid substance which is derived from a ground water source, or a surface source, or a piped supply, or any combination thereof, which will be discharged, without change in quality, into the waters of the State, with the exception of stormwater runoff.

91. "Waters of the State" includes both surface and underground waters within the boundaries of the State subject to its jurisdiction, including that portion of the Atlantic Ocean within the boundaries of the State, the Chesapeake Bay and its tributaries, and all ponds, lakes, rivers, streams, public ditches, tax ditches, and public drainage systems within the State, other than those designed and used to collect, convey or dispose of sanitary sewage. The flood plain of free-flowing waters determined by DNR-WRA on the basis of the 100-year flood frequency is included as waters of the State.
92. "WRA" means the Water Resources Administration of the State of Maryland Department of Natural Resources.
93. "Zero Discharge Policy" means the elimination of all point source pollutant discharges from wastewater treatment facilities to surface waters.





**APPENDIX 1-G**

**Commissioners' Agreement**





**AGREEMENT**

THIS AGREEMENT is made and executed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by and between the County Commissioners of Kent County, Maryland, hereinafter referred to as "Commissioners," and \_\_\_\_\_ of Kent County, State of Maryland, sometimes hereinafter referred to as "Owner" or "Developer."

WHEREAS, Owner owns certain property in Kent County, Maryland, more particularly described in a Deed recorded among the Land Records for Kent County, Maryland in Liber \_\_\_\_\_, No. \_\_\_\_\_, Folio \_\_\_\_\_, shown on Tax Map \_\_\_\_\_, Parcel \_\_\_\_\_ and shown as Lot \_\_\_\_ on a plat, made by \_\_\_\_\_, dated \_\_\_\_\_, a copy of which is attached hereto;

WHEREAS, Commissioners have agreed to grant to owner certain water and/or sewer allocations as more particularly set forth herein.

NOW, THEREFORE, WITNESSETH: that for and in consideration of the sums set forth herein and paid by Owner to Commissioners, and other good and valuable considerations, the receipt of which is hereby acknowledged, the parties herein agree as follows;

1. Owner will pay the Commissioners the sum of \_\_\_\_\_ (\$0.00) Dollars for acquiring \_\_\_\_ water allocation unit(s) and \_\_\_\_ sewer allocation units(s) in the \_\_\_\_\_ Area for sewer and/or water services (the "Allocation(s)"). This allocation is in accordance with the Kent County Allocation Policy adopted by the Kent County Commissioners on \_\_\_\_\_. The Allocation(s) shall be used for Residential Use.
2. The Allocation(s) granted hereunder will remain valid only if the original conditions of this Agreement remain unchanged. The Owner cannot propose changing the project without risking the loss of the allocation(s). Allocation(s) are considered to be granted when an Agreement has been executed between the Commissioners and the Developer/Owner.

The Allocation(s) fee must be paid on execution of this Agreement; thereafter, the Developer/Owner will be assessed the minimum quarterly charges for vacant lots established by the Commissioners until the earlier of connection of the project to Kent County's water and/or sewer lines or two (2) years from the date of this Agreement. After the earlier of connection to Kent County's water and/or sewer lines, or the passage of two years from the date of this Agreement, Developer/Owner shall be charged the full quarterly charges for the improvements on the property unless, additional arrangements are specified herein:

ADDITIONAL ARRANGEMENTS: \_\_\_\_\_ [NONE] \_\_\_\_\_.

3. The Commissioners reserve the right to review and recapture any allocations that have not been connected to Kent County's water and/or sewer lines in the event that the Wastewater Plant in the district for which they were approved is within 85% of its design capacity. Owner acknowledges the Commissioners' right to recapture any unconnected allocations subject to this Agreement subject to the conditions stated in this paragraph. Owner further acknowledges that allocation fees for any recaptured allocation are NON- REFUNDABLE. The failure of the Commissioners to undertake the review and recapture at a time when the Wastewater Plant is within 85% of its design capacity shall not constitute a waiver of the provisions of this paragraph in the event that the Commissioners decide to conduct a review and recapture during a subsequent time when the plant is within 85% of capacity.
4. The Owner will be responsible for the installation of any water or sewer appurtenances necessary for service to the property, for obtaining all necessary permits, and for the payment to the Commissioners of all associated inspection fees.
5. Owner shall guarantee the construction for a period of one (1) year from final acceptance by the Department.

WITNESSES

WITNESS the execution hereof by the parties hereto the day and year first above written.

WITNESS:

PROPERTY OWNER(S):

\_\_\_\_\_  
\_\_\_\_\_

ATTEST:

THE COUNTY COMMISSIONERS OF  
KENT COUNTY, MARYLAND

By: \_\_\_\_\_  
P. Thomas Mason, President

**APPENDIX 2-A**

**Kent County Tributary Strategy Point Source Nutrient Caps**



# APPENDIX 2-A

## Kent County Tributary Strategy Point Source Nutrient Caps

POINT SOURCE	COUNTY	DESIGN CAPACITY (MGD)	SURFACE DISCHARGE (MONTHS)	PROJECTE D 2020 FLOW (MGD)	2000 FLOW (MGD)	2000 TN (MG/L)	2000 TP (MG/L)	2000 TNL (LB/YR)	ENR STRATEGY TOTAL		ENR STRATEGY TOTAL PHOSPHOR US LOAD CAP (LBS/YR)
									2000 TN (MG/L)	2000 TNL (LB/YR)	
CHESTERTOWN	KENT	1.500		0.637	0.637	9.25	4.34	17,978	18,273	8,437	1,371
ROCK HALL	KENT	0.505		0.265	0.264	14.81	0.51	11,933	6,152	414	401
BETTERTON	KENT	0.200		0.022	0.021	18.00	3.00	1,137	1,224	189	204
GALENA	KENT	0.060		0.028	0.026	26.26	4.51	2,084	1,558	358	256
GREAT OAKS LANDING	KENT	0.014		0.006	0.006	18.00	3.00	306	332	51	55
KENNEDYVILLE	KENT	0.050		0.026	0.022	18.00	3.00	243	1,389	41	233
MILLINGTON	KENT	0.105		0.051	0.057	18.00	3.00	3,114	3,344	519	557
TOLCHESTER	KENT	0.265		0.102	0.086	18.00	3.00	4,827	5,984	805	931
WORTON-BUTLERTON	KENT	0.150		0.066	0.061	18.00	3.00	3,372	3,631	562	605




**APPENDIX 2-B**

**MDE Point Source Cap Power Point**





# APPENDIX 2-B

  
 Department of the Environment  
**Point Source  
 Nutrient Loading Cap  
 &  
 WWTP Capacity Planning**

2-B  
 MDE

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**Basic Load Calculation**

**Nutrient Load (lbs/year) = Q x C x 8.34 x 365**

Q: Flow (Million Gallons per Day, MGD)  
 C: Effluent Nutrient Concentration (mg/L)  
 8.34: Conversion Factor  
 365: days/year

Example: 0.3 MGD, 18 mg/L TN in effluent  
 Annual Load = 0.3 x 18 x 8.34 x 365 = 18,475 lbs/yr  
 NOTE: Some plants have seasonal limits.

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**Tributary Strategy Point Source Load Cap**

**Information:**

- ENR Strategy Nutrient Loading Caps
- Construction Schedule for Significant Point Sources
- <http://www.dnr.state.mi.us/water/waterquality/pointsource/pointsource.htm>

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**1.1.1** Rules for Establishing Point Source Loads (Major Plant)

**Major Plants (Daily Flow greater than 0.5 MGD)**

- existing or Planned Flow Capacity
- 2. ENR treatment level: Annual average concentration (4.0 mg/L TN, 0.3 mg/L TP)

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**1.1.2** Estimating Treatment Concentration for Plant Expansion

**Majors (Capacity greater than 0.5 MGD)**

If Future Expansion is Contemplated  
Nutrient Load Allocation remains the same\*

$$\text{Load} = \text{Flow} \times \text{Concentration}$$

fixed

\* Unless an offset/trade is considered

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**1.1.3** Estimating Load Above Cap for a Plant Expansion

**Example:** Expansion of Major WWTP

TN Allocation (Cap based on flow of 0.5 MGD):  
0.5 MGD x 4 mg/L x 8.34 x 365 d/yr = 6,100 lbs/yr

Consider Expansion to 0.75 MGD (0.25 MGD Increase).

Increased TN Load:  
0.25 MGD x 4 mg/L x 8.34 x 365 d/yr = 3,050 lbs/yr

- 3,050 lbs/year needs to be offset in some way
- Offset Allocation
- Trade
- Additional Treatment

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11-10  
11/12 Estimating Treatment Concentration for Plant Expansion

**Example:** Expansion of Major WWTP

TN Allocation (Cap based on flow of 0.5 MGD):  
 $0.5 \text{ MGD} \times 4 \text{ mg/L} \times 8.34 \times 365 \text{ d/yr} = 6,100 \text{ lbs/yr}$

Consider Expansion to 0.75 MGD.  
Effluent TN Concentration Needed to Meet the TN Cap:  
 $\frac{6,100 \text{ lbs/yr}}{0.75 \text{ MGD} \times 8.34 \times 365 \text{ d/yr}} = 2.7 \text{ mg/L}$

Is this concentration technically feasible to achieve?  
If not, other options can be considered.

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11-11  
11/12 Rules for Establishing Point Source Loads (Minor Plants)

**Minor Plants (Capacity less than 0.5 MGD)**

Basis for Nutrient Load Cap.

1. 2020 projected flow or Design Capacity flow (whichever is lower)
2. Secondary level annual average concentration (10 mg/L TN, 3 mg/L TP)

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11-12  
11/12 Rules for Establishing Point Source Capacity (Minor)

**If Future Expansion of Minor Plant is Considered...**

Case 1. Nutrient load allocations were **LARGER THAN**  
6,100 lbs/yr for TN or  
457 lbs/yr for TP

Load allocation will be "re-adjusted" DOWN to these values

Case 2. Nutrient load allocations were **LESS THAN**  
6,100 lbs/yr for TN or  
457 lbs/yr for TP

Load allocation will remain the same

As a result of increased discharge flow, the new limits for effluent nutrient concentration will be **EXCEEDED**

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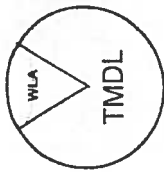
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AREA 101: What is TMDL Based Nutrient Cap?



WLA is portion of the receiving water's total maximum daily load (TMDL) that is allocated to a specific point source

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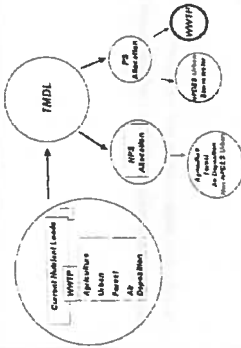
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AREA 102: TMDL Allocation Process



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AREA 103: TMDL Based Nutrient Cap

When will TMDL become permit limits?  
After a TMDL is approved by EPA, the WLA allocated for the WWTP will become limits at the next NPDES permit renewal

ENR limits vs. TMDL limits

NPDES permit will adapt the more stringent ones as the discharge limits

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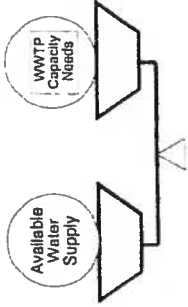
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**Water Supply Constraint**

11/14/11



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**APPENDIX 2-C**

**WWTP Input Summary**



Appendix 2-C

Input Summary

Concentration Input Summary

Name of Plant	Nitrogen			Phosphorus		
	Source of Information	Length of Information	Nitrogen Value (mg/liter)	Source of Information	Length of Information	Phosphorus Value (mg/liter)
<b>Major Plants</b>						
Chestertown WWTP	Assumed <sup>1</sup>	N/A	3	Assumed <sup>1</sup>	N/A	0.3
<b>Minor Plants WWTP</b>						
Rock Hill WWTP	DMR	2015 - 2017	11.7	DMR	2015 - 2017	0.36
Galena WWTP	DMR	2018	3	DMR	2018	0.3
Millington WWTP	Comp Plan	2012	6.1	Comp Plan	2012	1
Worton WWTP	DMR	2015 - 2017 <sup>2</sup>	2.9	DMR	2015 - 2017 <sup>2</sup>	0.21
Tolchester WWTP	DMR	2015 - 2017	7.8	DMR	2015 - 2017	0.27
Kennedyville WWTP	DMR	2015 - 2017	3.6	DMR	2015 - 2017	0.56
Betterton WWTP	DMR	2015 - 2017	3	DMR	2015 - 2017	0.3

<sup>1</sup> Chestertown, Betterton and Galena is assumed to be operating at ENR.

<sup>2</sup> Outfall 001 to Morgan Creek between November 1 and April 31.

Flow Input Summary

Name of Plant	Current Flow		Future Flow		EDU's
	Source of Information	Value	Source of Information	Value	
<b>Major Plants</b>					
Chestertown WWTP	Comp Plan 2015	723,000	Comp Plan	1,025,000	1,208
<b>Minor Plants WWTP</b>					
Rock Hill WWTP	DMRs	255,000	Comp Plan	307,000	208
Galena WWTP <sup>3</sup>	DMRs	34,000	Comp Plan	101,000	268
Millington WWTP <sup>4</sup>	Comp Plan 2018	61,500	Comp Plan	140,000	314
Worton WWTP <sup>1,2,5</sup>	DMRs	67,000	2018 W&S Plan	228,500	646
Tolchester WWTP <sup>1</sup>	DMRs	59,000	2018 W&S Plan	83,034	96
Kennedyville WWTP <sup>1</sup>	DMRs	12,000	2018 W&S Plan	24,837	51
Betterton WWTP	DMRs	20,000	Population Growth	25,000	20
			Total		2,811

<sup>1</sup> No significant growth changes since previous plan.

<sup>2</sup> Worton uses spray irrigation and 1/2 of the current and future flow will be used in the nutrient calculations. Current average flow based on Outfall 001 discharges in 2015-2017.

<sup>3</sup> Includes 20,000 gpd from County Georgetown extension in Future flow.

<sup>4</sup> Does not include proposed Annexation Plan which would require plant expansion.

<sup>5</sup> Worton assumes a conservative growth to show a potential overall County growth capacity for the 200% of the 2048 population projection to provide capacity for economic growth.



## **APPENDIX 2-D**

### **Current Loading Calculation**



Appendix 2D - Current Loading

Plant Name	Current Flow	Concentration Nitrogen (mg/liter)	Concentration Phosphorus (mg/liter)	Nitrogen Load (lb/year)	Phosphorus Load (lb/year)
<b>Major Plants and Significant Minor Plants</b>					
Chestertown WWTP	723,000	3	0.30	6,603	660
<b>Minor Plants</b>					
Rock Hall WWTP	255,000	11.7	0.36	9,082	279
Galena WWTP	34,000	3	0.30	310	31
Millington WWTP	61,500	6.1	1.00	1,142	187
Worton WWTP	67,000	2.9	0.21	296	21
Tolchester WWTP	59,000	7.8	0.27	1,401	48
Kennedyville WWTP	12,000	3.6	0.56	132	20
Betterton WWTP	20,000	3	0.30	183	18

- 1 Chestertown, Betterton and Galena are assumed to be operating at ENR levels.
- 2 Effluent Concentrations were obtained from the most current DMR, with the exception of Chestertown and Millington.
- 3 Worton uses a spray irrigation Outfall 6 months of the year and 1/2 of the current and future flow will be used in the nutrient calculations

$$Nutrient\ load = Q (MGD) \times C \left( \frac{mg}{liter} \right) \times 8.34 \times 365 \left( \frac{days}{year} \right)$$





## **APPENDIX 2-E**

### **2048 Loading Calculation**



Appendix 2-E 2048 Loadings

Plant Name	2048 Flow	Concentration Nitrogen (mg/liter)	Concentration Phosphorus (mg/liter)	Nitrogen Load (lb/year)	Phosphorus Load (lb/year)
<b>Major Plants and Significant Minor Plants</b>					
Chestertown WWTP	1,025,000	3.00	0.30	9,361	936
<b>Minor Plants</b>					
Rockhall WWTP	307,000	11.7	0.30	10,934	280
Galena WWTP	101,000	3.00	0.30	922	92
Millington WWTP	140,000	3.00	0.30	1,279	128
Worton WWTP	228,500	2.9	0.21	1,009	73
Tolchester WWTP	83,034	7.8	0.27	1,972	68
Kennedyville WWTP	24,837	3.6	0.56	272	42
Betterton WWTP	25,000	3.00	0.30	228	23

- 1 2048 Conditions Assume Chestertown, Betterton, Millington and Galena are operating at ENR levels after capacity upgrades.
- 2 Effluent Concentrations were obtained from the most current DMR, unless assumed to be operating at ENR levels.
- 3 Tolchester Concentrations are based on loads over a five month period, can be seen in Appendix, 2G
- 4 Betterton's plant upgrade completed in 2018, it is assumed ENR levels will be obtained.
- 5 Worton uses a spray irrigation Outfall 6 months of the year and 1/2 of the current and future flow will be used in the nutrient calculations

$$Nutrient\ load = Q(MGD) \times C\left(\frac{mg}{liter}\right) \times 8.34 \times 365 \left(\frac{days}{year}\right)$$



**APPENDIX 3-A**

**USGS Groundwater Level Sites in  
Kent County with Greater Than 10 Readings**



USGS Groundwater Levels for Kent County with Greater than 10 Readings

Agency	Site Number	Site Name	Period of Record		
			Begin Date	End Date	Levels
USGS	390626076083301	KE Dc 89	10/21/1991	9/20/2005	144
USGS	390626076083302	KE Dc 91	10/21/1991	9/14/2007	141
USGS	390837076140401	KE Db 40	12/4/1978	4/23/2008	84
USGS	391124076101001	KE Cb 97	10/24/1991	4/23/2008	148
USGS	391124076101002	KE Cb 98	10/24/1991	9/20/2005	143
USGS	391124076101003	KE Cb 99	10/24/1991	2/19/2004	138
USGS	391124076101004	KE Cb	10/24/1991	4/23/2008	103
USGS	391124076101005	KE Cb	12/9/1991	4/23/2008	145
USGS	391245076034801	KE Cd 53	9/21/1990	11/12/1997	41
USGS	391251076142201	KE Cb	10/23/1991	4/15/2004	78
USGS	391252076135701	KE Cb 32	4/10/1963	4/22/1992	151
USGS	391400076101401	KE Cb 36	4/25/1978	4/23/2008	118
USGS	391432076015501	KE Cd 44	9/18/1959	4/23/2008	503
USGS	391608075594301	KE Be 65	5/22/1989	4/20/1992	14
USGS	391643075550901	KE Be 171	10/24/1991	2/19/2004	61
USGS	391643076002101	KE Bd 181	11/6/2003	10/3/2005	15
USGS	391645076035001	KE Bd 39	5/22/1989	7/16/1991	12
USGS	391650076050402	KE Bc 185	10/23/1991	5/28/2008	183
USGS	391650076050403	KE Bc 186	12/2/1991	2/19/2004	93
USGS	391651076002901	KE Bd 187	11/6/2003	10/3/2005	15
USGS	391652076004301	KE Bd 190	2/4/2004	10/3/2005	13
USGS	391653076003701	KE Bd 186	11/6/2003	10/3/2005	15
USGS	391654076000901	KE Bd 182	11/6/2003	10/3/2005	15
USGS	391654076000902	KE Bd 188	11/6/2003	10/3/2005	15
USGS	391657076003601	KE Bd 154	2/25/2004	10/3/2005	12
USGS	391657076003602	KE Bd 180	2/25/2004	10/3/2005	16
USGS	391657076003701	KE Bd 153	2/25/2004	10/3/2005	15
USGS	391657076003801	KE Bd 152	2/25/2004	10/3/2005	13
USGS	391657076003901	KE Bd 151	2/25/2004	10/3/2005	14
USGS	391657076004001	KE Bd 150	2/25/2004	10/3/2005	13
USGS	391658076003701	KE Bd 191	11/6/2003	10/3/2005	13
USGS	391659075552401	KE Be 212	5/6/1998	10/22/1999	16
USGS	391659076001701	KE Bd 171	12/16/2003	10/3/2005	19
USGS	391659076001702	KE Bd 172	12/16/2003	10/3/2005	20
USGS	391659076001703	KE Bd 173	12/16/2003	10/3/2005	20
USGS	391700076001701	KE Bd 183	11/6/2003	10/3/2005	17
USGS	391700076002401	KE Bd 174	12/16/2003	10/3/2005	20
USGS	391700076002402	KE Bd 175	12/16/2003	10/3/2005	19
USGS	391700076002403	KE Bd 176	12/16/2003	10/3/2005	19
USGS	391701076003601	KE Bd 159	2/4/2004	10/3/2005	14
USGS	391701076003602	KE Bd 160	2/4/2004	10/3/2005	17
USGS	391701076003701	KE Bd 158	2/4/2004	10/3/2005	15
USGS	391702076003301	KE Bd 177	12/16/2003	10/3/2005	18
USGS	391702076003302	KE Bd 178	12/16/2003	10/3/2005	18
USGS	391702076003303	KE Bd 179	12/16/2003	10/3/2005	20
USGS	391702076003401	KE Bd 165	12/16/2003	10/3/2005	20
USGS	391702076003402	KE Bd 166	12/16/2003	10/3/2005	20

USGS Groundwater Levels for Kent County with Greater than 10 Readings

Agency	Site Number	Site Name	Period of Record		
			Begin Date	End Date	Levels
USGS	391702076003403	KE Bd 167	12/16/2003	10/3/2005	20
USGS	391702076003404	KE Bd 168	12/16/2003	10/3/2005	20
USGS	391702076003701	KE Bd 157	2/25/2004	10/3/2005	13
USGS	391702076003801	KE Bd 156	2/25/2004	10/3/2005	15
USGS	391702076003901	KE Bd 155	2/25/2004	10/3/2005	13
USGS	391703076003201	KE Bd 185	11/6/2003	10/3/2005	15
USGS	391703076003401	KE Bd 164	2/4/2004	10/3/2005	16
USGS	391703076003501	KE Bd 163	2/25/2004	10/3/2005	16
USGS	391703076003601	KE Bd 162	2/25/2004	10/3/2005	16
USGS	391703076003701	KE Bd 161	2/25/2004	10/3/2005	13
USGS	391704076003401	KE Bd 169	2/4/2004	10/3/2005	14
USGS	391704076003402	KE Bd 170	2/4/2004	10/3/2005	16
USGS	391707076002801	KE Bd 189	11/6/2003	10/3/2005	14
USGS	391710075584001	KE Be 218	2/25/2004	10/3/2005	16
USGS	391710075584002	KE Be 219	2/25/2004	10/3/2005	15
USGS	391711076001901	KE Bd 184	11/6/2003	10/3/2005	15
USGS	391713075562101	KE Be 203	5/6/1998	10/22/1999	15
USGS	391715075554201	KE Be 211	5/6/1998	10/22/1999	16
USGS	391717075571001	KE Be 194	5/6/1998	9/27/2004	20
USGS	391717075571002	KE Be 195	5/6/1998	5/20/2004	18
USGS	391720075554601	KE Be 159	11/14/1990	10/22/1999	43
USGS	391720075554602	KE Be 160	11/14/1990	10/22/1999	45
USGS	391720075554603	KE Be 161	11/14/1990	10/22/1999	47
USGS	391721075554501	KE Be 63	5/26/1989	10/22/1999	59
USGS	391721075554502	KE Be 64	5/26/1989	10/22/1999	62
USGS	391727075550901	KE Be 216	5/6/1998	10/22/1999	16
USGS	391742075554801	KE Be 62	5/26/1989	10/22/1999	64
USGS	391742075554802	KE Be 162	11/14/1990	10/22/1999	36
USGS	391742075554803	KE Be 163	11/14/1990	10/22/1999	36
USGS	391751076061101	KE Bc 50	6/21/1990	10/6/1993	32
USGS	391752075523901	KE Bf 93	1/11/1990	10/6/1993	37
USGS	391755075532701	KE Bf 154	3/15/1990	10/22/1999	56
USGS	391755075532702	KE Bf 155	8/6/1986	10/22/1999	18
USGS	391810075555801	KE Be 52	11/23/1988	10/22/1999	85
USGS	391810075555802	KE Be 53	4/27/1989	10/22/1999	68
USGS	391810075555803	KE Be 61	5/26/1989	10/22/1999	66
USGS	391811075564901	KE Be 60	5/26/1989	10/22/1999	50
USGS	391813075575202	KE Be 192	5/6/1998	10/22/1999	16
USGS	391814075575501	KE Be 158	11/14/1990	10/22/1999	27
USGS	391815075472101	KE Bg 33	10/26/1978	4/23/2008	166
USGS	391815075472102	KE Bg 34	11/11/1977	4/23/2008	165
USGS	391818075560901	KE Be 157	11/14/1990	10/22/1999	28
USGS	391819075580901	KE Be 156	11/14/1990	10/22/1999	27
USGS	391820075580201	KE Be 189	5/6/1998	5/20/2004	18
USGS	391823075594701	KE Be 43	2/6/1979	4/23/2008	194
USGS	391832075552701	KE Be 214	5/6/1998	10/22/1999	16
USGS	391832075552702	KE Be 215	5/6/1998	10/22/1999	16



USGS Groundwater Levels for Kent County with Greater than 10 Readings

Agency	Site Number	Site Name	Period of Record		
			Begin Date	End Date	Levels
USGS	<u>391832075560802</u>	KE Be 47	7/13/1988	6/28/1993	3
USGS	<u>391832075560803</u>	KE Be 59	5/26/1989	10/22/1999	53
USGS	<u>391832075560804</u>	KE Be 164	11/14/1990	10/22/1999	29
USGS	<u>391838075560901</u>	KE Be 165	11/14/1990	10/22/1999	29
USGS	<u>391838075560902</u>	KE Be 166	11/14/1990	10/22/1999	29
USGS	<u>391838075560903</u>	KE Be 167	11/14/1990	10/22/1999	29
USGS	<u>391846075561701</u>	KE Be 55	2/9/1989	6/11/1993	30
USGS	<u>391849075561601</u>	KE Be 207	5/6/1998	9/30/2004	19
USGS	<u>391849075561602</u>	KE Be 208	5/6/1998	10/22/1999	16
USGS	<u>39185107554401</u>	KE Be 51	10/2/1988	10/22/1999	66
USGS	<u>391851075561701</u>	KE Be 210	5/6/1998	10/22/1999	16
USGS	<u>391851075561702</u>	KE Be 206	5/6/1998	10/22/1999	16
USGS	<u>391851075561801</u>	KE Be 50	10/2/1988	10/22/1999	81
USGS	<u>391907075554401</u>	KE Be 57	5/26/1989	7/8/1992	27
USGS	<u>391907075554402</u>	KE Be 58	5/26/1989	7/8/1992	28
USGS	<u>391923075564301</u>	KE Be 49	11/24/1988	9/11/1991	49
USGS	<u>391923075565001</u>	KE Be 56	5/26/1989	4/21/1992	30
USGS	<u>391941075570102</u>	KE Be 199	5/6/1998	10/22/1999	16
USGS	<u>391941075570103</u>	KE Be 200	5/6/1998	10/22/1999	16
USGS	<u>391957075490601</u>	KE Bg 35	10/15/1987	7/16/1991	24
USGS	<u>391957075490602</u>	KE Bg 36	11/1/1989	4/20/1992	11
USGS	<u>392004075472701</u>	KE Ag 14	10/2/1988	4/2/1991	35
USGS	<u>392006075464601</u>	KE Ag 15	10/2/1988	4/2/1991	36
USGS	<u>392007076075501</u>	KE Ac 20	12/16/1977	4/23/2008	182

There are a total of 503 wells in Kent County where USGS groundwater level readings have been taken.

URL: <http://waterdata.usgs.gov/md/nwis/gwlevels?>

Page Contact Information:

[Maryland NWISWeb Maintainer](#)

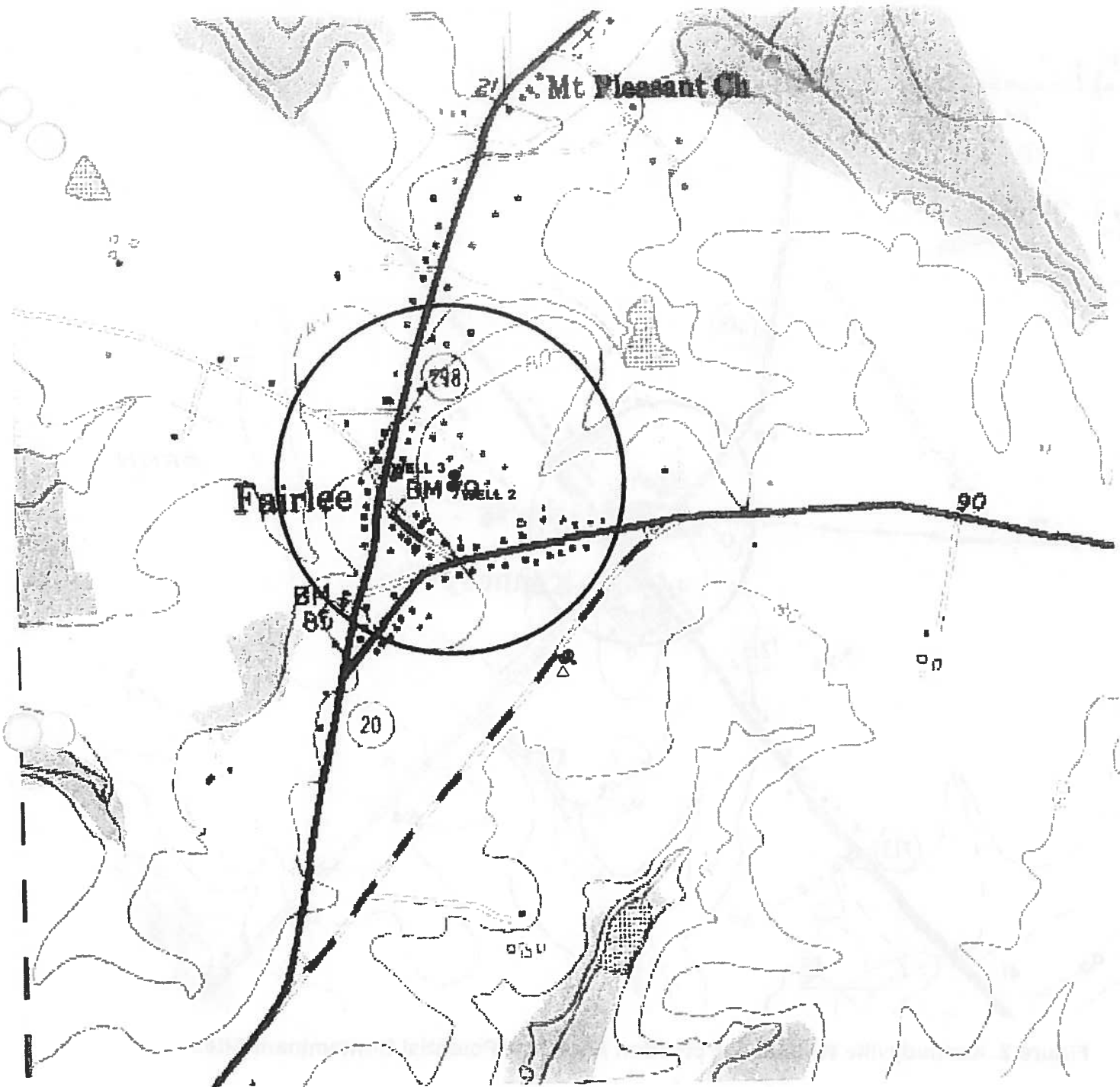
Page Last Modified: 2008-08-19 09:24:22 EDT







**APPENDIX 3-B**

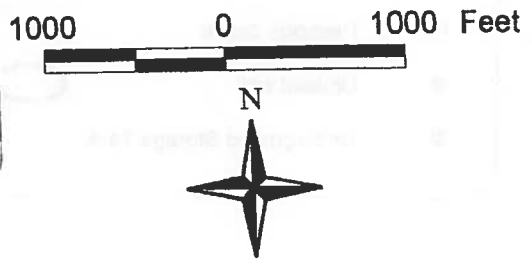
**Source Water Assessment Wellhead  
Protection Area (WHPA) Delineation Maps**



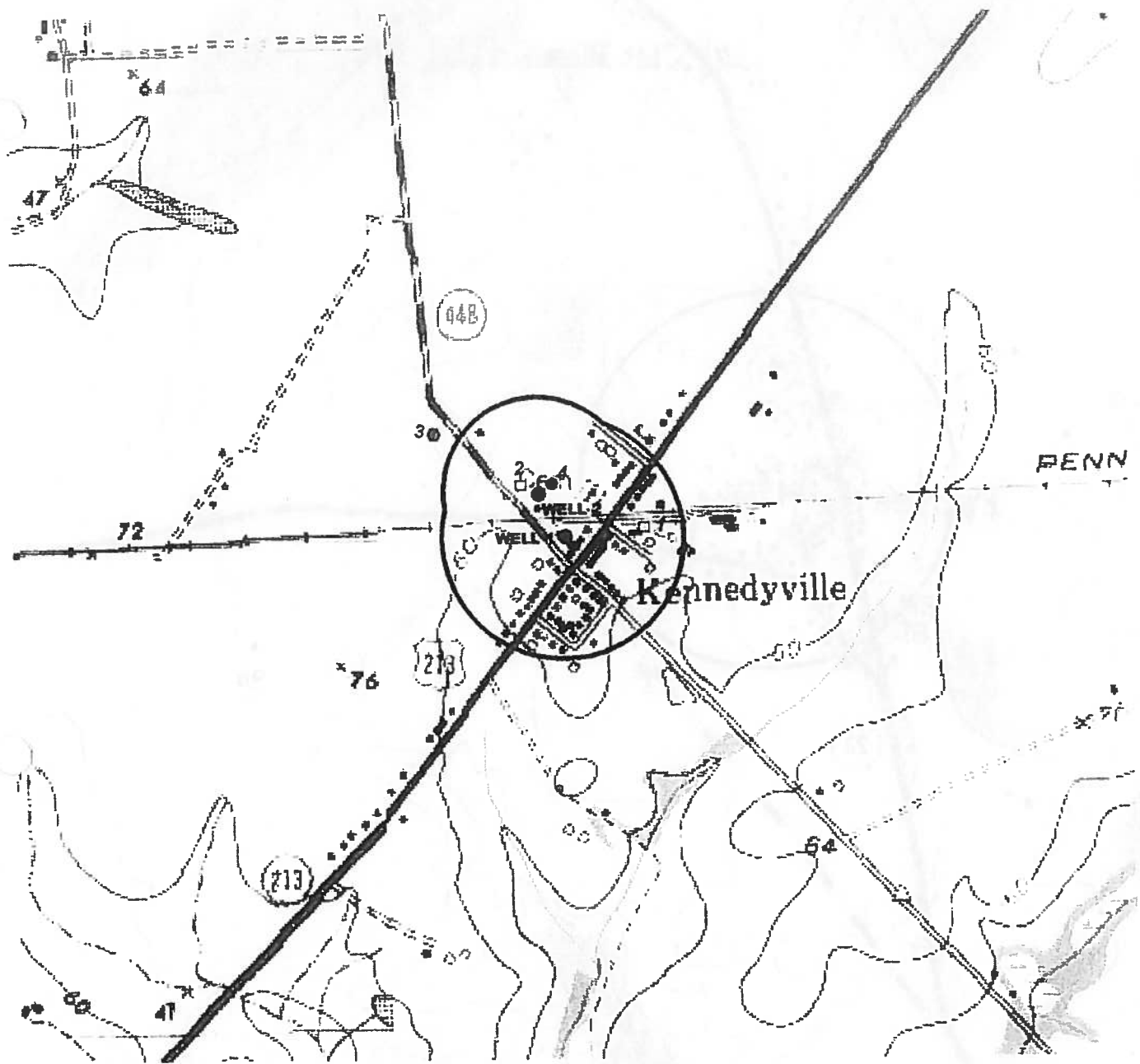


**Figure 2. Fairlee Wellhead Protection Area with Potential Contaminant Sites**

LEGEND	
	Wellhead Protection Area
	Supply Well
	Underground Storage Tank
	Ground Water Discharge



Base Map: USGS Topographic 7.5 Minute Quadrangle - Rock Hall, MD



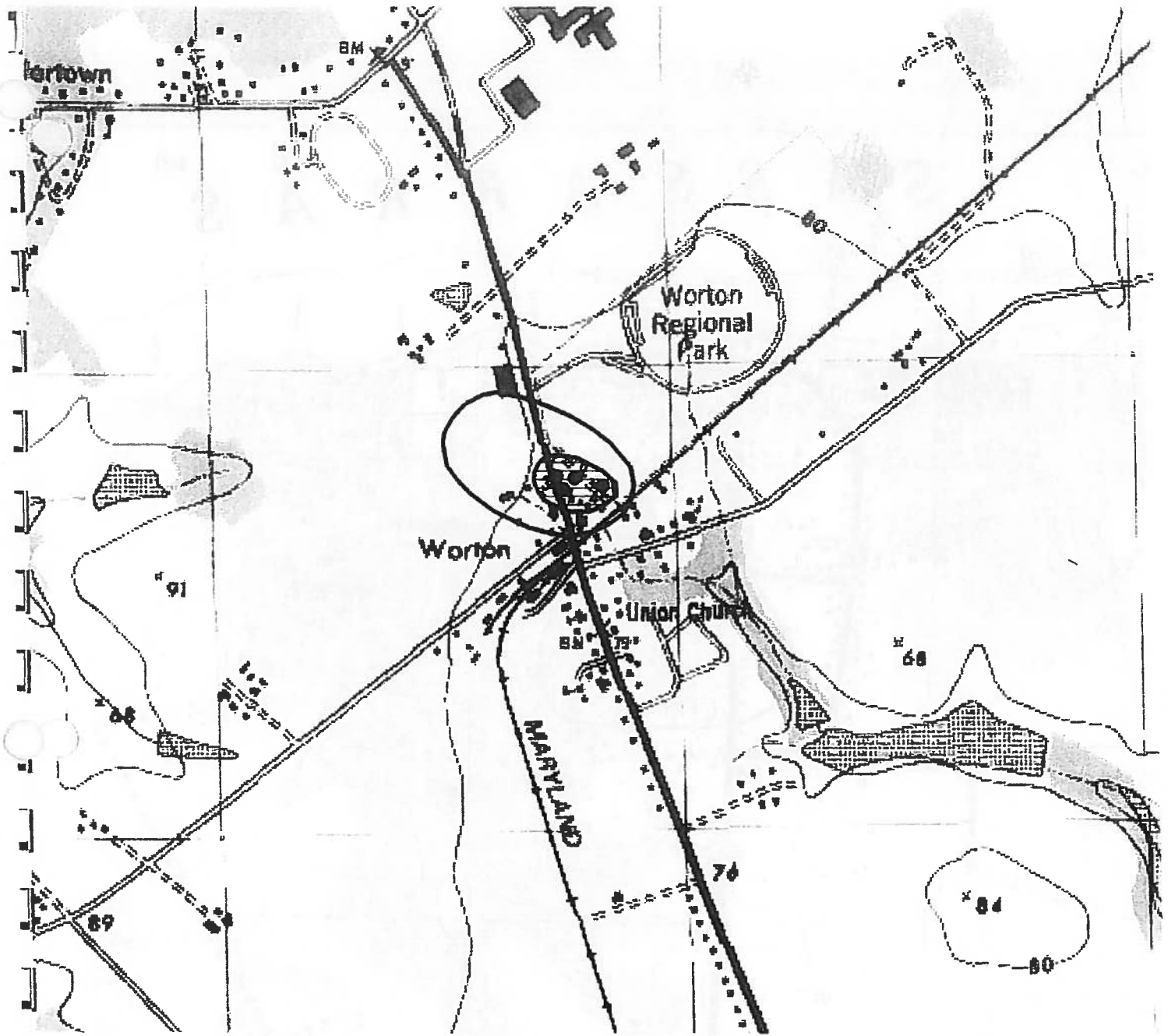
**Figure 2. Kennedyville Wellhead Protection Area with Potential Contaminant Sites**

**LEGEND**

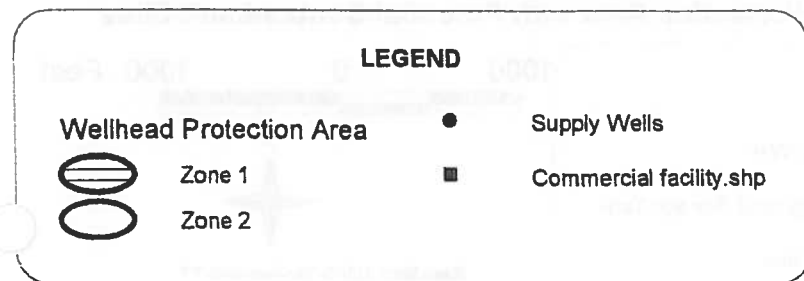
□	Pesticide dealer	●	Supply Well
●	Unused well	○	Wellhead Protection Area
⊙	Underground Storage Tank		



Base Map: USGS Topographic 7.5 Minute Quadrangle - Galena, MD



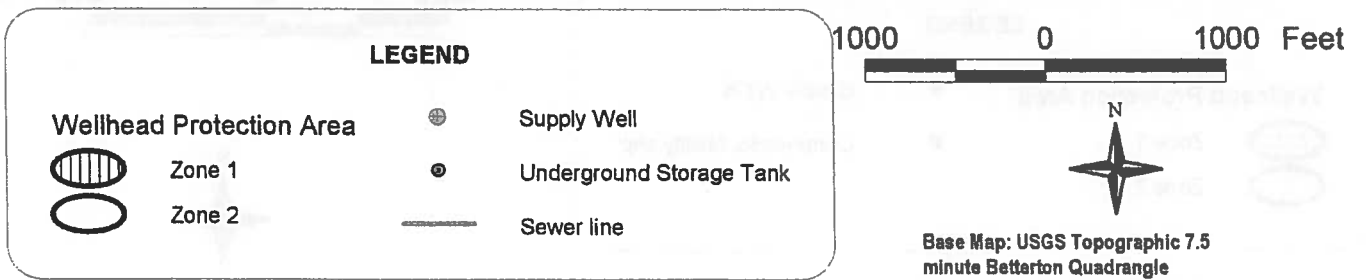
**Figure 2. Worton Wellhead Protection Area with Potential Contaminant Sites**



Base Map: USGS Topographic 7.5 Minute Quadrangle - Betterton, MD



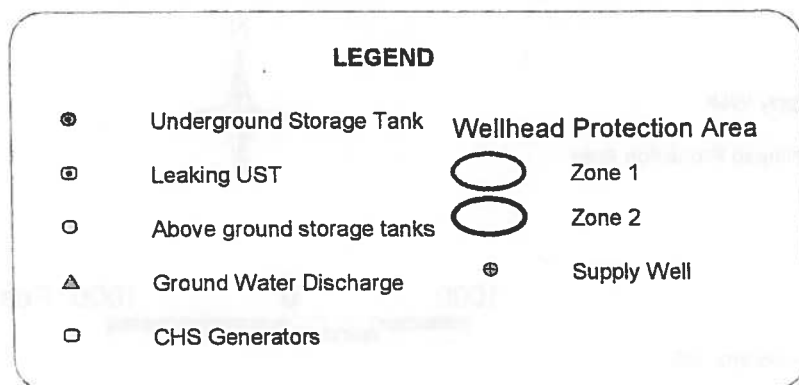
**Figure 2. Betterton Wellhead Protection Area with Potential Contaminant Sites**



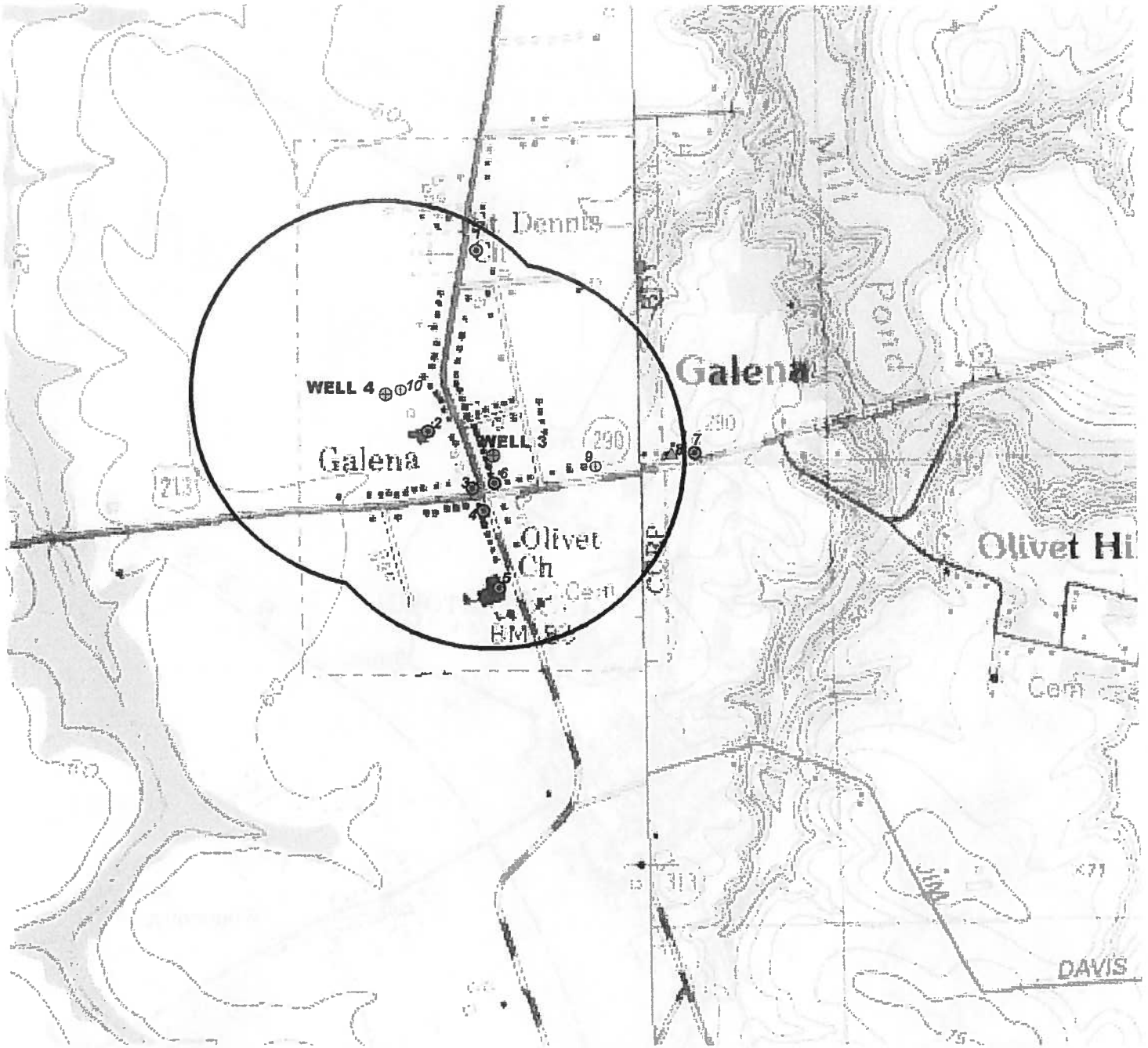




**Figure 2. Chestertown Wellhead Protection Area with Potential Contaminant Sources**



*Base Map: USGS 7.5 Minute  
Chestertown Topographic Quadrangle*



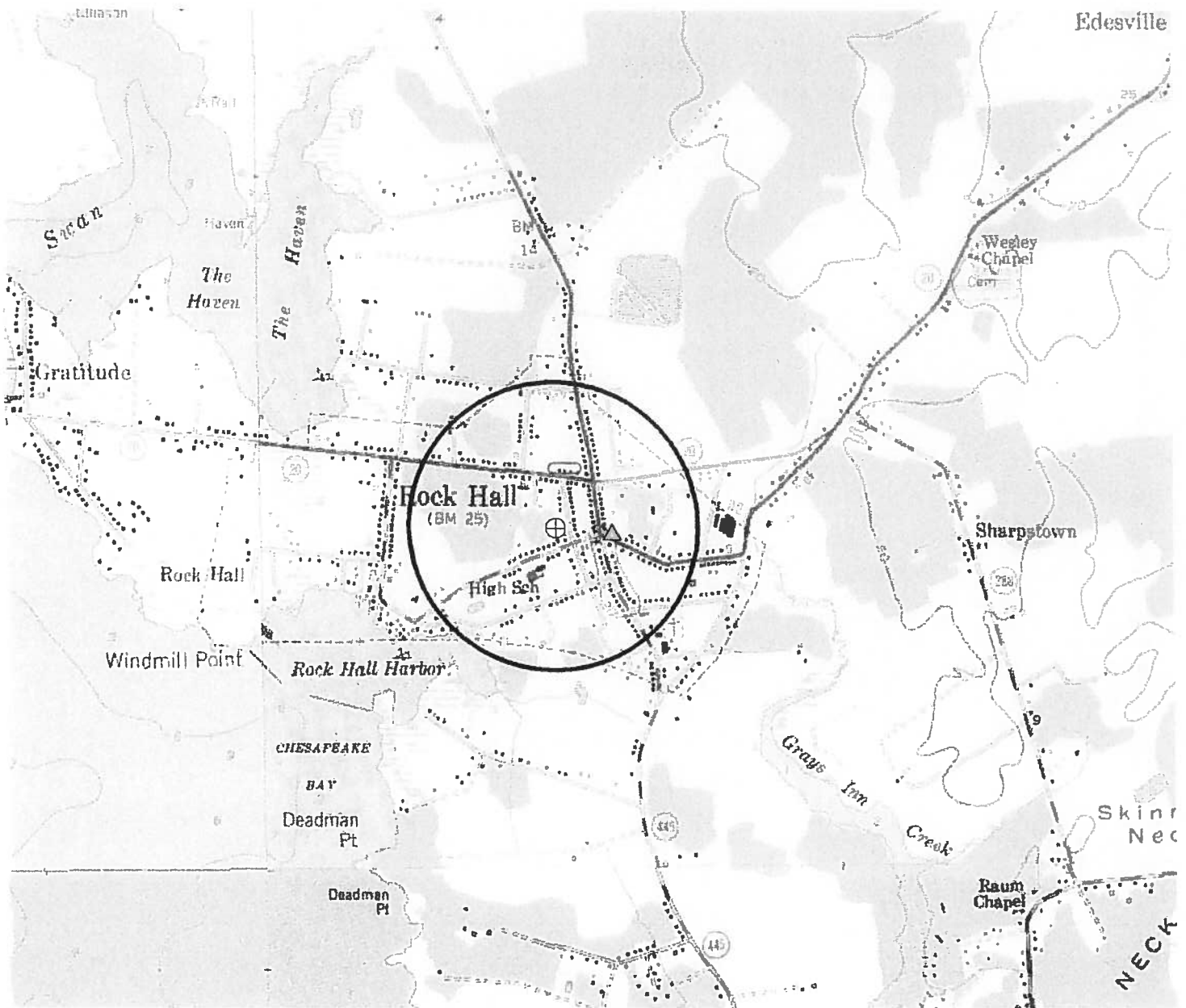
**Figure 2. Galena Wellhead Protection Area with Potential Contaminant Sites**

**LEGEND**

●	Underground Storage Tank	⊕	Supply Well
△	Ground Water Discharge	○	Wellhead Protection Area
⊖	Unused Well		



Base Map: USGS Topographic 7.5 Minute Quadrangle - Galena, MD







**Figure 2. Rock Hall Wellhead Protection Area With Potential Contamination Sites**

2000 0 2000 Feet



**LEGEND**

	Wellhead Protection Area		Ground Water Discharge
	Underground Storage Tank		Well Field



Base Map: USGS Topographic 7.5 Minute Quadrangle - Rock Hall, MD



**APPENDIX 3-C**

**Potentiometric Surface Map of the Aquia Aquifer**



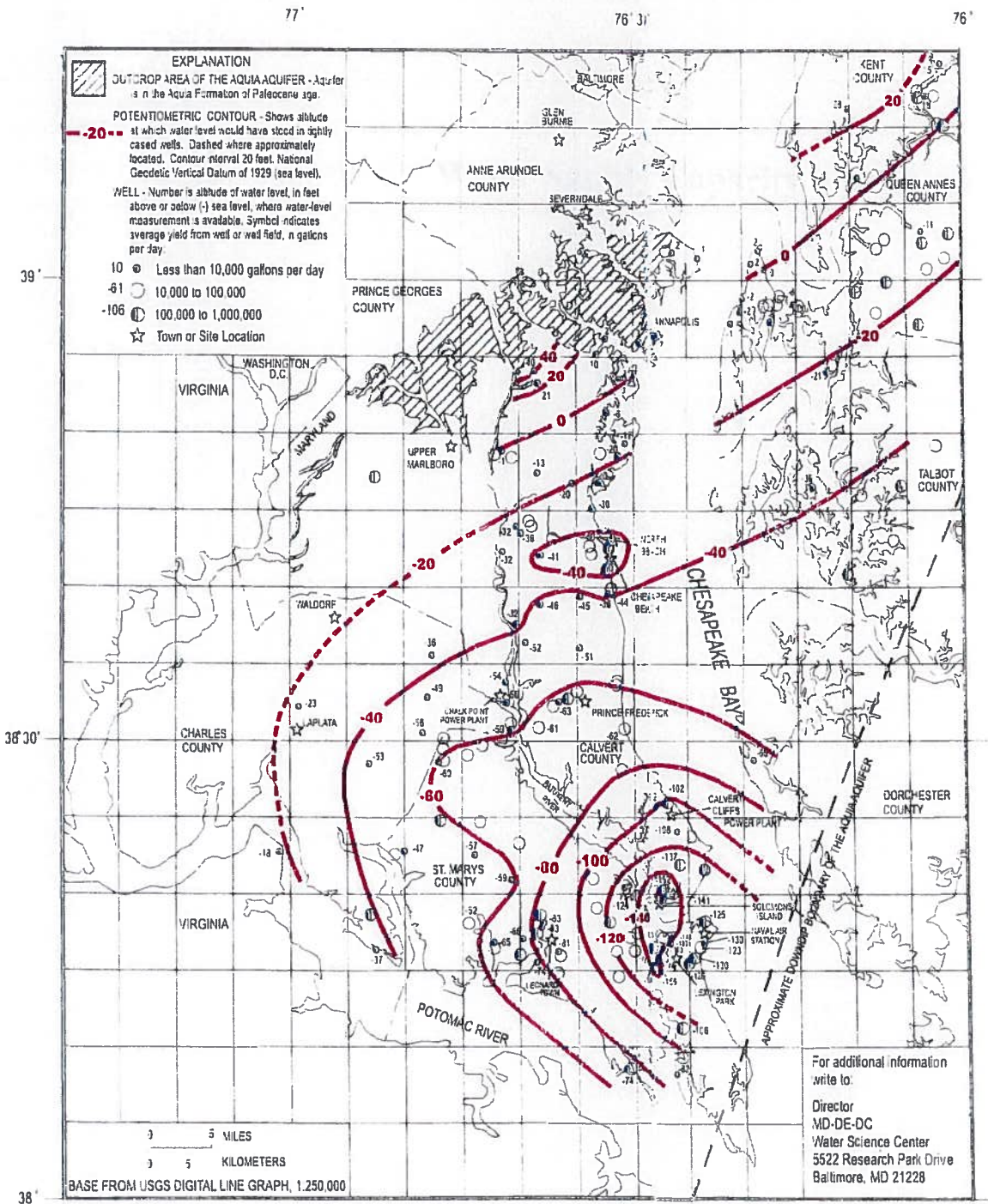


Figure 6. Potentiometric surface of the Aquia aquifer in southern Maryland, September 2003 (modified from Curtin and others, 2005).





# WATER SUPPLY CAPACITY MANAGEMENT PLAN

## Worksheets and Summary

### SYSTEM AND PLAN SUBMITTAL INFORMATION

Name of the water supply system \_\_\_\_\_  
County and municipality, if applicable \_\_\_\_\_  
Population served \_\_\_\_\_  
Number of connections \_\_\_\_\_  
Date of plan submittal to MDE \_\_\_\_\_

#### IV. ELEMENTS OF A WATER SUPPLY CAPACITY MANAGEMENT PLAN

Please refer to the appropriate sections of the *Guidance Document for Water Supply Capacity Management Plans*, pages 10 through 15.

NOTE: gpd = gallons per day; gpcd = gallons per capita per day

##### A. DETERMINE THE EXISTING WATER DEMAND

(See page 11 of the *Guidance Document*)

If better records are not available for items A-3, A-6 and A-8, please use the suggested estimations for these items.

1) Determine the **Annual Average Daily Demand** (gpd)

for each of the previous five years.

2005 \_\_\_\_\_  
2004 \_\_\_\_\_  
2003 \_\_\_\_\_  
2002 \_\_\_\_\_  
2001 \_\_\_\_\_

2) Enter the **greatest Annual Average Daily Demand** (gpd) \_\_\_\_\_ **A-2**  
from A-1.

3) **Annual Average Daily Drought Demand** (gpd), \_\_\_\_\_ **A-3**  
or value in A-2 + 10%.

- 4) Determine the **Average Daily Demand (gpd) During the Month of Maximum Use** in the previous 5 years. Also enter the month of maximum use for each year.

<u>Month</u>	
_____	2005 _____
_____	2004 _____
_____	2003 _____
_____	2002 _____
_____	2001 _____

- 5) Enter the **greatest Average Daily Demand (gpd)** During the Month of Maximum Use from A-4. \_\_\_\_\_ **A-5**

- 6) **Avg. Daily - Max. Month Drought Demand (gpd)**, or value in A-5 + 10%. \_\_\_\_\_ **A-6**

- 7) **Maximum Day Demand (gpd)** for the previous five years and date of Maximum Day Demand. \_\_\_\_\_ **A-7**

- 8) **Maximum Day Drought Demand**, or value in A-7 + 10%. \_\_\_\_\_ **A-8**

- 9) If available, peak hour demand (gph). \_\_\_\_\_

- 10) If available, water usage per capita per day (gpcd). \_\_\_\_\_

- 11) If available, water usage per connection (gpd/connection). \_\_\_\_\_

- 12) If available, water demand (gpd or %) attributable to uses:
- residential \_\_\_\_\_
  - commercial \_\_\_\_\_
  - industrial \_\_\_\_\_

- 13) If available, approximate amount of water (gpd) lost to:
- system losses (leaks) \_\_\_\_\_
  - transfers \_\_\_\_\_
  - meter error \_\_\_\_\_
  - other \_\_\_\_\_

- 14) If available, percentage of customers that are metered. \_\_\_\_\_

**B. ESTIMATE THE POTENTIAL WATER DEMAND OF APPROVED BUT UNDEVELOPED SUBDIVISIONS AND BUILDING PERMITS**

(See page 12 of the *Guidance Document*)

Estimate the **Annual Average Daily Water Demand** (gpd) for approved but undeveloped lots and building permits; and then calculate the **Average Daily Demand During the Maximum Month** and the **Maximum Day Demand** by using peaking factors.

1) **Residential Demand (gpd)** \_\_\_\_\_ **B-1**

If better records are not available, use  
(250 gpd per household) x (Number of approved households)  
to estimate the residential water demand.

2) **Commercial Demand (gpd)** \_\_\_\_\_ **B-2**

3) **Industrial Demand (gpd)** \_\_\_\_\_ **B-3**

4) **POTENTIAL ADDITIONAL DEMAND (gpd) - Annual Average Daily Water Demand**

for undeveloped lots and building permits.  
Add B-1, B-2, and B-3.

\_\_\_\_\_ **B-4**

5) **POTENTIAL ADDITIONAL DEMAND (gpd) - Avg. Daily Demand During the Month of Max. Use**

for undeveloped lots and building permits.  
Multiply B-4 by (1.3 to 1.5 peaking factor)

\_\_\_\_\_ **B-5**

6) **POTENTIAL ADDITIONAL DEMAND (gpd) - Maximum Day Demand**

for undeveloped lots and building permits.  
Multiply B-4 by (1.6 to 2.0 peaking factor).

\_\_\_\_\_ **B-6**

7) **Total Allocations Granted to Date (gpd)**

for undeveloped lots and building permits.

\_\_\_\_\_ **B-7**

**8) Projected Future Allocations (gpd)**

for undeveloped lots and building permits.

Subtract B-7 from B-4 and enter as B-8.

\_\_\_\_\_ **B-8**

**9) Project the allocation schedule for B-8. (or similar phasing schedule)**

When do you anticipate that allocations (gpd) will be requested for approved but undeveloped lots and building permits?

Year 1 _____	Year 6 _____
Year 2 _____	Year 7 _____
Year 3 _____	Year 8 _____
Year 4 _____	Year 9 _____
Year 5 _____	Year 10 _____

**C. DETERMINE THE CAPACITY OF THE WATER SUPPLY SYSTEM**

(See pages 13 and 14 of the *Guidance Document*)

These simplified worksheets are included to aid in the capacity evaluation of a typical small water supply system. If your water supply system has a more complex arrangement, please call the **Water Supply Program at 410-537-3702** for assistance in completing the capacity evaluation.

**1) List all Water Appropriation Permits, permit limits (gpd), and indicate if there are Special Conditions.**

<u>Permit Number</u>	<u>Well Numbers or Source Name</u>	<u>Annual Average</u>	<u>Avg.Day-Max.Month or Maximum Day</u>	<u>Spec. Conditions YES/NO</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

**2) Water Appropriation Permit Limitations.**

For the **groundwater permits** listed above, add the Annual Average Daily permit limits and enter the sum in the space provided; and add the permit limits for the Daily Averages During the Month of Maximum Use and enter the sum in the space provided. For the **surface water permits** listed above, add the Annual Average Daily permit limits and enter the sum in the space provided; and add the Maximum Day permit limits and enter the sum in the space provided.

- a. Ground Water      Sum of Ann. Avg. Daily permit limits (gpd)      \_\_\_\_\_ **2-a**
- b. Ground Water      Sum of Avg. Daily - Max. Month permit limits      \_\_\_\_\_ **2-b**
- c. Surface Water      Sum of Ann. Avg. Daily permit limits (gpd)      \_\_\_\_\_ **2-c**
- d. Surface Water      Sum of Max. Day permit limits (gpd)      \_\_\_\_\_ **2-d**

**3) Do any of the Appropriation Permits include **Special Conditions** that limit the ability of the water system to withdraw the permitted quantities of water?      YES      NO**

If yes, please explain: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**4) Total permitted Annual Average Daily Appropriations (gpd)**

Add 2-a + 2-c above and then reduce the sum if there are any limits required by the Special Conditions. \_\_\_\_\_ **C-4**

**5) Surface water only: Total permitted Max. Day Appropriations (gpd)**

Item 2-d reduced by any limits required by the Special Conditions. \_\_\_\_\_ **C-5**

**6) Ground water only: Total permitted Avg. Daily - Max. Month Appropriations (gpd).** Item 2-b reduced by any limits required

by the Special Conditions. \_\_\_\_\_ **C-6**

**7) Are future modifications to your Appropriation Permits planned or necessary?      YES      NO**

If yes, please explain: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**8) Total well-field capacity of the water system during drought - Average Daily Demand During the Month of Maximum Use (gpd).**

Enter the well-field production for the water system with the best-producing well not in operation (gpd). \_\_\_\_\_ C-8

**9) Safe-yield of the reservoir system.** \_\_\_\_\_ C-9

**10) Enter the total treatment capacity of the water plant (gpd).** \_\_\_\_\_ C-10

**11) Enter the pump capacity (lowest value of either the well pump or high service pump) of the water plant (gpd).** \_\_\_\_\_ C-11

**12) Enter the total system storage capacity in gallons.** \_\_\_\_\_

**13) If available, enter the Fire Flow (gpm) and duration (hours).** \_\_\_\_\_  
\_\_\_\_\_

**14) If available, enter the storage for Fire Flow (gallons).** \_\_\_\_\_

**15) How were the Fire Flow and storage for Fire Flow determined? What was the date (year) of the most recent evaluation for Fire Flow and Fire Storage?** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**16) Discuss the frequency of power outages:** \_\_\_\_\_  
\_\_\_\_\_

**17) Is there a back-up power source for treatment and pumping?** YES NO  
If yes, please describe: \_\_\_\_\_  
\_\_\_\_\_

**18) Identify the wastewater treatment system for the service area of the water supply system and enter its average day capacity (gpd). Is capacity available at this wastewater plant?**  
\_\_\_\_\_  
\_\_\_\_\_

**D. ESTIMATE THE EXCESS WATER SUPPLY CAPACITY AVAILABLE FOR ALLOCATION**

(See page 15 of the *Guidance Document*)

Copy the indicated items from the previous sections/pages.

<b>Average Day Capacity Limitation (gpd)</b>	(NOTE: PF = Peaking Factor)
C-4 - Total permitted Annual Avg. Daily Appropriations	_____
C-8 - Well-field capacity during drought ÷ (1.3 to 1.5 PF)	_____
C-9 - Safe-yield of the reservoir system	_____
C-10 - Treatment capacity	_____
C-11 - Pump capacity	_____
<b>Average Day Capacity Limitation.</b> Of the five factors listed above, enter the most limiting factor (in gpd):	_____ <b>D-1</b>
<b>Excess Average Day Capacity (gpd)</b>	
D-1 - Average Day Capacity Limitation	_____ <b>D-1</b>
A-3 - Average Day Drought Demand	_____ <b>A-3</b>
<b><u>EXCESS AVERAGE DAY CAPACITY</u></b>	
D-1 minus A-3.	_____ <b>D-2</b>

<b>Avg. Daily - Maximum Month Capacity Limitation (gpd)</b> (only for ground water systems)	
C-6 - Total permitted Avg. Day-Max. Month Appropriations	_____
C-8 - Well-field capacity during drought	_____
C-10 - Treatment capacity	_____
C-11 - Pump capacity	_____
<b>Avg. Daily - Max. Month Capacity Limitation.</b> Of the 4 factors listed above, enter the most limiting factor.	_____ <b>D-3</b>
<b>Excess Avg. Daily - Maximum Month Capacity (gpd)</b>	
D-3 - Avg. Daily-Max. Month Capacity Limitation	_____ <b>D-3</b>
A-6 - Avg. Daily-Max. Month Drought Demand	_____ <b>A-6</b>
<b><u>EXCESS AVG. DAILY - MAX. MONTH CAPACITY</u></b>	
D-3 minus A-6.	_____ <b>D-4</b>

**Maximum Day Capacity Limitation (gpd)**

C-5 - Total permitted Max. Day Appropriations (only for surface water systems) \_\_\_\_\_

C-10 - Treatment capacity \_\_\_\_\_

C-11 - Pump capacity \_\_\_\_\_

**Max. Day Capacity Limitation.** Of the three factors listed above, enter the most limiting factor (in gpd): \_\_\_\_\_ **D-5**

**Excess Maximum Day Capacity (gpd)**

D-5 - Max. Day Capacity Limitation \_\_\_\_\_ **D-5**

A-8 - Max. Day Drought Demand \_\_\_\_\_ **A-8**

**EXCESS MAXIMUM DAY CAPACITY**

D-5 minus A-8. \_\_\_\_\_ **D-6**

**SUMMARY OF EXCESS CAPACITY (GPD)**

(Copy the indicated items from the previous sections/pages.)

D-2 Excess Average Day Capacity \_\_\_\_\_ **D-2**

D-4 Excess Avg. Daily-Maximum Month Capacity \_\_\_\_\_ **D-4**

D-6 Excess Maximum Day Capacity \_\_\_\_\_ **D-6**

**SUMMARY OF POTENTIAL ADDITIONAL DEMAND (GPD) FROM APPROVED BUT UNDEVELOPED SUBDIVISIONS AND BUILDING PERMITS**

B-4 Potential Annual Average Daily Demand \_\_\_\_\_ **B-4**

B-5 Potential Avg. Daily Demand During the Max. Month \_\_\_\_\_ **B-5**

B-6 Potential Maximum Day Demand \_\_\_\_\_ **B-6**



**NET EXCESS CAPACITY AVAILABLE FOR ALLOCATION TO NEW GROWTH**

The three net excess values calculated below indicate the **approximate excess capacity (gpd)** available for new growth. If an excess capacity value is a negative number, there is a capacity deficit for that demand category.

**NAME OF THE WATER SUPPLY SYSTEM:** \_\_\_\_\_

**COUNTY AND MUNICIPALITY, IF APPLICABLE:** \_\_\_\_\_  
\_\_\_\_\_

**ANNUAL AVERAGE DAILY CAPACITY**

D-2 Excess Average Day Capacity \_\_\_\_\_ **D-2**  
B-4 Potential Annual Avg. Daily Demand \_\_\_\_\_ **B-4**  
(from approved but undevel. subdivisions/permits)  
**NET EXCESS:** (D-2 minus B-4) \_\_\_\_\_ **gpd**

**AVERAGE DAILY CAPACITY DURING THE MAX. MONTH**

D-4 Excess Avg. Daily-Max. Month Capacity \_\_\_\_\_ **D-4**  
B-5 Potential Avg. Daily Demand During Max. Month \_\_\_\_\_ **B-5**  
(from approved but undevel. subdivisions/permits)  
**NET EXCESS:** (D-4 minus B-5) \_\_\_\_\_ **gpd**

**MAXIMUM DAY CAPACITY**

D-6 Excess Maximum Day Capacity \_\_\_\_\_ **D-6**  
B-6 Potential Maximum Day Demand \_\_\_\_\_ **B-6**  
(from approved but undevel. subdivisions/permits)  
**NET EXCESS:** (D-6 minus B-6) \_\_\_\_\_ **gpd**

**E. CONTROL THE ALLOCATION OF NEW CONNECTIONS TO THE WATER SUPPLY SYSTEM**

(See page 15 of the *Guidance Document*)

- 1) Describe your jurisdiction's Adequate Public Facilities Ordinance (APFO) or comparable statute. (Attach a copy of the APFO regulations or comparable regulations)

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- 2) Describe your jurisdiction's allocation procedures. (Attach a copy of the procedures)

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---

---

- 3) How frequently are periodic allocation tracking reports produced?

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- 4) To whom are these reports distributed?

---

---

- 5) During the plat approval process, which agency (or official) ensures that the water supply system has adequate capacity to serve the proposed development?

---

---

- 6) During the building permit approval process, which agency (or official) ensures that the water supply system has adequate capacity to serve the proposed development?

---

---

- 7) Which agency (or official) controls the allocation of connections to the water supply system?

---

---

**NAME OF THE WATER SUPPLY SYSTEM:** \_\_\_\_\_

**COUNTY AND MUNICIPALITY, IF APPLICABLE:** \_\_\_\_\_

**CONTACT INFORMATION**

List the name, title, address, phone number, fax number, and email address of the elected official or water supply system owner completing this Capacity Management Plan.

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_

Email: \_\_\_\_\_

**CERTIFICATION**

I, \_\_\_\_\_, hereby certify that to the best of my knowledge, the attached Water Supply Capacity Management Plan for (*provide system name*) \_\_\_\_\_ is accurate and complete.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Printed Name: \_\_\_\_\_



**APPENDIX 3-E**

**Water Supply Demand Projections  
for Public Water Treatment Plants (Reserved)**



**APPENDIX 3-G**

**Annual Drinking Water Quality Reports**





# Chestertown Consumer Confidence Report 2016 (MD0140002)

## **Is my water safe?**

We are pleased to present this year's Annual Water Quality Report (Consumer Confidence Report) as required by the Safe Drinking Water Act (SDWA). This report is designed to provide details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. This report is a snapshot of last year's water quality. We are committed to providing you with information because informed customers are our best allies.

## **Do I need to take special precautions?**

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

## **Where does my water come from?**

The sources of our drinking water are the Aquia and Magothy aquifers which lie from 40 to 400 feet below the earth's surface. An aquifer is an underground reservoir of sand saturated with water that can provide significant quantities of water from a well.

## **Source water assessment and its availability**

We have a source water protection plan available from our office that provides more information such as potential sources of contamination.

## **Why are there contaminants in my drinking water?**

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's (EPA) Safe Drinking Water Hotline (800-426-4791). The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity:

microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming; pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses; organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems; and radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities. In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

## How can I get involved?

We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life and our children's future".

Monthly meeting of the Utilities Commission are held on the first Monday of each month at town hall at 7:30pm.

## Additional Information for Lead

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Chestertown Water Treatment Plant is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

## Water Quality Data Table

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of contaminants in water provided by public water systems. The table below lists all of the drinking water contaminants that we detected during the calendar year of this report. Although many more contaminants were tested, only those substances listed below were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions below the table.

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Detect In Your Water	Range		Sample Date	Violation	Typical Source
				Low	High			
<b>Disinfectants &amp; Disinfection By-Products</b>								
(There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants)								
Chlorine (as Cl <sub>2</sub> ) (ppm)	4	4	.8	.3	2.3	2016	No	Water additive used to control microbes
TTHMs [Total Trihalomethanes] (ppb)	NA	80	9.4	4.8	14	2016	No	By-product of drinking water disinfection
<b>Inorganic Contaminants</b>								
Iron (ppm)	2	2	.132	NA	NA	2014	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Copper - source water (ppm)	NA		.08	NA	.8	2014	No	Corrosion of household plumbing systems; Erosion of natural deposits

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Detect In Your Water	Range		Sample Date	Violation	Typical Source
				Low	High			
Fluoride (ppm)	4	4	.73	NA	NA	2014	No	Erosion of natural deposits: Water additive which promotes strong teeth. Discharge from fertilizer and aluminum factories
Nitrate [measured as Nitrogen] (ppm)	10	10	1.4	NA	NA	2016	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
<b>Microbiological Contaminants</b>								
Total Coliform (TCR) (positive samples/month)	0	1	1	NA	NA	2016	No	Naturally present in the environment
<b>Radioactive Contaminants</b>								
Beta/photon emitters (pCi/L)	0	50	8.7	NA	NA	2011	No	Decay of natural and man-made deposits. The EPA considers 50 pCi/L to be the level of concern for Beta particles.
Radium (combined 226/228) (pCi/L)	0	5	2.3	NA	NA	2011	No	Erosion of natural deposits

#### Unit Descriptions

Term	Definition
ppm	ppm: parts per million, or milligrams per liter (mg/L)
ppb	ppb: parts per billion, or micrograms per liter (µg/L)
pCi/L	pCi/L: picocuries per liter (a measure of radioactivity)
positive samples/month	positive samples/month: Number of samples taken monthly that were found to be positive
NA	NA: not applicable
ND	ND: Not detected
NR	NR: Monitoring not required, but recommended.

#### Important Drinking Water Definitions

Term	Definition
MCLG	MCLG: Maximum Contaminant Level Goal: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
MCL	MCL: Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
TT	TT: Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.
AL	AL: Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
Variances and Exemptions	Variances and Exemptions: State or EPA permission not to meet an MCL or a treatment technique under certain conditions.
MRDLG	MRDLG: Maximum residual disinfection level goal. The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
MRDL	MRDL: Maximum residual disinfectant level. The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
MNR	MNR: Monitored Not Regulated
MPL	MPL: State Assigned Maximum Permissible Level

**For more information please contact:**

Contact Name: Robert Sipes  
Address: 118 North Cross Street



## 2017 Annual Drinking Water Quality Report

PWSID 0140006

### Town of Rock Hall

May, 2018

We're pleased to present to you this year's Annual Water Quality Report. This report is designed to inform you about the water quality and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water. Our ground water source is 3 wells which draw from the Magothy Aquifer. The wells range in depth from 308 to 362 feet. These wells are located within the confines of the treatment plant.

We have a source water protection plan available from our office that provides more information such as potential sources of contamination. This plan is also available at the Kent County Public Library located in Chestertown in the 400 block of High Street, or from Maryland Department of the Environment (MDE).

I'm pleased to report that our drinking water is safe and meets federal and state requirements.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

If you have any questions about this report or concerning your water utility, please contact Taylor Walker at the water plant at (410) 639-7610 or Town Hall at (410) 639-7611. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled Utility Board meetings held on the first Monday of each month at the Town Hall at 7:00 pm. Council meetings are held on the second Thursday of the month at Town Hall at 7:30 pm. and are also available to answer your questions.

The Town of Rock Hall routinely monitors for contaminants in your drinking water according to Federal and State laws. This table shows the results of our monitoring for the period of January 1<sup>st</sup> to December 31<sup>st</sup>, 2017. As water travels over the land or underground, it can pick up substances or contaminants such as microbes, inorganic and organic chemicals, and radioactive substances. All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. It's important to remember that the presence of these contaminants does not necessarily pose a health risk.

In this table you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

*Parts per million (ppm) or Milligrams per liter (mg/l)* - one part per million corresponds to one minute in two years or a single penny in \$10,000.

*Parts per billion (ppb) or Micrograms per liter* - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

*Action Level* - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

*Maximum Contaminant Level* - The "Maximum Allowed" (MCL) is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

*Maximum Contaminant Level Goal* - The "Goal"(MCLG) is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

TEST RESULTS						
Contaminant	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
<b>Inorganic Contaminants</b>						
Chlorine (2017)	N	1.3	ppm	4	4	Water Additive used to control microbes
Fluoride (2016)	N	0.4	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
<b>Volatile Organic Contaminants</b>						
<b>Stage 2 Disinfection Byproducts: January 1, 2015 – December 31, 2015</b>						
TTHM (Distribution) (2017) [Total trihalomethanes] range	N	24.5-27.7 26	ppb	0	80	By-product of drinking water chlorination
HAA5 Haloacetic Acid (Distribution) (2017) range	N	3-3.32 3	ppb	0	60	By-product of drinking water chlorination

Note: Test results are for year 2017 unless otherwise noted; all tests are not required annually.

We're proud that your drinking water meets or exceeds all Federal and State requirements. We have learned through our monitoring and testing that some contaminants have been detected. The EPA has determined that your water IS SAFE at these levels.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Town of Rock Hall is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your drinking water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the EPA Safe Drinking Water Hotline at 1-800-426-4791 or at <http://www.epa.gov/safewater/lead>.

**NOTE: Lead, which is tested for triennial (every 3 years) in accordance with Federal and State regulations in Rock Hall's distribution system, was not detected in samples collected in 2017.**

All sources of drinking water are subject to potential contamination by substances that are naturally occurring or man made. These substances can be microbes, inorganic or organic chemicals and radioactive substances. All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

MCL's are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

In our continuing efforts to maintain a safe and dependable water supply it may be necessary to make improvements in your water system. The costs of these improvements may be reflected in the rate structure. Rate adjustments may be necessary in order to address these improvements.

Please call our office if you have questions.

# Town of Galena

## 2017 Drinking Water

### Quality Report



## Important Information About Your Drinking Water

We're pleased to present to you the Annual Water Quality Report for 2017. This report is designed to inform you about the water quality and services we deliver to you every day. Maryland Environmental Service (MES), an Agency of the State of Maryland, operates the water treatment facility and prepared this report on behalf of the Town of Galena.

The Environmental Protection Agency (EPA) regulates Public Water Systems and the contaminants found in water through the implementation of the Safe Drinking Water Act (SDWA). The SDWA sets regulations and guidelines for how public water systems operate and identifies several hundred drinking water contaminants, establishes monitoring frequencies and limitations. The Maryland Department of the Environment (MDE) is responsible for the enforcement of the SDWA and routinely complete Sanitary Surveys as part of their ongoing inspection and monitoring program. MES provides safe dependable operations of the water system and is dedicated to consistently providing high quality drinking water that meets or exceeds the SDWA standards.

If you have any questions about this report or have questions concerning your water utility, please contact **Jay Janney** at 410-729-8350, e-mail [jjann@menv.com](mailto:jjann@menv.com).

### For More Information:

For the opportunity to ask more questions or participate in decisions that may affect your drinking water quality, the Town Council generally meets on the first Monday of each month at 7:00 P.M. at the Town Hall. Or contact:

Barbra A. Shaw, Town Clerk/ Treasurer  
410-648-5151 ext 302

### Inside This Issue:

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**T**he Town of Galena water works consists of two drilled wells in the Patapsco formation. Before the water enters the distribution network, chlorine is added to protect against microbial contaminants. The water is then pumped into two elevated storage towers. The Maryland Department of the Environment has performed an assessment of the source water. A copy of the results is available. Call **Maryland Environmental Service** at 410-729-8350.

**S**ome people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the **Safe Drinking Water Hotline (1-800-426-4791)**.

# Town of Galena Treated Water Quality Report 2017

## Definitions:

- ◆ **Maximum Contaminant Level Goal (MCLG)** - The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- ◆ **Maximum Contaminant Level (MCL)** - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
- ◆ **Action Level** - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow
- ◆ **Treatment Technique (TT)** - A required process intended to reduce the level of a contaminant in drinking water
- ◆ **Turbidity** - Relates to a condition where suspended particles are present in the water. Turbidity measurements are a way to describe the level of "cloudiness" of the water.
- ◆ **pCi/l** - Picocuries per liter. A measure of radiation.
- ◆ **ppb** - parts per billion or micrograms per liter
- ◆ **ppm** - parts per million or milligrams per liter

## Special points of interest:

The water at the Town of Galena is tested for over 120 different compounds. **The Town of Galena's Drinking Water met all of the State and Federal requirements.**

Drinking Water, including bottled water, may reasonably be expected to contain at least small amounts of some compounds. The presence of these compounds does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's

**(EPA's) Safe Drinking Water Act Hotline (1-800-426-4791)**



## Important information Regarding Gross Alpha Emitters:

Alpha emitters are naturally occurring radiations in soil, air and water. These emitters generally occur when certain elements decay or break down in the environment. The emitters enter drinking water through various methods including the erosion of natural deposits. There are no immediate health risks from consuming water that contains gross alpha, however some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer. Currently, the highest level of gross alpha detected is 0.0 pCi/L which is below the 15 pCi/L MCL.



## Town of Galena Treated Water Quality Report 2017

Contaminant	Highest Level Allowed (EPA's MCL)	Highest Level Detected	Ideal Goal (EPA's MCLG)
<b>Regulated at the Treatment Plant</b>			
Barium (2015) Typical Source of Contamination: Erosion of natural deposits	2000 ppb	54.9 ppb (Range: 51.7 - 54.9 ppb)	2000 ppb
Fluoride (2015) Typical Source of Contamination: Water additive which promotes strong teeth	4.0 ppm	0.181 ppm (Range: 0.12 - 0.181 ppm)	4.0 ppm
Combined Radium (226 & 228) (2014 Testing) Typical sources of contaminant: Erosion of natural deposits	5 pCi/l	1.4 pCi/l	0 pCi/l
Gross Beta - (2016 Testing) Typical Source of Contamination: Erosion of natural deposits *EPA considers 50 pCi/L to be the level of concern for beta particles ** Because the beta particle results were below 50 pCi/l, no testing for individual beta particle constituents was required	50 pCi/l*	7.3 pCi/l**	0.0 pCi/l
<b>Regulated in the Distribution System</b>			
Copper (2017 Testing) Typical Source of Contamination: Corrosion of household plumbing fixtures and systems	1300 ppb	267 ppb	1300 ppb
Lead (2017 Testing) Typical Source of Contamination: Corrosion of household plumbing fixtures and systems	15 ppb	3 ppb	0 ppb
Haloacetic Acids (HAA5) (2017 Testing) Source: By-product of drinking water chlorination	60 ppb	2.0 ppb	n/a
Total Trihalomethanes (TTHM) (2017 Testing) Source: By-product of drinking water chlorination	80 ppb	12.1 ppb	n/a
Chlorine Typical Source of Contamination: Water additive to control microbes.	4 ppm	0.77 ppm (Range: 0.52 - 1.09 ppm)	4 ppm

The table above lists all the drinking water contaminants that were detected during the 2017 calendar year. The presence of these compounds in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in the table is from testing done January 1 – December 31, 2017. The State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year.

### Lead Prevention

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Town of Galena is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your drinking water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the **EPA Safe Drinking Water Hotline at 1-800-426-4791** or at <http://www.epa.gov/safewater/lead>.

### Water Security is Everyone's Responsibility

Water system security continues to be an enormously important issue. If you notice suspicious activities in or around local water utilities, such as persons cutting or climbing facility fencing, loitering, tampering with equipment or other similar activities, please contact your local law enforcement agency immediately by dialing 911.

## Sources of Drinking Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

*In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain compounds in water provided by public water systems. We treat our water according to EPA's regulations. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.*

## Fluoride Information:

Federal regulations require that fluoride, which occurs naturally in your water supply, not exceed a concentration of 4.0 mg/l in drinking water. This is an enforceable standard called a Maximum Contaminant Level (MCL), and it has been established to protect the public health. Exposure to drinking water levels above 4.0 mg/l for many years may result, in some cases, of crippling skeletal fluorosis, which is a serious bone disorder.

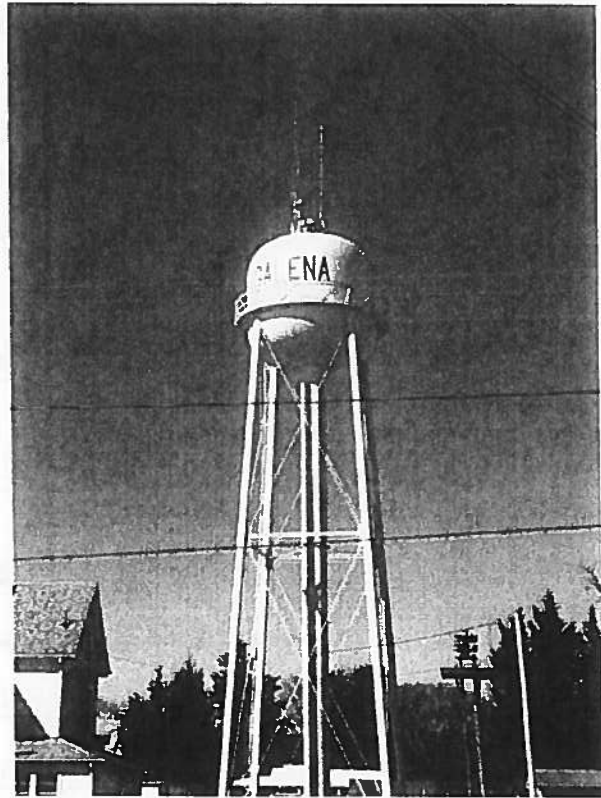
Federal law required that we notify you when monitoring indicates that the fluoride in your drinking water exceeds 2.0 mg/l. This is intended to alert families about dental problems that might affect children under nine years of age. The fluoride concentration of your water exceeds this federal guideline.

Fluoride in children's drinking water at levels of approximately 1 mg/l reduces the number of cavities. However, some children exposed to levels of fluoride greater than about 2.0 mg/l may develop fluorosis. Dental fluorosis, in its moderate and severe forms, is a brown staining and/or pitting of the *permanent* teeth. Because dental fluorosis occurs only when *developing* teeth (before they erupt from the gums) are exposed to elevated levels of fluoride, households without children are not expected to be affected by this level of fluoride. Families with children under the age of nine are encouraged to seek other sources of drinking water for their children to avoid the possibility of staining and pitting.

*If you have any questions about this report or your drinking water, please call Jay Janney at 410-729-8350 or email your request to [jjann@menv.com](mailto:jjann@menv.com).*



**MARYLAND  
ENVIRONMENTAL  
SERVICE**



## *Annual Drinking Water Quality Report for 2017*

### *The Town of Betterton*

PWSID 0140001

June - 2018

We're very pleased to provide you with this year's Annual Quality Water Report. We want to keep you informed about the excellent water and services we have delivered to you over the past year. Our goal is and always has been, to provide to you a safe and dependable supply of drinking water. Our water source is two wells which draw from the Magothy Aquifer.

We're pleased to report that our drinking water is safe and meets all federal and state requirements.

We have a source water protection plan available from our office that provides more information such as potential sources of contamination. This plan is also available at the Kent County Public Library or from Maryland Department of the Environment.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

If you have any questions about this report or concerning your water utility, please contact Marcellus Black at 410-348-5522. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. They are held on the second Tuesday of each month at 7:30 PM in the Betterton Town Hall which is located at 100 Main Street.

The Town of Betterton routinely monitors for contaminants in your drinking water according to Federal and State laws. This table shows the results of our monitoring for the period of January 1<sup>st</sup> to December 31<sup>st</sup>, 2017. As water travels over the land or underground, it can pick up substances or contaminants such as microbes, inorganic and organic chemicals, and radioactive substances. All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. It's important to remember that the presence of these contaminants does not necessarily pose a health risk.

All sources of drinking water are subject to potential contamination by substances that are naturally occurring or man made. These substances can be microbes, inorganic or organic chemicals and radioactive substances. All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

In this table you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

*Parts per million (ppm) or Milligrams per liter (mg/l)* - one part per million corresponds to one minute in two years or a single penny in \$10,000.

*Parts per billion (ppb) or Micrograms per liter* - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

*Picocuries per liter (pCi/L)* - picocuries per liter is a measure of the radioactivity in water.

*Action Level* - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

*Maximum Contaminant Level* - The "Maximum Allowed" (MCL) is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

*Maximum Contaminant Level Goal* - The "Goal"(MCLG) is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

### TEST RESULTS

Contaminant	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
<b>Inorganic Contaminants</b>						
Copper (Distribution) (2016)	N	0.39	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Barium (2015)	N	.0735	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Lead (Distribution) (2016)	N	26	ppb	0	AL=15	Corrosion of household plumbing systems; erosion of natural deposits
Chlorine (2017)	N	0.6	ppm	4	4	Water Additive used to control microbes
Nitrate (as Nitrogen) (2017)	N	4	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
<b>Volatile Organic Contaminants</b>						
<b>Stage 2 Disinfection Byproducts: January 1 – December 30, 2014</b>						
TTM (Distribution) (range and average) (2017) (Total trihalomethanes)	N	2.37	ppb	0	80	By-product of drinking water chlorination
<b>Radioactive Contaminants</b>						
Alpha emitters (2014)	N	8.4	pCi/l	0	15	Erosion of natural deposits
Combined radium (2014) (226 & 228)	N	1.7	pCi/l	0	5	Erosion of natural deposits
<b>Unregulated Contaminants</b>						
Sodium (2012)	N	35.0	ppm	N/A	N/A	Erosion of natural deposits

Note: Test results are for year 2017 unless noted otherwise; testing for all contaminants is not required annually.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Town of Betterton is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your drinking water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the EPA Safe Drinking Water Hotline at 1-800-426-4791 or at <http://www.epa.gov/safewater/lead>.

#### VIOLATIONS

##### Consumer Confidence Rule

Our system received a reporting violation when we were late sending our Consumer Confidence Report Certification to MDE before October 1, 2017.

##### Lead and Copper Rule

Our system received a monitoring violation when we failed to do follow-up sampling for exceeding the Lead action level in 2016. Violation dates were January 1, 2016 and April 1, 2015.

Public Education Violation for the periods of November 30, 2015 to April 17, 2017 and March 3, 2017 to April 17, 2017 when we failed to adequately educate you regarding the health problems associated with and sources of elevated lead levels in our water system.

# Town of Millington 2017 Drinking Water Quality Report



## Important Information About Your Drinking Water

We're pleased to present to you the Annual Water Quality Report for 2017. This report is designed to inform you about the water quality and services we deliver to you every day. Maryland Environmental Service (MES), an Agency of the State of Maryland, operates the water treatment facility and prepared this report on behalf of the Town of Millington.

The Environmental Protection Agency (EPA) regulates Public Water Systems and the contaminants found in water through the implementation of the Safe Drinking Water Act (SDWA). The SDWA sets regulations and guidelines for how public water systems operate and identifies several hundred drinking water contaminants, establishes monitoring frequencies and limitations. The Maryland Department of the Environment (MDE) is responsible for the enforcement of the SDWA and routinely complete Sanitary Surveys as part of their ongoing inspection and monitoring program. MES provides safe dependable operations of the water system and is dedicated to consistently providing high quality drinking water that meets or exceeds the SDWA standards.

If you have any questions about this report or have questions concerning your water utility, please contact **Jay Janney** at 410-729-8350, e-mail [jjann@menv.com](mailto:jjann@menv.com).

### For More Information:

For the opportunity to ask more questions or participate in decisions that may affect your drinking water quality, the Town Council generally meets on the **second Tuesday of each month at 6:30 P.M. at the Town Hall**

### Inside This Issue:

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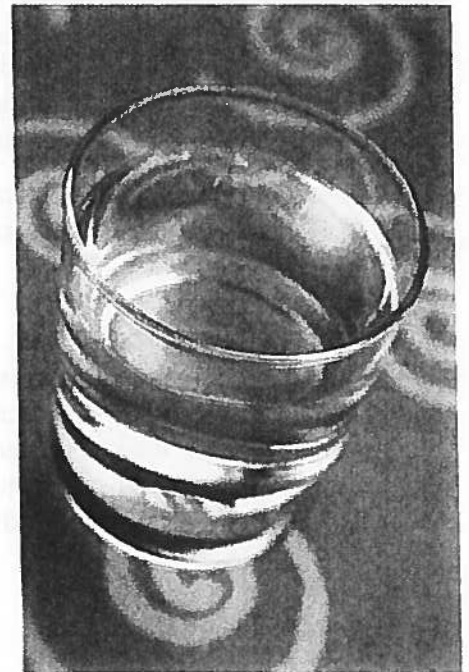
**T**he Town of Millington water works consists of three drilled wells in the Aquia formation. After the water is pumped from the ground, it goes through a water softener filter. Softeners decrease the hardness of the water and reduces iron levels in the water. Before the water enters the distribution network chlorine is added to protect against microbial contaminants. The Maryland Department of the Environment has performed an assessment of the source water. A copy of the results is available. Call **Maryland Environmental Service at 410-**

**S**ome people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the **Safe Drinking Water Hotline (1-800-426-4791)**.

# Town of Millington Treated Water Quality Report 2017

## Definitions:

- ◆ **Maximum Contaminant Level Goal (MCLG)** - The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- ◆ **Maximum Contaminant Level (MCL)** - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
- ◆ **Action Level** - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow
- ◆ **Treatment Technique (TT)** - A required process intended to reduce the level of a contaminant in drinking water
- ◆ **Turbidity** - Relates to a condition where suspended particles are present in the water. Turbidity measurements are a way to describe the level of "cloudiness" of the water.
- ◆ **pCi/l** - Picocuries per liter. A measure of radiation.
- ◆ **ppb** - parts per billion or micrograms per liter
- ◆ **ppm** - parts per million or milligrams per liter



## Special points of interest:

The water at the Town of Millington is tested for over 120 different compounds. The Town of Millington's Drinking Water met all of the State and Federal requirements.

Drinking Water, including bottled water, may reasonably be expected to contain at least small amounts of some compounds. The presence of these compounds does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's

## Important Information Regarding Gross Beta Emitters:

Beta emitters are naturally occurring radiations in soil, air, and water. These emitters generally occur when certain elements decay or break down in the environment. The emitters enter drinking water through various methods including the erosion of natural deposits. There are no immediate health risks from consuming water that contains gross Beta, however some people who drink water containing Beta emitters in excess of the MCL over many years may have an increased risk of getting cancer. Currently, the highest level of gross beta detected is 2 pCi/L which is below the 50 pCi/L MCL.

# Town of Millington Treated Water Quality Report 2017

Contaminant	Highest Level Allowed (EPA's MCL)	Highest Level Detected	Ideal Goal (EPA's MCLG)
<b>Regulated at the Treatment Plant</b>			
Barium (2016 Testing) <small>Source: Water Additive used to control microbes</small>	2000 ppb	29.8 ppb <small>(Range 28.1 ppb - 29.8 ppb)</small>	2000 ppb
Gross Beta - (2008 Testing) <small>Source: Erosion of natural deposits</small> <small>*EPA considers 50 pCi/L to be the level of concern for beta particles</small> <small>** Because the beta particle results were below 50 pCi/L, no testing for individual beta particle constituents was required</small>	50 pCi/l*	2 pCi/l**	0.0 pCi/l
<b>Regulated in the Distribution System</b>			
	MCL	Highest Level	MCLG
Chlorine <small>Source: By-product of drinking water chlorination</small>	4 ppm	1.22 ppm <small>(Range 1.57 ppm - 0.72 ppm)</small>	4 ppm
Haloacetic Acids (HAA5) (2017 Testing) <small>Source: By-product of drinking water chlorination</small>	60 ppb	4.7 ppb	n/a
Total Trihalomethanes (TTHM) (2017 Testing) <small>Source: By-product of drinking water chlorination</small>	80 ppb	15.4 ppb	n/a
<b>Regulated in the Distribution System</b>			
	Action Level	90th percentile	Ideal Goal
Copper (2017 Testing) <small>Source: Corrosion of household plumbing fixtures and systems</small>	1300 ppb	346 ppb	1300 ppb
Lead (2017 Testing) <small>Source: Corrosion of household plumbing fixtures and systems</small>	15 ppb	1.3 ppb	0 ppb

The table above lists all the drinking water contaminants that were detected during the 2017 calendar year. The presence of these compounds in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in the table is from testing done January 1 – December 31, 2017. The State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year.

## Water Conservation

Did you know that the average U.S. household uses approximately 400 gallons of water per day or 100 gallons per person per day? Luckily, there are many low-cost and no-cost ways to conserve water. Small changes can make a big difference—try one today and soon it will become second nature

- ◆ Check for water leaks by the reading your water meter before and after a two hour period when no water is being used in your home. If the reading changes then there is probably a leak in your home.
- ◆ Take a shower! Filling up a bathtub can use up to 70 gallons of water while a shower generally uses 10 to 25 gallons. Taking shorter showers saves even more water.
- ◆ Make sure your washing machine and dishwasher are fully loaded before running.
- ◆ WaterSense labeled fixtures can reduce your water use by 30 percent or more versus standard flow fixtures.

Visit [www.epa.gov/watersense](http://www.epa.gov/watersense) for more information on water efficiency products and methods.

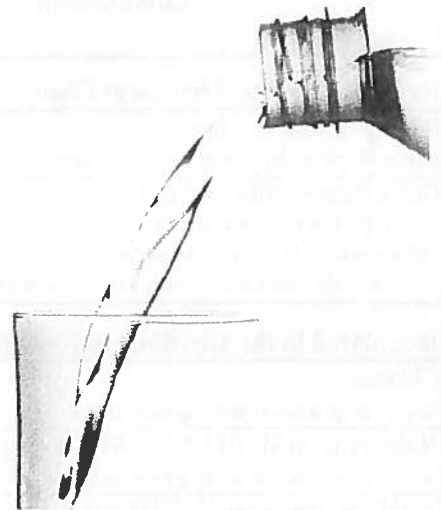
Source: <http://www.epa.gov/watersense> & <http://eartheasy.com>



## Sources of Drinking Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

*In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain compounds in water provided by public water systems. We treat our water according to EPA's regulations. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.*



## Lead Prevention

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Town of Millington is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your drinking water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the **EPA Safe Drinking Water Hotline at 1-800-426-4791** or at <http://www.epa.gov/safewater/lead>.

## Water Security is Everyone's Responsibility

Water system security continues to be an enormously important issue. If you notice suspicious activities in or around local water utilities, such as persons cutting or climbing facility fencing, loitering, tampering with equipment or other similar activities, please contact your local law enforcement agency immediately by dial-

*If you have any questions about this report or your drinking water, please call Jay Janney at 410-729-8350 or email your request to [jjann@menv.com](mailto:jjann@menv.com).*





# ANNUAL DRINKING WATER QUALITY REPORT FOR 2016

KENT COUNTY DEPARTMENT OF  
WATER & WASTEWATER

EDESVILLE WATER SYSTEM

PUBLIC WATER SYSTEM IDENTIFICATION NUMBER  
MD 014-0009 TP 01

May 9, 2017

We are pleased to present to you the *Annual Water Quality Report* for 2016. The purpose of this report is to inform you about the water quality and services we deliver to you every day. Our goal is to provide you, the customer, with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources and that we are committed to ensuring the quality of your water.

The water source for the *Edesville* water system are three (3) groundwater wells located at the Rock Hall water treatment plant site which draw water from the *Magothy Aquifer*. The wells range in depth from 308 to 362 feet.

The Maryland Department of the Environment has performed a source water assessment of the Rock Hall wells, which included a review of water quality data, potential sources of contamination, aquifer characteristics, and well integrity. It was determined from the evaluation that the Rock Hall water supply is not susceptible to microbiological, inorganic, volatile organic or radiological contaminants. The treated water from the Rock Hall water plant undergoes regular analysis for many different compounds and consistently meets all State and Federal requirements.

A copy of the report is available online at [www.MDE.State.MD.US](http://www.MDE.State.MD.US), or the Rock Hall Town office.

Some people may be more vulnerable to contaminants in drinking water than the general population. *Immune-compromised persons* such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791)

Drinking water, including bottled water, may contain at least small amounts of some compounds. The presence of these compounds does not necessarily indicate that water poses a health risk. To obtain more information call the EPA's *Safe Drinking Water Act Hotline (1-800-426-4791)*

The table below lists all the drinking water contaminants detected during the sampling required by the Maryland Department of the Environment. The presence of these compounds in the water does not necessarily indicate that the water poses a health risk.

In this report, you will find many terms and abbreviations that might not be familiar to you. The following definitions explain these terms.

- ♦ **Maximum Contaminant Level Goal (MCLG)** - The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.
- ♦ **Maximum Contaminant Level (MCL)** - The highest level of a contaminant that allowable in drinking water, MCL's are set as close to the MCLG's as feasible using the best available treatment technology.
- ♦ **Maximum residual disinfectant level goal (MRDLG)** - The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
- ♦ **Maximum residual disinfectant level (MRDL)** - The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- ♦ **Action Level (AL)** - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- ♦ **Treatment Technique (TT)** - A required process intended to reduce the level of a contaminant in drinking water.
- ♦ **Turbidity** - Relates to a condition where suspended particles are present in the water. Turbidity measurements are a way to describe the level of "cloudiness" of the water.
- ♦ **Nephelometric Turbidity Units (NTU)** - Units of measurement used to report the level of turbidity or "cloudiness" in the water.
- ♦ **pCi/l** - Picocuries per liter-a measure of radiation.
- ♦ **ppb** - parts per billion or micrograms per liter
- ♦ **ppm** - parts per million or milligrams per liter
- ♦ **Avg** - Regulatory compliance with some MCLs are based on running annual average of monthly samples.

TEST RESULTS								
Copper	12-31-2014	1.3	1.3	0.37		ppm	N	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.

Disinfectants and Disinfection By-Products	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Chlorine	0.8	0.7 - 0.8	MRDLG= 4	MRDL=4	ppm	N	Water additive used to control microbes.
Haloacetic Acids (HAA5) (2014)	12.2	12.2 - 12.2	No goal for the total	60	ppb	N	By-product of drinking water disinfection.
Total Trihalomethanes (TTHM) (2014)	30.3	30.3 - 30.3	No goal for the total	80	ppb	N	By-product of drinking water disinfection.
Inorganic Contaminants	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Fluoride	0.4	0.4 - 0.4	4	4.0	ppm	N	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.

Note: Test results are for year 2016 unless otherwise noted, not all tests are required annually

**Security Statement:** Water system security continues to be an enormously important issue. If you notice suspicious activities in or around local water utilities, such as persons cutting or climbing facility fencing, loitering, tampering with equipment or other similar activities, please contact your local law enforcement agency immediately by dialing 911.

**Water Conservation:** The Department encourages all consumers to practice conservation on a routine basis, and to report any major leaks, or needed repairs to the Department as soon as possible.

**Lead Statement (Not Present):** If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Kent County Department of Water and Wastewater Service is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your drinking water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the EPA Safe Drinking Water Hotline at 1-800-426-4791 or at <http://www.epa.gov/safewater/lead>.

If you should have any questions regarding this report or concerning your water utility, please contact Mr. Greg Swartz, Water and Wastewater Division Chief, at (410) -778-3287. In addition, any resident may obtain a copy of this report at the main office Monday thru Friday during normal business hours.

**NOTE:** As seen by the above listed result, the triennial lead analysis, conducted in accordance with Federal and State regulations, indicate that there is no lead detected in the samples collected from the distribution system in 2016.

# Annual Drinking Water Quality Report

TOWN OF ROCK HALL

MD0140006

Annual Water Quality Report for the period of January 1 to December 31, 2016

This report is intended to provide you with important information about your drinking water and the efforts made by the water system to provide safe drinking water.

The source of drinking water used by TOWN OF ROCK HALL is Ground Water

For more information regarding this report contact:

Name *Terri Johnson*  
 Phone 410-639-7611

Este informe contiene información muy importante sobre el agua que usted bebe. Tradúzcalo a habla con alguien que lo entienda bien.

## Sources of Drinking Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

- Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

- Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at (800) 426-4791.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. EPA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Some people may be more vulnerable to contaminants in drinking water than the general population.

Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. We cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

**Source Water Information**

Source Water Name	Well ID	Type of Water	Report Status	Location
ROCK HALL WELL 3 KE810289	KE810289	GW	Y	NEAR 6 MI ROCK HALL APPROX. 90 FT W OF LIBERTY RD
ROCK HALL WELL 4 KE730440	KE730440	GW	Y	NEAR 0 MI W OF ROCK HALL APPROX. 140 FT W OF LIBERTY ST
ROCK HALL WELL 5 KE811278	KE811278	GW	Y	NEAR 0 MI ROCK HALL APPROX. 50 FT W OF LIBERTY RD

**2016 Regulated Contaminants Detected**

**Lead and Copper**

Definitions: Action Level Goal (ALG): The level of a contaminant in drinking water below which there is no known or expected risk to health. ALGs allow for a margin of safety. Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Lead and Copper	Date Sampled	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Violation	Likely Source of Contamination
Copper	12/31/2014	1.3	1.3	0.37		ppm	N	Erosion of natural deposits; leaching from wood preservatives; Corrosion of household plumbing systems.

**Water Quality Test Results**

Definitions: The following tables contain scientific terms and measures, some of which may require explanation. Regulatory compliance with some MCLs are based on running annual average of monthly samples.

Avg: Level 1 Assessment: A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

Level 2 Assessment: A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

Maximum Contaminant Level or MCL: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal or MCLG: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Maximum residual disinfectant level or MRDL: The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum residual disinfectant level goal or MRDLG: The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

MTCM: millirem per year (a measure of radiation absorbed by the body)

na: not applicable.

ppb: micrograms per liter or parts per billion - or one ounce in 7,350,000 gallons of water.

**Water Quality Test Results**

ppm:

Treatment Technique or ppm:

militigrams per liter or parts per million - or one ounce in 7,350 gallons of water.  
A required process intended to reduce the level of a contaminant in drinking water.

Parameter	Value	Unit	Standard	Notes
Chlorine	1.5	mg/L	4.0	
Chlorine Dioxide	0.1	mg/L	0.5	
Free Chlorine	1.4	mg/L	4.0	
Total Chlorine	1.6	mg/L	4.0	
Chlorine Demand	0.1	mg/L		
Chlorine Residual	1.5	mg/L	0.5	
Chlorine Dioxide Residual	0.1	mg/L	0.5	
Free Chlorine Residual	1.4	mg/L	0.5	
Total Chlorine Residual	1.6	mg/L	0.5	
Chlorine Demand Residual	0.1	mg/L		
Chlorine Residual at 1000 ft	1.5	mg/L	0.5	
Chlorine Residual at 2000 ft	1.4	mg/L	0.5	
Chlorine Residual at 3000 ft	1.3	mg/L	0.5	
Chlorine Residual at 4000 ft	1.2	mg/L	0.5	
Chlorine Residual at 5000 ft	1.1	mg/L	0.5	
Chlorine Residual at 6000 ft	1.0	mg/L	0.5	
Chlorine Residual at 7000 ft	0.9	mg/L	0.5	
Chlorine Residual at 8000 ft	0.8	mg/L	0.5	
Chlorine Residual at 9000 ft	0.7	mg/L	0.5	
Chlorine Residual at 10000 ft	0.6	mg/L	0.5	
Chlorine Residual at 11000 ft	0.5	mg/L	0.5	
Chlorine Residual at 12000 ft	0.4	mg/L	0.5	
Chlorine Residual at 13000 ft	0.3	mg/L	0.5	
Chlorine Residual at 14000 ft	0.2	mg/L	0.5	
Chlorine Residual at 15000 ft	0.1	mg/L	0.5	
Chlorine Residual at 16000 ft	0.0	mg/L	0.5	
Chlorine Residual at 17000 ft	0.0	mg/L	0.5	
Chlorine Residual at 18000 ft	0.0	mg/L	0.5	
Chlorine Residual at 19000 ft	0.0	mg/L	0.5	
Chlorine Residual at 20000 ft	0.0	mg/L	0.5	

**Regulated Contaminants**

Contaminant and By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCL5	MCL	Units	Violation	Likely Source of Contamination
<b>Chlorine</b>		0.9	0.8 - 0.9	MRO5 = 4	MRO5 = 4	ppm	N	Water additive used to control microbes.
<b>Halocetic Acids (HAA5)</b>		8	4.12 - 8.23	No goal for the total	60	ppb	N	By-product of drinking water disinfection
<p><i>Note: All sample results may have been used for calculating the Highest Level Detected because some results may be part of an evaluation to determine where compliance sampling should occur in the future</i></p>								
<b>Halocetic Acids (HAA5)</b>		8	4.12 - 8.23	No goal for the total	60	ppb	N	By-product of drinking water disinfection.
<p><i>Note: All sample results may have been used for calculating the Highest Level Detected because some results may be part of an evaluation to determine where compliance sampling should occur in the future</i></p>								
<b>Halocetic Acids (HAA5)*</b>		8	4.12 - 8.23	No goal for the total	60	ppb	N	By-product of drinking water disinfection.
<p><i>Note: All sample results may have been used for calculating the Highest Level Detected because some results may be part of an evaluation to determine where compliance sampling should occur in the future</i></p>								
<b>Total Trihalomethanes (THM)</b>		35	17.1 - 34.5	No goal for the total	80	ppb	N	By-product of drinking water disinfection
<p><i>Note: All sample results may have been used for calculating the Highest Level Detected because some results may be part of an evaluation to determine where compliance sampling should occur in the future</i></p>								
<b>Total Trihalomethanes (THM)</b>		35	17.1 - 34.5	No goal for the total	80	ppb	N	By-product of drinking water disinfection.
<p><i>Note: All sample results may have been used for calculating the Highest Level Detected because some results may be part of an evaluation to determine where compliance sampling should occur in the future</i></p>								
<b>Inorganic Contaminants</b>	Collection Date	Highest Level Detected	Range of Levels Detected	MCL5	MCL	Units	Violation	Likely Source of Contamination
<b>Fluoride</b>		0.4	0.4 - 0.4	4	4.0	ppm	N	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.



# ANNUAL DRINKING WATER QUALITY REPORT FOR 2016

KENT COUNTY DEPARTMENT OF  
WATER & WASTEWATER

FAIRLEE GEORGETOWN WATER SYSTEM

PUBLIC WATER SYSTEM IDENTIFICATION NUMBER  
MD 014-0003 TP 01

May 9, 2017

We are pleased to present to you the *Annual Water Quality Report* for 2016. The purpose of this report is to inform you about the water quality and services we deliver to you every day. Our goal is to provide you, the customer, with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources and that we are committed to ensuring the quality of your water.

The water source for the *Fairlee/Georgetown* water system are two (2) groundwater wells located at the Fairlee water treatment plant site which draw water from the *Potomac Group Sediments*. The well water is treated by pH adjustment, iron removal, filtration and disinfection processes.

After treatment, the water is stored in a 100,000-gallon water tower located in Fairlee and a 100,000-gallon water tower located in Georgetown. The water towers enhance domestic pressure and add volume for fire suppression purposes.

The Maryland Department of the Environment has performed a source water assessment of the Fairlee Georgetown wells, which included a review of water quality data, potential sources of contamination, aquifer characteristics, and well integrity. It was determined from the evaluation that the Fairlee Georgetown water supply is not susceptible to microbiological, inorganic, volatile organic or radiological contaminants. The treated water from the Fairlee water plant undergoes regular analysis for many different compounds and consistently meets all State and Federal requirements.

A copy of the report is available online at [www.MDE.State.MD.US](http://www.MDE.State.MD.US), the Water and Wastewater Department office at 709 Morgnac Rd., Chestertown, MD 21620 and on the Kent County web site at [kentcounty.com](http://kentcounty.com) in the Consumer Confidence Report section.

Some people may be more vulnerable to contaminants in drinking water than the general population. *Immune-compromised persons* such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791)

Drinking water, including bottled water, may contain at least small amounts of some compounds. The presence of these compounds does not necessarily indicate that water poses a health risk. To obtain more information call the EPA's *Safe Drinking Water Act Hotline* (1-800-426-4791)

The table below lists all the drinking water contaminants detected during the sampling required by the Maryland Department of the Environment. The presence of these compounds in the water does not necessarily indicate that the water poses a health risk.

In this report, you will find many terms and abbreviations that might not be familiar to you. The following definitions explain these terms.

- ◆ **Maximum Contaminant Level Goal (MCLG)** – The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.
- ◆ **Maximum Contaminant Level (MCL)** – The highest level of a contaminant that allowable in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.
- ◆ **Maximum residual disinfectant level goal (MRDLG)** – The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
- ◆ **Maximum residual disinfectant level (MRDL)** – The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- ◆ **Action Level (AL)** – The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- ◆ **Treatment Technique (TT)** – A required process intended to reduce the level of a contaminant in drinking water.
- ◆ **Turbidity** – Relates to a condition where suspended particles are present in the water. Turbidity measurements are a way to describe the level of "cloudiness" of the water.
- ◆ **Nephelometric Turbidity Units (NTU)** – Units of measurement used to report the level of turbidity or "cloudiness" in the water.
- ◆ **pCi/l** – Picocuries per liter-a measure of radiation.
- ◆ **ppb** – parts per billion or micrograms per liter
- ◆ **ppm** – parts per million or milligrams per liter
- ◆ **Avg** – Regulatory compliance with some MCLs are based on running annual average of monthly samples.

TEST RESULTS								
Lead and Copper	Date Sampled	MCL G	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Violation	Likely Source of Contamination
Copper	12 31 2014	1.3	1.3	0.08		ppm	N	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.

Disinfectants and Disinfection By-Products	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Chlorine	1.2	0 - 1.2	MRDLG= 4	MRDL=4	ppm	N	Water additive used to control microbes.
Haloacetic Acids (HAA5)	5	5.47 - 5.47	No goal for the total	60	ppb	N	By-product of drinking water disinfection.
Total Trihalomethanes (TTHM)	14	14.2 - 14.2	No goal for the total	80	ppb	N	By-product of drinking water disinfection.
Inorganic Contaminants	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Arsenic (2015)	1.1	1.1 - 1.1	0	10	ppb	N	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production waste.
Fluoride (2015)	0.2	0.2 - 0.2	4	4.0	ppm	N	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Radioactive Contaminants	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Beta photon emitters (2011)	6.4	6.4 - 6.4	0	50	pCi L	N	Decay of natural and man-made deposits.
Combined Radium 226 228 (2011)	1.1	1.1 - 1.1	0	5	pCi L	N	Erosion of natural deposits.

Note: Test results are for year 2016 unless otherwise noted. not all tests are required annually.

**Security Statement:** Water system security continues to be an enormously important issue. If you notice suspicious activities in or around local water utilities, such as persons cutting or climbing facility fencing, loitering, tampering with equipment or other similar activities, please contact your local law enforcement agency immediately by dialing 911.

**Information Regarding Gross Beta Emitters:** Beta emitters are naturally occurring radiations in soil, air, and water. These emitters generally occur when certain elements decay or break down in the environment. The emitters enter drinking water through various methods including the erosion of natural deposits. There are no immediate health risks from consuming water that contain gross Beta, however some people who drink water containing Beta emitters in excess of the MCL over many years have an increased risk of getting cancer. Currently, the highest level of gross Beta detected is 6.4 pCi L, which is below the 50 pCi L Maximum Contaminate Level.

**Water Conservation:** The Department encourages all consumers to practice conservation on a routine basis, and to report any major leaks, or needed repairs to the Department as soon as possible.

**Lead Statement (Not Present):** If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Kent County Department of Water and Wastewater Service is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your drinking water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the EPA Safe Drinking Water Hotline at 1-800-426-4791 or at <http://www.epa.gov/safewater/lead>.

If you should have any questions regarding this report or concerning your water utility, please contact Mr. Greg Swartz, Water and Wastewater Division Chief, at (410) -778-3287. In addition, any resident may obtain a copy of this report at the main office Monday thru Friday during normal business hours.

**NOTE:** As seen by the above listed result, the triennial lead analysis, conducted in accordance with Federal and State regulations, indicate that there is no lead detected in the samples collected from the distribution system in 2016.

# ANNUAL DRINKING WATER QUALITY REPORT FOR 2016

KENT COUNTY DEPARTMENT OF  
WATER & WASTEWATER

KENNEDYVILLE WATER SYSTEM

PUBLIC WATER SYSTEM IDENTIFICATION NUMBER  
MD 014-0005 TP01

May 9, 2017

We are pleased to present to you the *Annual Water Quality Report* for 2016. The purpose of this report is to inform you about the water quality and services we deliver to you every day. Our goal is to provide you, the customer, with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources and that we are committed to ensuring the quality of your water.

The water sources for the Kennedyville water system are two (2) groundwater wells, which draw water from the *Monmouth Aquifer*. One well is located at the Kennedyville water treatment plant site, the other well is located at the Fire Department on Kennedyville Road. The well water is treated by pH adjustment, filtration and disinfection processes.

After treatment, the water is stored in a 75,000-gallon water tower, which is located at the Kennedyville Water Treatment Plant site. The water tower enhances domestic pressure and adds volume for fire suppression purposes.

The Maryland Department of the Environment has performed a source water assessment of the Kennedyville wells, which included a review of water quality data, potential sources of contamination, aquifer characteristics, and well integrity. It was determined from the evaluation that the Kennedyville water supply is not susceptible to microbiological, inorganic, volatile organic or radiological contaminants. The treated water from the Kennedyville water plant undergoes regular analysis for many different compounds and consistently meets all State and Federal requirements.

A copy of the report is available online at [www.MDE.State.MD.US](http://www.MDE.State.MD.US), the Water and Wastewater Department office at 709 Morgnac Rd., Chestertown, MD 21620 and on the Kent County web site at [kentcounty.com](http://kentcounty.com) in the Consumer Confidence Report section.

Some people may be more vulnerable to contaminants in drinking water than the general population. *Immune-compromised persons* such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Drinking water, including bottled water, may contain at least small amounts of some compounds. The presence of these compounds does not necessarily indicate that water poses a health risk. To obtain more information call the EPA's *Safe Drinking Water Act Hotline* (1-800-426-4791).

The table below lists all the drinking water contaminants detected during the sampling required by the Maryland Department of the Environment. The presence of these compounds in the water does not necessarily indicate that the water poses a health risk.

In this report, you will find many terms and abbreviations that might not be familiar to you. The following definitions explain these terms.

- ◆ **Maximum Contaminant Level Goal (MCLG)** – The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.
- ◆ **Maximum Contaminant Level (MCL)** – The highest level of a contaminant that allowable in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.
- ◆ **Maximum residual disinfectant level goal (MRDLG)** – The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
- ◆ **Maximum residual disinfectant level (MRDL)** – The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- ◆ **Action Level (AL)** – The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- ◆ **Treatment Technique (TT)** – A required process intended to reduce the level of a contaminant in drinking water.
- ◆ **Turbidity** – Relates to a condition where suspended particles are present in the water. Turbidity measurements are a way to describe the level of "cloudiness" of the water.
- ◆ **Nephelometric Turbidity Units (NTU)** – Units of measurement used to report the level of turbidity or "cloudiness" in the water.
- ◆ **pCi/l** – Picocuries per liter-a measure of radiation.
- ◆ **ppb** – parts per billion or micrograms per liter
- ◆ **ppm** – parts per million or milligrams per liter
- ◆ **Avg** – Regulatory compliance with some MCLs are based on running annual average of monthly samples.

TEST RESULTS								
Lead and Copper	Date Sampled	MCL G	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Violation	Likely Source of Contamination
Copper	12/31/2014	1.3	1.3	0.04		ppm	N	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.

Disinfectants and Disinfection By-Products	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Chlorine	0.8	0.8 - 0.8	MRDLG=4	MRDL=4	ppm	N	Water additive used to control microbes.
Haloacetic Acids (HAA5) (2014)	1.1	1.1 - 1.1	No goal for the total	60	ppb	N	By-product of drinking water disinfection.
Total Trihalomethanes (TTHM) (2014)	2.9	2.9 - 2.9	No goal for the total	80	ppb	N	By-product of drinking water disinfection.
Inorganic Contaminants	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Fluoride (2015)	0.1	0.1 - 0.1	4	4.0	ppm	N	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Synthetic organic contaminants including pesticides and herbicides	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Di (2-ethylhexyl) phthalate	1.03	1.03 - 1.03	0	6	ppb	N	Discharge from rubber and chemical factories.

Note: Test results are for year 2016 unless otherwise noted. not all tests are required annually.

**Security Statement:** Water system security continues to be an enormously important issue. If you notice suspicious activities in or around local water utilities, such as persons cutting or climbing facility fencing, loitering, tampering with equipment or other similar activities, please contact your local law enforcement agency immediately by dialing 911.

**Water Conservation:** The Department encourages all consumers to practice conservation on a routine basis, and to report any major leaks, or needed repairs to the Department as soon as possible.

**Lead Statement (Not Present):** If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Kent County Department of Water and Wastewater Service is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your drinking water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the EPA Safe Drinking Water Hotline at 1-800-426-4791 or at <http://www.epa.gov/safewater/lead>.

If you should have any questions regarding this report or concerning your water utility, please contact Mr. Greg Swartz, Water and Wastewater Division Chief, at (410) -778-3287. In addition, any resident may obtain a copy of this report at the main office Monday thru Friday during normal business hours.

**NOTE:** As seen by the above listed result, the triennial lead analysis, conducted in accordance with Federal and State regulations, indicate that there is no lead detected in the samples collected from the distribution system in 2015.





# ANNUAL DRINKING WATER QUALITY REPORT FOR 2016

## KENT COUNTY DEPARTMENT OF WATER & WASTEWATER

### WORTON BUTLERTOWN WATER SYSTEM

PUBLIC WATER SYSTEM IDENTIFICATION NUMBER  
MD 014-0007 TP01

May 9, 2017

We are pleased to present to you the Annual Water Quality Report for 2016. The purpose of this report is to inform you about the water quality and services we deliver to you every day. Our goal is to provide you, the customer, with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources and that we are committed to ensuring the quality of your water.

The water source for the *Worton/Butlertown* water system are two (2) groundwater wells located at the Worton water treatment plant site which draw water from the *Magothy Aquifer*. The well water is treated by pH adjustment, iron removal, filtration and disinfection processes.

After treatment, the water is stored in a 125,000-gallon water tower located in Worton and a 250,000-gallon water tower located in Butlertown. The water towers enhance domestic pressure and add volume for fire suppression purposes.

The Maryland Department of the Environment has performed a source water assessment of the Worton Butlertown wells, which included a review of water quality data, potential sources of contamination, aquifer characteristics, and well integrity. It was determined from the evaluation that the Worton Butlertown water supply is not susceptible to microbiological, inorganic, volatile organic or radiological contaminants. The treated water from the Worton water plant undergoes regular analysis for many different compounds and consistently meets all State and Federal requirements.

A copy of the report is available online at [www.MDE.State.MD.US](http://www.MDE.State.MD.US), the Water and Wastewater Department office at 709 Morgenc Rd., Chestertown, MD 21620 and on the Kent County web site at [kentcounty.com](http://kentcounty.com) in the Consumer Confidence Report section.

Some people may be more vulnerable to contaminants in drinking water than the general population. *Immune-compromised persons* such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Drinking water, including bottled water, may contain at least small amounts of some compounds. The presence of these compounds does not necessarily indicate that water poses a health risk. To obtain more information call the EPA's *Safe Drinking Water Act Hotline (1-800-426-4791)*.

The table below lists all the drinking water contaminants detected during the sampling required by the Maryland Department of the Environment. The presence of these compounds in the water does not necessarily indicate that the water poses a health risk.

In this report, you will find many terms and abbreviations that might not be familiar to you. The following definitions explain these terms.

- ♦ **Maximum Contaminant Level Goal (MCLG)** – The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.
- ♦ **Maximum Contaminant Level (MCL)** – The highest level of a contaminant that allowable in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.
- ♦ **Maximum residual disinfectant level goal (MRDLG)** – The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
- ♦ **Maximum residual disinfectant level (MRDL)** – The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- ♦ **Action Level (AL)** – The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- ♦ **Treatment Technique (TT)** – A required process intended to reduce the level of a contaminant in drinking water.
- ♦ **Turbidity** – Relates to a condition where suspended particles are present in the water. Turbidity measurements are a way to describe the level of "cloudiness" of the water.
- ♦ **Nephelometric Turbidity Units (NTU)** – Units of measurement used to report the level of turbidity or "cloudiness" in the water.
- ♦ **pCi/l** – Picocuries per liter-a measure of radiation.
- ♦ **ppb** – parts per billion or micrograms per liter
- ♦ **ppm** – parts per million or milligrams per liter
- ♦ **Avg** – Regulatory compliance with some MCLs are based on running annual average of monthly samples.

TEST RESULTS								
Lead and Copper	Date Sampled	MCL G	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Violation	Likely Source of Contamination
Copper	12/31/2014	1.3	1.3	0.18		ppm	N	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.

Disinfectants and Disinfection By-Products	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Chlorine	0.9	0.6 - 0.9	MRDLG= 4	MRDL=4	ppm	N	Water additive used to control microbes.
Haloacetic Acids (HAA5)	6	6.16 - 6.16	No goal for the total	60	ppb	N	By-product of drinking water disinfection.
Total Trihalomethanes (TTHM)	7	7.1 - 7.1	No goal for the total	80	ppb	N	By-product of drinking water disinfection.
Inorganic Contaminants	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Fluoride (2014)	0.28	0.28 - 0.28	4	4.0	ppm	N	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Radioactive Contaminants	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Beta photon emitters (2013)	42.7	42.7 - 42.7	0	50	pCi L	N	Decay of natural and man-made deposits.
Combined Radium 226/228 (2013)	0.4	0.4 - 0.4	0	5	pCi L	N	Erosion of natural deposits.
Gross Alpha excluding radon and uranium (2013)	2.1	2.1 - 2.1	0	15	pCi L	N	Erosion of natural deposits.

Note: Test results are for year 2016 unless otherwise noted. not all tests are required annually.

**Security Statement:** Water system security continues to be an enormously important issue. If you notice suspicious activities in or around local water utilities, such as persons cutting or climbing facility fencing, loitering, tampering with equipment or other similar activities, please contact your local law enforcement agency immediately by dialing 911.

**Information Regarding Gross Beta Emitters:** Beta emitters are naturally occurring radiations in soil, air, and water. These emitters generally occur when certain elements decay or break down in the environment. The emitters enter drinking water through various methods including the erosion of natural deposits. There are no immediate health risks from consuming water that contain gross Beta, however some people who drink water containing Beta emitters in excess of the MCL over many years have an increased risk of getting cancer. Currently, the highest level of gross Beta detected is 42.7 pCi L, which is below the 50 pCi L Maximum Contaminate Level.

**Water Conservation:** The Department encourages all consumers to practice conservation on a routine basis, and to report any major leaks, or needed repairs to the Department as soon as possible.

**Lead Statement (Not Present):** If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Kent County Department of Water and Wastewater Service is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your drinking water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the EPA Safe Drinking Water Hotline at 1-800-426-4791 or at <http://www.epa.gov/safewater/lead>

If you should have any questions regarding this report or concerning your water utility, please contact Mr. Greg Swartz, Water and Wastewater Division Chief, at (410) -778-3287. In addition, any resident may obtain a copy of this report at the main office Monday thru Friday during normal business hours.

**NOTE:** As seen by the above listed result, the triennial lead analysis, conducted in accordance with Federal and State regulations, indicate that there is no lead detected in the samples collected from the distribution system in 2016.

**APPENDIX 3-F**

**Water Treatment Plant Summary Tables**



## APPENDIX 3-F: WATER PLANT SUMMARY TABLES

Table 3.5.1 CHESTERTOWN WATER PLANT

**A. Raw Water Sources**

7 Aquia-Monmouth Aquifer & 2 Magothy Aquifer Groundwater Wells

**B. Treatment**

1. Aeration, fluoride treatment, iron removal, and sand filtration.

**B. Storage**

1. 100,000-gallon elevated storage tank
2. 1,000,000-gallon standpipe
3. 350,000-gallon underground reservoir

**C. Permits**

1. Permit No.: KE1970G004 and KE1992G011
2. Daily Average / Year: 975,000 GPD
3. Daily Average / Max Month: 1,300,000 GPD

**D. Service**

1. Chestertown
2. No. of connections: 2,100
3. Approximately 5000 persons served

**E. Actual Production Flow**

1. Average Daily Flow: 713,000 GPD (2015)
2. Maximum Month Flow: 1,100,000 GPD (2015)

**F. Distribution System**

1. Composed of 12, 8 and 6-inch mains with 2 -600 gpm pumps and one 1200 gpm variable flow pump.

**Table 3.5.2 ROCK HALL WATER PLANT**

**A. Raw Water Sources**

3 Magothy Aquifer Groundwater Wells

1. Well # 1
2. Well # 2
3. Well # 3 (new in 2003)

**B. Treatment**

1. Aeration, chlorination, lime and alum addition in conjunction with sand filtration.

**C. Storage**

1. Two 125,000-gallon elevated storage tanks
2. 100,000-gallon elevated storage tank (Edesville, 2008) – County owned and operated

**D. Permits**

1. Permit No.: KE1971G004
2. Daily Average / Year: 230,000 GPD (2017)
3. Daily Average / Max Month: 300,000 GPD

**E. Service**

1. Rock Hall, Edesville county service area, Wesley Chapel Corridor county service area
2. No. of connections
  - a. Rock Hall town limits: 1,183
  - b. Edesville service area: 98
  - c. Wesley Chapel service area: 2
3. Approximately 3,208 persons served

**F. Actual Production Flow**

1. Average Daily Flow: 168,000 GPD (2017)
2. Maximum Peak Flow: 321,000 GPD (2017)

**G. Distribution System**

1. Water mains ranging in size from 2-inch to 12-inch diameter.



**Table 3.5.3 GALENA WATER PLANT**

**A. Raw Water Sources**

2 Magothy Aquifer Groundwater Wells

1. Well # 3
  - has a safe yield of 300 GPM
  - 8-inch diameter
  - drilled to a depth of 470 FT.
2. Well # 4 (new in 2003)
  - has a safe yield of 300 GPM
  - 8-inch diameter
  - drilled to a depth of 500 FT.

**B. Treatment**

1. Chlorination.

**C. Storage**

1. 50,000-gallon elevated storage tank
2. 100,000-gallon elevated storage tank

**D. Permits**

1. Permit No.: KE1971G003-07 (amended on August 5, 2015)
2. Daily Average / Year: 90,000 GPD
3. Daily Average / Max Month: 120,000 GPD

**E. Service**

1. Galena town limits and service area includes 16 residential lots outside the town limits (owned and operated by Town of Galena)
2. No. of connections: 372
3. Approximately 612 persons served

**F. Actual Production Flow**

1. Average Daily Flow: 45,907 GPD (2014)
2. Maximum Peak Flow: 51,307 GPD (2014)

**G. Distribution System**

1. Consists of 6, 8 and 10-inch diameter, PVC mains.

**Table 3.5.4 BETTERTON WATER PLANT**

**A. Raw Water Sources**

2 Magothy Aquifer Groundwater Wells (1969)

1. Well # 1
  - has a safe yield of 80-90 GPM (tested 1987, upgraded 1991)
  - 8-inch diameter
2. Well # 2

**B. Treatment**

1. pH adjustment, calcium hypochlorite solution injection for disinfection, and polyphosphate solution addition as a sequestrant agent.

**C. Storage**

1. 125,000-gallon elevated storage tank (1969)

**D. Permits**

1. Permit No.: KE1979G002
2. Daily Average / Year: 50,000 GPD
3. Daily Average / Max Month: 60,000 GPD

**E. Service**

1. Betterton
2. No. of connections: 285

**F. Actual Production Flow**

1. Average Daily Flow: 30,000 GPD (2017)
2. Maximum Peak Flow: 130,000 GPD (2017)

**G. Distribution System**

1. Consists of approximately 3.5 miles of piping. The total of 3.5 miles consists of: 13,240 feet of 6-inch asbestos cement pipe (transite pipe); 4,197 feet of 2, 4 and 6-inch plastic pipe; 629 feet of 6-inch ductile iron pipe and approximately 400 feet of copper pipe.

**Table 3.5.5 MILLINGTON WATER PLANT**

**B. Raw Water Sources:**

3 Aquia Aquifer Groundwater Wells

1. Well # 1
  - has a safe yield of 190 GPM
  - 10-inch diameter PVC casing
  - 0.03 slot size 6-inch diameter SS screen- 30 FT.
  - drilled to a depth of 200 FT.
  - grouted to approx. 100 FT. depth
2. Well # 2
  - same as Well # 1
3. Well # 3
  - has a yield of 190 GPM
  - 8-inch diameter steel casing – 100 FT.
  - 60 FT. of SS screen
  - Depth of well is 190 FT.
  - grouted to approx. 60 FT. depth

**C. Treatment**

1. Softening of Water & Disinfection.
2. Raw Water is conditioned by Two (2) alternating Softener Treatment Vessels.
3. Sodium Hypochlorite is used as a Disinfectant.

**D. Storage**

1. 125,000-gallon elevated storage tank

**E. Permits**

1. Permit No.: KE2003G001-01
2. Daily Average / Year: 137,000 GPD
3. Daily Average / Max Month: 205,000 GPD

**F. Service**

1. No. of connections: 281 (Town) + 125(County) = 406
1. Approximately 1,015 persons served

**G. Actual Production Flow**

1. Average Daily Flow: 72,374 GPD (year 2017)
2. Maximum Peak Flow: 119,389 GPD (year 2017)

**H. Distribution System**

1. Consists of 12, 10, 8 and 6-inch diameter HDPE pipe.

**Table 3.5.6 KENNEDYVILLE WATER PLANT**

**A. Raw Water Sources**

2 Monmouth Bedrock Wells

1. Well # 1 (near fire station)
  - Permit No. KE670132
  - has a safe yield of 80 GPM
  - 8-inch diameter steel casing
  - 0.03 slot size SS screen- 25 FT.
  - drilled to a depth of 181 FT.
2. Well # 2 (near water treatment plant)
  - Permit No. KE920136
  - has a yield of 110 GPM
  - 8-inch diameter steel casing
  - 20 FT. of SS screen
3. Well # 3 (construction scheduled\*\*) - depth of well is 191 FT.
  - yield of 90 GPM
4. Scheduled upgrade\*\*: new well pump
5. Well # 1 and Well # 2 are pumped on alternate months.
6. An older well that was also near the fire station was abandoned several years ago.

**B. Treatment**

1. Pre-chlorination, with continuous sand filtration.
2. The main water treatment component is a continuous backwashing sand filter rated for 115 GPM manufactured by Andritz – Ruthner, Inc. Model # HSF-19F-SB-SBCS.
3. Upgrade\*:
  - Remove existing Hydra-Sand continuously cleaned filter, chlorine contact tank, clear well, and existing chemical feed equipment that was not in use (i.e. polymer, gas chlorine, and caustic soda). The liquid chlorine system remains in operation.
  - Install new ion exchange water treatment equipment to remove iron and hardness. The ion exchange treatment equipment has a throughput rating of 135 GPM.

**C. Storage**

1. 75,000-gallon elevated storage tank (1997)
2. Future: 50,000-gallon ground storage tank (construction scheduled\*\*)
3. Future: two 215 GPM high service pumps to pump treated water from the ground storage tank into the distribution system or existing elevated water storage tank (construction scheduled\*\*)

**D. Permits**

1. Permit No.: KE1967G008-06
2. Daily Average / Year: 51,800 GPD
3. Daily Average / Max Month: 83,000 GPD

**E. Service**

1. No. of connections: 120
2. Approximately 300 persons served

**F. Actual Production Flow**

1. Average Daily Flow: 17,000 GPD (year 2017)
2. Maximum Peak Flow: 105,000 (year 2017)

**G. Distribution System**

1. Consists of approximately 2-1/2 miles of 6” pipe.

\* Phase 1 of “The Village of Kennedyville developer’s Agreement”

\*\* Phase 2 of “The Village of Kennedyville developer’s Agreement”

**Table 3.5.7 WORTON-BUTLERTOWN WATER PLANT**

**A. Raw Water Sources**

4 Aquia Formation Groundwater Wells (old / sealed) – shallow / in unconfined aquifer

- |                                       |                            |
|---------------------------------------|----------------------------|
| 1. Well # 1                           | 3. Well # 3                |
| - Permit No. KE731164                 | - Permit No. KE731166      |
| - Not in service due to drop in yield | - 65 FT deep, 40 FT casing |
| 2. Well # 2                           | 4. Well # 4                |
| - Permit No. KE731165                 | - Permit No. KE920022      |
| - 65 FT deep, 40 FT casing            | 63 FT deep, 40 FT casing   |

2 - Magothy Aquifer Groundwater Wells (new / in service) – deep / in confined aquifer

- |  |                                     |
|--|-------------------------------------|
| 5. Well # 5                              | - 6-inch diameter SS screen- 50 FT. |
| - has a safe yield of 175 GPM            | - drilled to a depth of 330 FT.     |
| - 8-inch diameter steel casing – 275 FT. | - pump installed at 260 FT.         |
| 6. Well # 6                              | - 6-inch diameter SS screen- 60 FT. |
| - has a safe yield of 150 GPM            | - drilled to a depth of 322 FT.     |
| - 8-inch diameter PVC casing – 260 FT.   | - pump installed at 240 FT.         |

**B. Treatment**

1. pH adjustment, pre-chlorination, flocculation, tube clarification, and green sand filtration.
2. Chemical addition of sodium hypochlorite, caustic soda, and polymer. A FTC-100H by Microfloc Products is used for flocculation & settling. Final Treatment is performed by manganese green sand filters.
3. Existing treatment facility scheduled for upgrade and expansion in 2008.

**C. Storage**

1. 125,000-gallon elevated storage tank
2. 250,000-gallon elevated storage tank

**D. Permits**

1. Permit No.: KE1979G105-03
2. Daily Average / Year: 125,000 GPD
3. Daily Average / Max Month: 175,000 GPD

**E. Service**

1. Service area includes Kent County High and Elementary Schools
2. No. of connections: 399
3. Approximately 998 persons served

**F. Actual Production Flow**

1. Average Daily Flow: 61,000 GPD (year 2017)
2. Maximum Peak Flow: 158,000 (year 2017)

**G. Distribution System**

1. Composed of 2, 6 and 8-inch diameter water mains.

### Table 3.5.8 FAIRLEE WATER PLANT

#### A. Raw Water Sources

2 Groundwater Wells located in the Upper Patapsco Aquifer (Potomac Group)

1. Well # 3
  - Permit No. KE88409
  - has a safe yield of 250 GPM
  - 8-inch diameter steel casing, depth 350 FT.
  - drilled to a depth of 655 FT.
  - Gould's Pump installed at 189 FT.
2. Well # 2
  - Permit No. KE810726
  - has a yield of 165 GPM
  - 8-inch diameter steel casing, depth 320 FT.
  - drilled to a depth of 650 FT.
  - Emergency/ Back-up well has same water quality as well #3
3. Well # 1, an older shallower well, has been abandoned.

#### B. Treatment

1. Aerator, pH adjustment, pre-chlorination, flocculation, tube clarification, and green sand filtration.
2. Pre-Treatment- Induced Aerator by Vulcan Industries - Model # I-42 AP rated for 250 GPM.  
Chemical addition of sodium hypochlorite, caustic soda, and polymer.
3. Static Mixer by Koch
4. Flocculator/Clarifier: FTC- 150H (Microfloc)
5. Final treatment by green sand filters.

#### C. Storage

1. 100,000-gallon elevated storage tank at Fairlee
2. 100,000-gallon elevation storage tank at Georgetown

#### D. Permits

1. Permit No.: KE1979G104(03)
2. Daily Average / Year: 146,000 GPD
3. Daily Average / Max Month: 200,000 GPD

#### E. Service

1. Service includes residences along Caulks Field Road, Woods Edge Apartments and Camp Fairlee Manor
2. No. of connections: 327
3. Approximately 820 persons served

#### F. Actual Production Flow

1. Average Daily Flow: 53,500 GPD (year 2017)
2. Maximum Peak Flow: 166,000 (year 2017)

#### G. Distribution System

1. Consists of 28,300 feet of 6-inch and 8-inch diameter water mains.

**APPENDIX 4-A**

**Wastewater Capacity Management Plan Worksheet (Blank)**





## FLOW CALCULATION TABLES

**Table I - Flow Projection Based Upon Gallons Per Person Per Day**

Type of Establishment	Gallons Per Person Per Day (Unless Otherwise Noted)
Airports (per passenger) .....	5
Apartments-multiple family (per resident) .....	60
Bathhouses and swimming pools.....	10
Camps:	
Campground with central comfort stations.....	35
With flush toilets, no showers .....	25
Day camps (no meals served) .....	15
Resort camps (night and day) with limited plumbing .....	50
Luxury camps .....	100
Cottages and small dwellings with seasonal occupancy .....	50
Country clubs (per resident member).....	100
Country clubs (per non-resident member present).....	25
Dwellings:	
Boarding houses.....	50
additional for non-resident boarders .....	10
Luxury residences and estates .....	150
Multiple family dwellings (apartments) .....	60
Rooming houses.....	40
Single family dwellings.....	75-100
Factories (gallons per person, per shift, exclusive of industrial wastes) .....	35
Hospitals (per bed space) .....	350
Hotels with private baths (2 persons per room).....	60
Hotels without private baths .....	50
Institutions other than hospitals (per bed space).....	125
Laundries, self-service (gallons per wash, i.e., per customer) .....	50
Mobile home parks (per space).....	250
Motels with bath, toilet and kitchen wastes (per bed space) .....	50
Motels (per bed space) .....	40
Picnic Parks (toilet wastes only) (per picnicker) .....	5
Picnic Parks with bathhouses, showers and flush toilets .....	10
Restaurants (per seat) .....	25
Restaurants (toilet and kitchen wastes per patron) .....	10
Restaurants (kitchen wastes per meal served) .....	3
Restaurants, additional for bars and cocktail lounges .....	2

**Table I (Continued)**

<u>Type of Establishment</u>	<u>Gallons Per Person Per Day (Unless Otherwise Noted)</u>
<b>Schools:</b>	
Boarding .....	100
Day, without gyms, cafeterias or showers .....	15
Day, with gyms, cafeterias and showers.....	25
Day, with cafeterias, but without gyms or showers .....	20
Service Stations (per vehicle served).....	10
Swimming pools and bathhouses .....	10
<b>Theaters:</b>	
Movie (per auditorium seat) .....	1
Drive-in (per car space) .....	5
Travel Trailer Parks without individual water and sewer hook-ups (per space) .....	50
Travel Trailer Parks with individual water and sewer hook-ups (per space) .....	100
<b>Workers:</b>	
Construction (at semi-permanent camps).....	50
Day, at schools and offices (per shift).....	15

An alternative method used to project average daily flows generated from commercial establishments, public service buildings, or dwelling units can be figured on the basis of total floor area, number of building units, or service seats multiplied by a statistical factor. Guiding factors are given in Table II.

**Table II - Guiding Factors for Flow Projection Related with Commercial Establishments, Public Service Buildings, or Dwelling Units**

Office Buildings .....	Gross Sq. Ft. x 0.09 = gpd
Medical Office Buildings.....	Gross Sq. Ft. x 0.62 = gpd
Warehouses.....	Gross Sq. Ft. x 0.03 = gpd
Retail Stores .....	Gross Sq. Ft. x 0.05 = gpd
Supermarkets.....	Gross Sq. Ft. x 0.20 = gpd
Drug Stores.....	Gross Sq. Ft. x 0.13 = gpd
Beauty Salons.....	Gross Sq. Ft. x 0.35 = gpd
Barber Shops .....	Gross Sq. Ft. x 0.20 = gpd
Department Store with Lunch Counter.....	Gross Sq. Ft. x 0.08 = gpd
Department Store without Lunch Counter .....	Gross Sq. Ft. x 0.04 = gpd
Banks .....	Gross Sq. Ft. x 0.04 = gpd
Service Stations .....	Gross Sq. Ft. x 0.18 = gpd
Laundries & Cleaners .....	Gross Sq. Ft. x 0.31 = gpd
Laundromats .....	Gross Sq. Ft. x 3.68 = gpd
Car Wash without Wastewater Recirculation Equipment. ...	Gross Sq. Ft. x 4.90 = gpd
Hotels.....	Gross Sq. Ft. x 0.25 = gpd
Motels .....	Gross Sq. Ft. x 0.23 = gpd
Dry Goods Stores .....	Gross Sq. Ft. x 0.05 = gpd
Shopping Centers .....	Gross Sq. Ft. x 0.18 = gpd

Flow projection for country clubs or public parks may be made on the basis of plumbing fixtures.

The related statistical flow figures per unit of plumbing fixture are shown in Table III and Table IV.

**Table III - Flow Projection for Country Clubs**

Type of Fixture	Gallons Per Day Per Fixture
Showers .....	500
Baths.....	300
Lavatories .....	100
Toilets .....	150
Urinals.....	100
Sinks .....	50

**Table IV - Flow Projection for Public Parks**  
(During hours when park is open)

<u>Type of Fixture</u>	<u>Gallons Per Day Per Fixture</u>
Flush toilets .....	35
Urinals .....	10
Showers .....	100
Faucets .....	15

Average Daily Flow

Average daily flow is the arithmetic sum of the average daily domestic flow plus the average daily commercial flow plus the average daily industrial flow plus any other average daily flow from the service area. The average daily commercial, industrial, and other flows shall be based on the period in which these flows are generated.

Peaking of Flows

Peak flow is the average daily domestic flow peaked in accordance with the curve entitled "Diagram for Converting Average Daily Domestic Flow to Peak Flow". (Page 1-7 of the *Design Guidelines for Sewerage Facilities*, Maryland Department of Health and Mental Hygiene, 1978).

Peak commercial or industrial flow is the average daily commercial or industrial flow peaked in accordance with a factor determined by evaluation of historical data for the commercial or industrial facilities and the periods in which these flows are generated.

The average daily domestic flow, average daily commercial flow, and average daily industrial flow may be peaked individually or combined and then peaked using the curve (Page 1-7 of the *Design Guidelines for Sewerage Facilities*) as dictated by the evaluation of the sources and periods in which the flows are generated.

Wherever forced flow applies, peak flow shall be equivalent to the pumping rate.

Infiltration and Inflow

For design purposes, the upper limit of allowable infiltration and inflow within the areas of the project is 400 gallons per acre per day (gpac). Additional allowance for infiltration and inflow may be made upon verification of evidence or approval of operation data.

Design Hydraulic Flow

$$\text{Design Hydraulic Flow} = \text{Peak Flow} + \text{Peak Commercial Flow} + \text{Peak Industrial Flow} + \text{Infiltration and Inflow Allowance}$$

## **EXAMPLES OF ALLOCATION WORKSHEETS AND PROCEDURES**

These ALLOCATION WORKSHEETS and PROCEDURES are provided as examples to use in designing your own forms to collect the required data.

**EXAMPLE**

**Three-year Average Annual Allocations Issued for Customers Served  
by the \_\_\_\_\_ Wastewater Treatment Plant**

<b>S-1 Service Area</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>Three-year Average Annual Total</b>
Within City				
Outside City				
<b>Joint Service Area</b>				

<b>S-1 Service Area</b>	<b>WITHIN CITY</b>		<b>OUTSIDE CITY</b>		<b>JOINT SERVICE AREA</b>	
	<b>Gallons (mgd)</b>	<b>% of Allocation</b>	<b>Gallons (mgd)</b>	<b>% of Allocation</b>	<b>Gallons (mgd)</b>	<b>% of Allocation</b>
<b>2004</b>						
Residential						
Non- residential						
<b>Total</b>						
<b>2005</b>						
Residential						
Non- residential						
<b>Total</b>						
<b>2006</b>						
Residential						
Non- residential						
<b>Total</b>						
<b>2007</b>						
<b>Six-month Reporting Period</b>						
Residential						
Non- residential						
<b>Total</b>						

**EXAMPLE: MONITORING AND CONTROL OF SEWAGE FLOWS  
AND ALLOCATION APPROVALS REPRESENTING FUTURE FLOW**

Facility: \_\_\_\_\_ Date: \_\_\_\_\_

	Area A	Area B	Area C	Area D	Area E
Plat Approvals					
Building Permits					

Available WWTP Capacity					
Additional Capacity in the County W/S Plan					
<b>Total Capacity = AC + W/SPC</b>					
Existing S-1 Flow					
<b>Remaining Available For Plat Commitment = TC - EF gpd</b>					
Record Plat Commitment MGD					
Record Plat Units (EDUs) gpcd					
<b>Effective Record Plat Commitments = RPC/EDUs</b>					
<b>Net Capacity Available For Additional Plats = RAC - RPC</b>					

AC - Available Capacity

W/SPC - Water/Sewer Plan Capacity

TC - Total Capacity

EF - Existing Flow

RPC - Record Plat Commitment

RAC - Remaining Available Ca

(Page 28: This page is intentionally blank)



**EXAMPLE**

**WASTEWATER TREATMENT FACILITY  
AVAILABLE CAPACITY REPORT**

Name of Facility: \_\_\_\_\_

Date: \_\_\_\_\_

Treatment Plant Design Capacity (MGD): \_\_\_\_\_

Permitted Flow Capacity (MGD): \_\_\_\_\_

Less Estimated I&I (MGD): \_\_\_\_\_

Gross Available Capacity:  
in millions of gallons per day (MGD) \_\_\_\_\_ (1)

Less: Plant's previous 3-year average flow in MGD (2004, 2005, 2006) \_\_\_\_\_

Less: Outstanding Service Commitments  
(Current total properties of record) \_\_\_\_\_ (2)

Available Capacity as of January 1, 2007 \_\_\_\_\_ (3)

---

(1) As determined by MDE January 1, 2003

(2) Based upon recording of final plat, 250 GPD per Single Family Home,  
200 GPD for Senior Housing Dwelling, 1,000 GPD per Commercial lot,  
5,000 GPD per Industrial lot.

(3) No more than \_\_\_% of this available capacity to be allocated to one  
applicant, property, subdivision, or project.

(4) Current Number of Vacant Residential Lots of Record \_\_\_\_\_

(5) Current Number of Vacant Commercial Lots \_\_\_\_\_

(6) Current Number of Vacant Industrial Lots \_\_\_\_\_

**EXAMPLE**

**ALLOCATION PROCEDURES**

**ONE TOWN'S RESIDENTIAL SANITARY SEWER TAP SYSTEM  
CONNECTION ALLOCATION PLAN**

1. Sewer system connection (tap) permits can only be applied for by the property owner or with the written permission of the property owner.
2. This plan controls the issuing of new or additional residential taps and/or sanitary sewer system connections or the equivalent thereof as related to flow volumes and/or fixture chart count equivalents.
3. On September 1 (or any date set by the Mayor & Council) of each year, the Town staff will determine the total number of approved and/or buildable residential housing units/lots available for construction (this would be any unit or lot which has met all other requirements necessary to receive a zoning certificate). **(150)**
4. The total number of residential taps and/or sanitary sewer system connections or the equivalents thereof as outlined in item number 3 of this document will be twenty per year. **(20)**
5. An allocation 'tap/connection factor' will be determined as follows: Take the number of taps to be issued **(20)** and divide that number by the total number of approved/building residential housing units/lots as of September 1 **(150)** and the result (0.133333) is the 'tap/connection factor'.

$$20 \div 150 = 0.133333$$

6. Then multiply the 'tap/connection factor' by the total number of approved/buildable residential housing units/lots in any subdivision or approved plan to determine the number of taps available to that subdivision or project for that allocation year (if that product is 0.5 or greater it is rounded up, if the product is less than 0.5 it is rounded down).

$$46 \text{ lots/units} \times 0.133333 = 6.133$$

equals a tap and/or **connection allocation number of six (6)**

7. Residential taps and/or sanitary sewer system connections will be made available on September 15 of each year and those not purchased or reserved by November 15 will become available to other interested parties on December 1 on a first-come, first-served basis.
8. On multiple family projects such as condos, apartments, and town houses, the owner or owners can **apply for their annual allocation** of residential taps and/or sanitary sewer system connections and **reserve (hold)** same for **up to three (3) years** (after which the tap/connection becomes null and void and the deposit is forfeited) **by paying a \$0,000.00 non-refundable deposit fee** (per tap or equivalent thereof) **thereby obtaining the number of taps necessary to construct a multi-unit building or project.** Said deposit fee will be applied to the total tap and/or connection fee and/or associated costs when the tap or taps are issued.

**These Allocation Procedures do not change or alter any other requirement or provision of the tap and/or sanitary sewer system connection process.**



**APPENDIX 4-B**

**Wastewater Demand Projections  
for Public Wastewater Treatment Plants (Reserved)**



**APPENDIX 4-C**

**Sewerage Treatment Plant Summary Tables**





## APPENDIX 4-C: WASTEWATER PLANT SUMMARY TABLES

**Table 4.5.1 CHESTERTOWN WASTEWATER PLANT**  
25792 John Hanson Road, Chestertown, MD 21620

**A. Technology**

1. Oxidation Wave Aeration Technology (2008)

**B. Treatment Process**

- |  |                              |
|--|------------------------------|
| 1. Two Oxidation Wave Aeration Systems | 4. Clarifiers                |
| 2. Screening                           | 5. De-Nitrification Filters  |
| 3. Grit Removal                        | 6. Ultra-Violet Disinfection |

**C. Design & Production Flows**

Design Capacity	1,500,000	GPD
Average Daily Flow (2015)	723,000	Gallons

**D. Permits**

1. NPDES Wastewater Discharge Permit No.: MD0020010
2. State Wastewater Discharge Permit No.: 00-DP-0592
3. Effective Permit Date: July 1, 2003
4. Permit Expiration Date: June 30, 2008
5. Rated Design Flow: 1,500,000 GPD
6. Permitted Flow: 900,000 GPD

**E. Discharge**

- |                                       |   |
|---------------------------------------|---|
| 1. Chester River                      | 3. Tributary Strategy Nitrogen Limit:   |
| a. Protected for shellfish harvesting | 18,273 LB/YR                            |
| 2. Middle Chester Watershed           | 4. Tributary Strategy Phosphorus Limit: |
|                                       | 1,371 LB/YR                             |

**F. Service**

1. Chestertown
2. Areas outside town limits along Md. Rtes 291 and 289, and the Quaker Neck service area are owned and operated by Kent County.
3. No. of connections: 2,507
  - a. Chestertown town limits: 2,300
  - b. Quaker Neck service area: 241
4. Approximately 5000 persons served

**Table 4.5.2 ROCK HALL WASTEWATER PLANT**  
North Main Street and Anderson Avenue, Rock Hall, MD 21661

**A. Technology**

Orbal Biological Treatment Unit (OBT) Envirex, Inc., Siemens Water Technologies

**B. Treatment Process**

1. Screening
2. Grit removal system
3. Oxidation ditch treatment
4. Three (3) clarifiers
5. Aerobic digestors
6. Sludge drying beds
7. Effluent filtration
8. Ultraviolet disinfection
9. Effluent pumping to a new discharge point in Gray's Inn Creek (a tributary to the Chester River)
10. Abandoned lagoon is utilized as a shellfish holding pond

**C. Design & Production Flows**

Design Capacity – annual average daily flow	505,000	GPD
Design Capacity – maximum wet weather monthly flow	590,000	GPD
Average Daily Flow (2015-2017)	242,000	Gallons

**D. Permits**

1. NPDES Wastewater Discharge Permit No.: MD0020303
2. State Wastewater Discharge Permit No.: 13-DP-0575
3. Effective Permit Date: August 1, 2017
4. Permit Expiration Date: July 31, 2022
5. Rated Design Flow: 505,000 GPD
6. Permitted Annual Average Daily Flow: 480,000 GPD

**E. Discharge**

1. Grays Inn Creek
  - a. Designated Use II waters protected for shellfish harvesting
2. Lower Chester Watershed
3. Tributary Strategy Nitrogen Goal: 15,615 LB/YR (Minor Plant)
4. Tributary Strategy Phosphorus Goal: 2,604 LB/YR

**F. Service**

Service Area	Connections (EDUs)	Approximate No. of Persons Served
Town of Rock Hall (within town limits)	1,100	2,700
Green Lane/Spring Cove/ Allen's Lane	136	340
Piney Neck / Skinners Neck / Wesley Chapel	408	1,020
Edesville	107	268
<b>Total</b>	<b>1,751</b>	<b>4,328</b>

**Table 4.5.3 GALENA WASTEWATER PLANT**  
MD.RTE.213 & 290 S.W., Galena, MD 21635

**A. Technology**

Sequencing batch reactor (SBR) Aqua-Aerobics  
Lagoon is now an emergency diversion storage pond

**B. Treatment Process**

1. Screening
2. Grit removal system
3. Chemical phosphorus removal
4. SBR treatment
5. Aerobic digestors
6. Sludge press
7. Effluent denitrification filter
8. Ultraviolet disinfection

**C. Design & Production Flows**

Design Capacity	110,000	GPD
Average Daily Flow 2017	38,000	Gallons

**D. Permits**

1. NPDES Wastewater Discharge Permit No.: MD0020605
2. State Wastewater Discharge Permit No.: 13-DP-0528
3. Effective Permit Date: October 1, 2014
4. Permit Expiration Date: September 30, 2019
5. Rated Design Flow: 110,000 GPD
6. Permitted Flow: 110,000 GPD

**E. Discharge**

1. Dyer Creek
  - a. Designated Use I waters protected for water contact recreation and aquatic life
2. Sassafra Watershed
3. Tributary Strategy Nitrogen Limit: 1,399 LB/YR
4. Tributary Strategy Phosphorus Limit: 101 LB/YR
5. Tributary Strategy TSS Limit: 5,482 LB/YR

**F. Service**

1. Galena and area outside the town limits on Mill Lane
2. No. of connections: 372
3. Approximately 612 persons served

**Table 4.5.4 BETTERTON WASTEWATER PLANT**  
28 Third Avenue, Betterton, MD 21610

**A. Technology**

1. Existing - Contact Stabilization Technology (1969)
2. Future – Sequencing Batch Reactor, Evoqua (start-up October 2018)

**Treatment Process**

1. Existing
  - a. Contact Stabilization
  - b. Secondary clarifier
  - c. Chlorine disinfection
  - d. Sulfur dioxide dechlorination
  - e. Aerobic digester
  - f. Sludge Drying Beds
  
2. Future (estimated completion September 2018)
  - a. Fine influent screening
  - b. Grit removal
  - c. Chemical phosphorus removal
  - d. Sequencing batch reactors
  - e. Denitrification filter
  - f. Ultraviolet disinfection
  - g. Effluent aeration
  - h. Aerobic sludge holding tank
  - i. Sludge Drying Beds

**Design & Production Flows**

Design Capacity - Existing	200,000	GPD
Design Capacity - Future	146,000	GPD
Average Daily Flow 2017	20,000	Gallons

**Permits**

3. NPDES Wastewater Discharge Permit No.: MD0020575
4. State Wastewater Discharge Permit No.: 16-DP-0591
5. Effective Permit Date: Draft permit
6. Permit Expiration Date: Draft permit
7. Permitted Flow
  - a. Existing – 134,000 GPD (based on Tributary Strategy Goals)
  - b. Future – 146,000 GPD

**Discharge**

8. Sassafra River
  - a. Designated as Use II (shellfish harvesting) waters- protected as actual or potential areas for the harvesting of oysters, soft shell clams, hard shell clams, and brackish water clams
9. Sassafra Watershed
10. Tributary Strategy Nitrogen Limit: 1,224 LB/YR
11. Tributary Strategy Phosphorus Limit: 204 LB/YR
12. Tributary Strategy TSS Limit: 12,245 LB/YR

**Service**

- 13. Betterton
- 14. No. of connections: 282
- 15. Approximately 480 persons served

**Collection System**

- 16. 3.7 miles of 4 to 8-inch diameter gravity sewer, 0.77 miles of 2 inch to 6-inch diameter force main and 5 pump stations

**Table 4.5.5 MILLINGTON WASTEWATER PLANT**  
151 Sassafras Street, Millington, MD 21651

**A. Technology**

1. Biolac Treatment Technology (2006), Biological Nutrient Removal (BNR)

**B. Treatment Process**

1. Aerobic Digester
2. Spiral Screen Unit
3. 3 SBR treatment units
4. Biolac Basin
5. Tertiary Fabric Disk Filters
6. UV Disinfection Units
7. Post Aeration Water Basin
8. Aerobic Digester Basin
9. Sludge Drying Beds

**C. Design & Production Flows**

Design Capacity	140,000	GPD
Average Daily Flow	70,000	Gallons
Available Daily Flow	140,000	Gallons

**D. Permits**

1. NPDES Wastewater Discharge Permit No.: MD0020435
2. State Wastewater Discharge Permit No.: 15-OP-0166
3. Effective Permit Date: January 1, 2018
4. Permit Expiration Date: December 31, 2022
5. Rated Design Flow: 140,000 GPD
6. Permitted Flow: 105,000 GPD

**E. Discharge**

1. Chester River
  - a. Designated as Use I water and is protected for water contact recreation and aquatic life
2. Upper Chester Watershed
3. Nitrogen Permitted Loading Limit: 3,342 LB/YR
4. Phosphorus Permitted Loading Limit: 457 LB/YR

**F. Service**

1. Millington, West Millington, Sandfield, Millington Elementary School, Howard Johnson's Restaurant located on U.S. Rt. 301 and Chesterville Forest Road.
2. No. of connections: 281 (Town) + 150(County)
3. Approximately 1,430 persons served

## Table 4.5.6 KENNEDYVILLE WASTEWATER PLANT

11651 Kennedyville Rd

Kennedyville, Kent County, Maryland 21645

### A. Technology

1. Sequencing batch reactor, (SBR) Aqua-Aerobics

### B. Treatment Process

1. Fine influent screening
2. Chemical phosphorus removal
3. Sequencing batch reactors
4. Ultraviolet disinfection
5. Effluent aeration
6. Aerobic sludge holding tanks
7. Sludge press

### C. Design & Production Flows

Design Capacity	60,000	GPD
Average Daily Flow (2015-2017)	11,000	Gallons
Estimated I & I	3,000	Gallons
Available Daily Flow	46,000	Gallons

### D. Permits

1. NPDES Wastewater Discharge Permit No.: MD0052671
2. State Wastewater Discharge Permit No.: 11-DP-1142
3. Effective Permit Date: December 1, 2011
4. Permit Expiration Date: November 30, 2016
5. Rated Design Flow: 60,000 GPD
6. Permitted Flow: 60,000 GPD

### E. Discharge

1. Morgan Creek
  - a. Protected for water contact recreation and aquatic life
2. Middle Chester Watershed
3. Tributary Strategy Nitrogen Limit: 1,399 LB/YR
4. Tributary Strategy Phosphorus Limit: 233 LB/YR

### F. Service

1. Kennedyville
2. No. of connections: 129
3. Approximately 300 persons served

### G. Collection System

1. Gravity system, with three submersible pump stations.

**Table 4.5.7 WORTON/BUTLERTOWN WASTEWATER PLANT**  
25310 Chinquapin Road, Worton, MD 21678

**A. Technology**

1. Membrane Bioreactor System (MRB) / Zenon

**B. Treatment Process**

- |  |  |
|--|--|
| <ol style="list-style-type: none"> <li>1. Influent Screen</li> <li>2. Wet Well</li> <li>3. 2 Aeration Basins with Nitrogen recycle</li> <li>4. 2 Membrane Tanks</li> <li>5. 2 UV Disinfection Units</li> <li>6. Post Aeration</li> <li>7. 2 Aerobic Digesters</li> </ol> | <ol style="list-style-type: none"> <li>8. Sludge Dewatering Press</li> <li>9. Non-Potable Water System</li> <li>10. 4 Storage Lagoons</li> <li>11. Transfer Pump Station</li> <li>12. Effluent Land Application System</li> <li>13. Septage Receiving Station</li> </ol> |
|--|--|

**C. Design & Production Flows**

Design Capacity	250,000	GPD
Average Daily Flow (2015-2017)	70,000	Gallons
Estimated I & I	27,000	Gallons
Available Daily Flow	153,000	Gallons

**D. Permits**

1. NPDES Wastewater Discharge Permit No.: MD0020585
2. State Wastewater Discharge Permit No.: 13-DP-2109
3. Effective Permit Date: December 1, 2018
4. Permit Expiration Date: November 30, 2023
5. Rated Design Flow: 250,000 GPD
6. Permitted Flow: 250,000 GPD

**E. Discharge**

1. Discharges to:
  - a. Outfall 001 -A tributary of Morgan Creek which is designated as Use-I water and is protected for water contact recreation and aquatic life.
  - b. Outfall 002 - Groundwater of the State through spray irrigation
2. Middle Chester Watershed
3. Tributary Strategy Nitrogen Limit: 3,631 LB/YR
4. Tributary Strategy Phosphorus Limit: 457 LB/YR, Proposed 228 LB/YR

**F. Service**

1. Worton and Butlertown.
2. No. of connections: 399
3. Approximately 995 persons served

**G. Collection System**

1. Gravity collection system; with 4 submersible pump stations.



**Table 4.5.8 TOLCHESTER WASTEWATER PLANT**  
22010 Bay Shore Road, Chestertown, MD 21620

**A. Technology**

1. SBR/Jet Technology

**B. Treatment Process**

- |                                   |                         |
|-----------------------------------|-------------------------|
| 1. Rotating Drum Screen           | 6. Post Aeration Basin  |
| 2. 3 SBR treatment units          | 7. Outfall Pump Station |
| 3. Equalization Basin             | 8. Aerobic Digestor     |
| 4. 2 Tertiary Fabric Disk Filters | 9. Sludge Drying Beds   |
| 5. 2 UV Disinfection Units        |                         |

**C. Design & Production Flows**

Design Capacity	265,000	GPD
Average Daily Flow (2015-2017)	57,000	Gallons
Available Daily Flow	196,000	Gallons

**D. Permits**

1. NPDES Wastewater Discharge Permit No.: MD0067202
2. State Wastewater Discharge Permit No.: 12-DP-3105
3. Effective Permit Date: May 1, 2014
4. Permit Expiration Date: April 30, 2019
5. Rated Design Flow: 265,000 GPD
6. Permitted Flow: 265,000 GPD

**E. Discharge**

1. Chesapeake Bay
2. Chesapeake Bay Watershed
3. Tributary Strategy Nitrogen Goal: 5,584 LB/YR
4. Tributary Strategy Phosphorus Goal: 931 LB/YR

**F. Service**

Service Area	Flow (GPD)	Connections (EDUs)	Approximate No. of Persons Served
Tolchester Estates		285	713
Fairlee/Georgetown		334	835
<b>Total</b>	<b>91,000</b>	<b>619</b>	<b>1,548</b>

**G. Collection System**

1. Tolchester Collection system is approximately 41,000 feet of low pressure force main, 24,000 feet of force main, 12,000 feet of outfall pipeline, 2 main pump stations and over 200 individual grinder pumps.
2. Fairlee Collection system is mix of gravity collection system with 5 pumping stations and low-pressure collection systems with individual grinder pumps.



**APPENDIX 4-D**

**Worton Upgrade Information**



#### **4.5.7 WORTON / BUTLERTOWN**

Worton Collection System Improvements, Phase 3 of the Worton Water/Wastewater improvement projects: This project is the final phase of the upgrading of the public water system and wastewater system identified in the 2001 and 2005 engineering reports prepared by McCrone Engineering. The first two phases which included the water plant upgrade, construction of second elevated water storage tank, upgrading the wastewater plant have been completed. The final phase involves upgrading the existing pumping stations, correcting existing deficiencies in collections system leading to the wastewater plant and establishing a path for future growth in the Worton.

In February of 2012, the engineering report update for Phase 3 was completed, discussed with the county commissioners, and sent to MDE and USDA for review and comments. The updated report recommended proposed correction actions as follows: constructing a new pump station PS #5 along Worton Road, making minor improvements to PS #1 and PS #2, upgrading the influent pumps at the wastewater plant to 1000 gpm, installing 7,550 feet of 8-inch force main from the new PS #5 to the head of the wastewater plant. This force main will bypass the PS #2, the deficient gravity collection system in Worton Road and PS#1. By constructing the PS #5 the required capacities at PS #1 and #2 are drastically decreased and the improvements at these sites will be limited to pump downsizing, generator replacement, pump around connections, and controls.

Construction of the new pump station #5 will also intercept all of the flows prior to draining under the water treatment plant as recommended by the Kent County Environmental Health Department. Because most of the collection area for PS #2 will be diverted into PS #5 the excess inflow seen during storm events at Station 2 should be a thing of the past. Station PS #5 with its large storage capacity and direct connection to the wastewater plant will be able to pump the high flows directly to plant where they can be diverted to a lagoon for future treatment.

This project is planned for construction when additional funding becomes available or when development occurs.



**APPENDIX 4-E**

**Tolchester Service Area Map**





**KENT COUNTY DEPARTMENT OF  
WATER AND WASTEWATER SERVICES**

709 MORGNEC ROAD, STE.201  
CHESTERTOWN, MD 21620  
PHONE 410-778-3287  
FAX 410-778-7487

WAYNE L. MORRIS  
DIRECTOR  
wmorris@kentgov.org

KARL H. WEED, P.E.  
DEPUTY DIRECTOR  
kweed@kentgov.org

February 10, 2009

Mr. Larry Folgelson  
Maryland Department of Planning  
301 West Preston St., Suite 1101  
Baltimore, MD 21201-2305

**RE: TOLCHESTER ADMINISTRATIVE CHANGE TO THE KENT COUNTY  
WATER AND SEWERAGE COMPREHENSIVE PLAN**

Dear Mr. Folgelson:

Please find enclosed a letter dated February 2, 2009 to Mr. Ray Anderson of the Maryland Department of the Environment, a map depicting the TDDA contiguous properties and page 15 of the Water and Sewerage plan modified in red letters as described in the above mentioned letter. Please use this information for your records and files associated with this minor administrative change.

We received an email from Ray notifying us that the letter and map outlining the minor adjustment was approved and we could proceed with allowing the three properties if correct. Should you have any questions please call the office at 410-778-3287.

Sincerely,

Wayne L. Morris  
Director

WLM/tm

enclosures

cc: Mr. Ray E. Anderson, Sr. P.E.  
Karl Weed

**KENT COUNTY DEPARTMENT OF  
WATER AND WASTEWATER SERVICES**

709 MORGENTHAU ROAD, SUITE 201  
CHESTER TOWN, MD 21611  
PHONE 410-775-3287  
FAX 410-775-3143

Wayne L. Morris  
Director  
www.kcwa.org

Karl H. Weed, P.E.  
District Director  
www.kcwa.org

February 2, 2009

Mr. Ray E. Anderson, Sr. P.E.  
Maryland Department of the Environment  
1800 Washington Blvd.  
Baltimore, MD 21230


Dear Mr. Anderson;

This letter is being prepared to clarify the Kent County Commissioners intent and to provide a minor adjustment to the April 1, 2008 amendment to the Tolchester Service Area of the Kent County Water and Sewerage Comprehensive Plan. In response to the residents request for additional sewer allocations and the Commissioners desire to maximize the system capacity and potentially help keep user fees at a minimum, the last line of the final paragraph will read...within "and/or contiguous to the".

This minor change will enable individuals on the fringe of the TDDA which meet all other criteria to help maximize the system capacity and potentially lower county costs associated with running the system. The TDDA was established as a tool to prioritize growth and now is being slightly expanded to maximize system capacity in an orderly fashion. Many areas located within the TDDA will never be able to have sewage service due to the capacity of the sewer lines in these areas. Currently there are three properties which are located on Texas Avenue (Fernwalt), Kansas Avenue (Grussin), and Oak Street (Barnhardt) that are being evaluated based on system capacity.

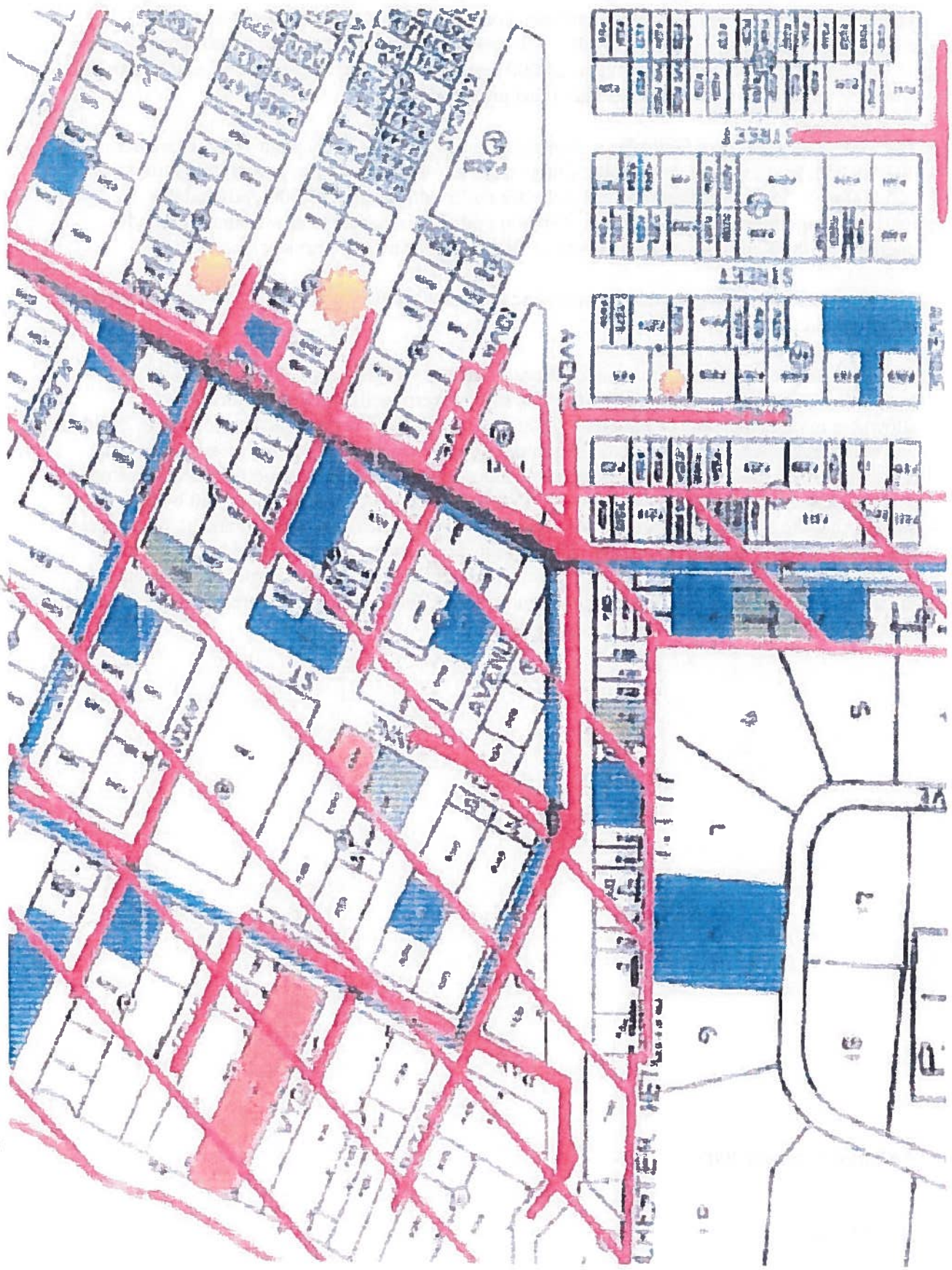
We hope that this letter will provide you with the information required to implement this administrative change to the Kent County Water and Sewerage Comprehensive Plan.

Sincerely,



Wayne L. Morris  
Director

cc: Karl H. Weed

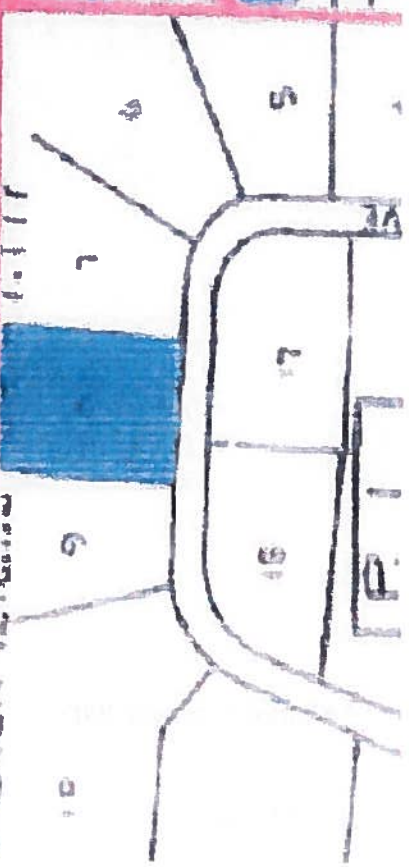


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#### 4.2.2.8 TOLCHESTER SERVICE AREA

The Kent County Sanitary District completed construction of the Tolchester wastewater collection and treatment system in 1996. The collection system consists of approximately 41,000 feet of low pressure force main, 24,000 feet of force main, 12,000 feet of outfall pipeline, 2 main pump stations and over 200 individual grinder pumps.

The Tolchester treatment facility is a sequencing batch reactor (SBR) plant with ultraviolet disinfection, post aeration and aerobic sludge digester. The facility has a total design flow of 265,000 gpd. The system serves the Tolchester collection system (85,000 gpd) and the Fairlee/Georgetown collection system (180,000 gpd). This system is now maintained and operated by the Kent County Department of Water & Wastewater Services.

A request to increase the original growth allocation of 40 EDUs to 50 EDUs has been approved by MDE and the county.

After requests for additional sewer allocations, the county engaged McCrone, Inc. to conduct a hydraulic study of the collection system. The study determined additional allocations were allowable in certain areas. In March of 2008, the County, with the concurrence of MDE, decided that additional sewer allocations could be granted for the Tolchester service area provided that (1) the owner(s) of the property seeking such allocation established through the McCrone study, or through another hydraulic study performed at the owner's expense and accepted by the county, that the county's existing sewer lines would not need to be extended; and no upgrades to the county's sewer system, including but not limited to the sewer lines, would be needed or necessary; and (2) the property must otherwise meet all applicable laws, regulations and criteria including being located within and/or contiguous to the designated growth area shown on the Tolchester Delineated Development Area Map.

Amended February 2009

2005 Update

**APPENDIX 4-F**

**Edesville Service Area Map**



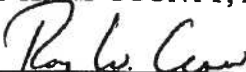
**RESOLUTION**

**AMENDMENT TO THE COMPREHENSIVE WATER AND SEWERAGE PLAN  
EDESVILLE SERVICE AREA**

The County Commissioners of Kent County, Maryland hereby amend the Comprehensive Water and Sewerage Plan to include the proposed extension of the existing water and sewer lines from the end of the existing service area on Lover's Lane to serve 11 properties approximately 0.5 miles along Lover's Lane in the Fifth Election District. The County Commissioners propose to extend the existing water and sewer lines to serve 11 lots which have been declared to have/had failing septic systems. Notwithstanding the policy on denied access lines in section I.9 of this plan, access will be granted only for parcels #21, #22, #41, #50, #51, #52, #53, #57, #100, #136, #154 and is denied to all other parcels including agricultural parcels adjoining the service area right of way and any future lots that may be subdivided after the date of this amendment from parcel #18.

This amendment shall take effect on the 2nd day of December, 2008, the date of adoption by the Board of County Commissioners.

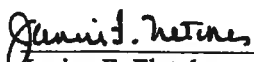
THE COUNTY COMMISSIONERS  
OF KENT COUNTY, MARYLAND

  
\_\_\_\_\_  
Roy W. Crow, President

  
\_\_\_\_\_  
Ronald H. Fithian, Member

  
\_\_\_\_\_  
William W. Pickrum, Member

ATTEST

  
\_\_\_\_\_  
Janice F. Fletcher  
Executive Assistant

### 3.3.2.4 EDESVILLE SERVICE AREA

The County Commissioners own a water supply system in the Edesville area serving approximately 84 users. The system is operated by the Kent County Department of Water & Wastewater Services. The original water supply system has been abandoned.

In 2007, the county constructed a new 100,000 gallon elevated storage tank at Edesville Park and connected the water system to Rock Hall's water system on a permanent basis.

In December of 2007, it was decided to extend water and sewer lines along Lover's Lane to serve 11 lots which have been declared to have/had failing septic systems. Notwithstanding the policy on denied access lines in section I.9 of this plan, access will be granted only for parcels #22, #41, #136, #154, #21, #50, #51, #52, #53, #57, #100 and is denied to all other parcels including agricultural parcels adjoining the service area right of way and any future lots that may be subdivided after the date of this amendment from parcel #18.

The county is proposing to request a combination of grant/loan funding from Rural Development and/or MDE to pay for extension of both water and sewer lines.



#### 4.2.2.4 EDESVILLE SERVICE AREA

The County Commissioners owned a wastewater treatment facility designed to serve approximately 225 users in the Edesville area. A small affordable income housing project, Edesville East, was recently added to the system. The system was operated by the Kent County Department of Water & Wastewater Services.

The system consists of a small diameter gravity collection system with pump stations and a land treatment system. Septic tanks are installed at each connection and serve as primary treatment. Clarified sewage effluent is collected and directed to a two cell lagoon for natural aeration. The effluent is chlorinated and discharged to a ridge and furrow land treatment area where the effluent is treated through continuous aeration, absorption, evapotranspiration and evaporation. Furrows and ridges will be grass and trees.

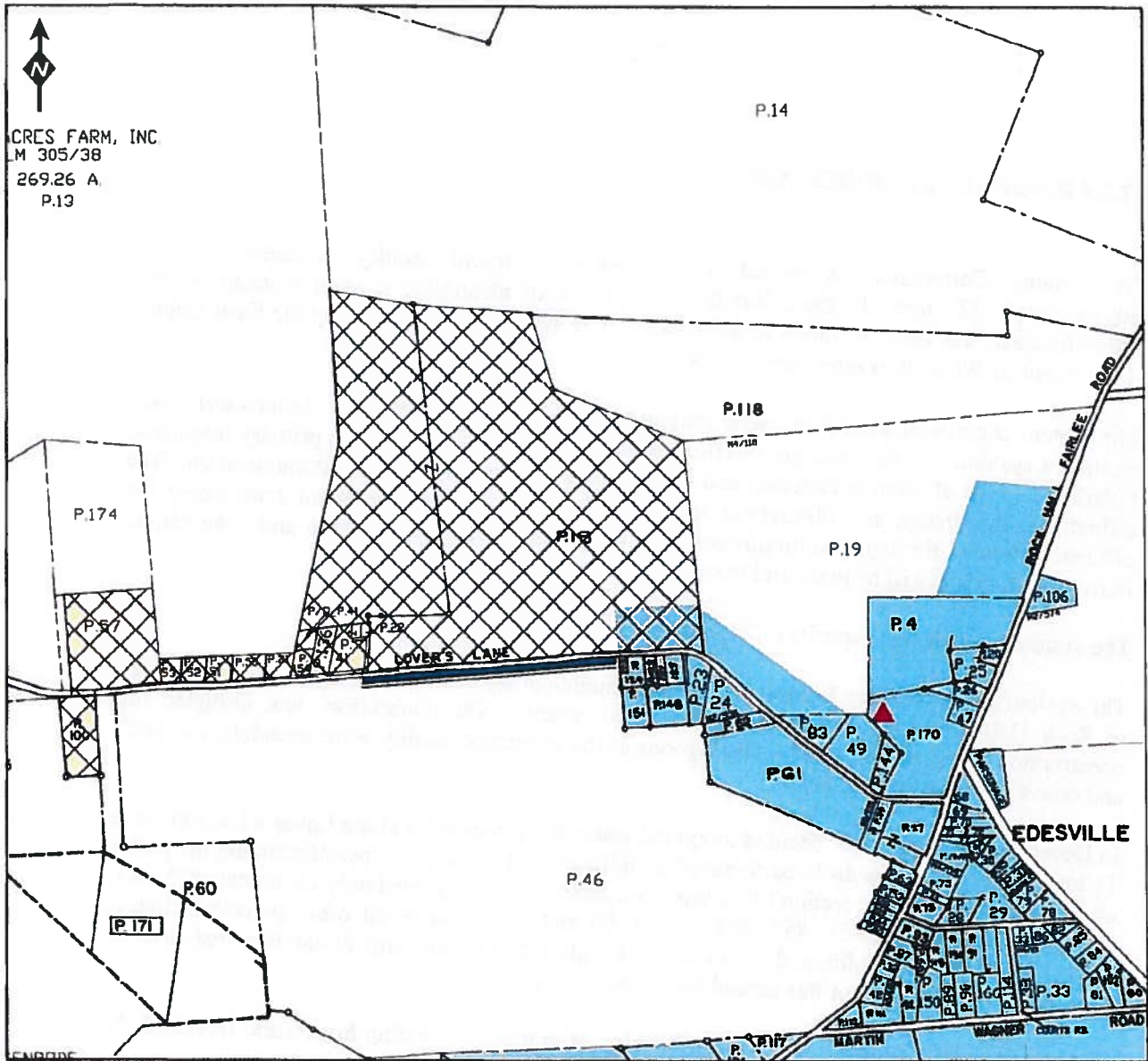
The system has a design capacity of 21,000 gpd.

The system's lagoons were leaking and an intermunicipal agreement was signed with the Town of Rock Hall to connect the system to the town system. The connection was designed and construction completed in 2007. The lagoons at the treatment facility were abandoned in 2007 and converted to waterfowl ponds.

In December of 2007 it was decided to extend water and sewer lines along Lover's Lane to serve 11 lots which have been declared to have/had failing septic systems. Notwithstanding the policy on denied access lines in section I.9 of this plan, access will be granted only for parcels #22, #41, #136, #154, #21, #50, #51, #52, #53, #57, #100 and is denied to all other parcels including agricultural parcels adjoining the service area right of way and any future lots that may be subdivided after the date of this amendment from parcel #18.

The county is proposing to request a combination of grant/loan funding from Rural Development and/or MDE to pay for extension of both water and sewer lines.

# Edesville Sewerage Service Area - Lover's Lane



**Legend**

**Service Area**

- Existing
- Planned
- One connection per parcel served through the Lovers Lane Restricted Access Water and Sewer Lines.
- Watertower

**Line**

- Denied Access Sewer Main
- Denied Access Water Main

**Restricted access has been or will be granted to serve only one dwelling on each of Parcels 100, 57, 53, 52, 51, 50, 21, 154, 136, 41, 22, and 18. No other parcels, including any additional lots that may be subdivided from these parcels, will be allowed to connect to these lines.**

Source: Kent County Dept. of Planning & Zoning; MdProperty View 2007; Prepared July 2008, Revised August 2008, September 2008.

# Kent County Planning Commission

TELEPHONE 410-778-7475

Kent County Government Center  
400 High Street  
Chestertown, Maryland 21620

FACSIMILE 410-810-2932

November 17, 2008

Wayne Morris, Director  
Kent County Department of Water and Wastewater  
709 Morgnac Road  
Chestertown, Maryland 21620

RE: Water and Sewer Plan Amendments  
Lover's Lane - Edesville

Dear Mr. Morris:

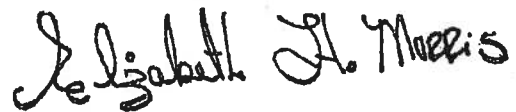
At its November 6, 2008 meeting, the Kent County Planning Commission reviewed for consistency with the Kent County Comprehensive Plan, the proposed Lover's Lane-Edesville amendment to the Kent County Water and Sewer Plan. After a lengthy discussion, the Planning Commission voted unanimously to issue a determination of consistency with the Comprehensive Plan. The Commission based its decision on the following:

- ✧ The County Commissioners propose to extend the existing water and sewer line further along Lover's Lane near Edesville. Soils in the area are generally very poorly drained and as a result of the poor soils, septic systems in the area have failed.
- ✧ The lots to be served are within the countryside but have been recognized by the Kent County Health Department as having failing septic systems.
- ✧ The extension of the line complies with the County's goal to correct failing septic systems.
- ✧ Properties to be served are clearly delineated on the map and are limited to one per parcel. The large farm south of Lover's Lane is not included in the service area.

We appreciate the opportunity to review the proposed Lover's Lane - Edesville amendment. If you have any questions, please do not hesitate to contact me.

Sincerely,

The Kent County Planning Commission



Elizabeth H. Morris  
Chairman





**APPENDIX 4-G**

**Quaker Neck Amendment**



**RESOLUTION**

**AMENDMENT TO THE COMPREHENSIVE WATER AND SEWERAGE PLAN**

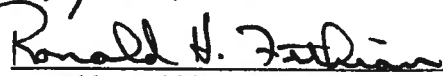
**QUAKER NECK SERVICE AREA**

The County Commissioners of Kent County, Maryland hereby amend the Comprehensive Water and Sewerage Plan to include extension of the Quaker Neck Sewerage Collection System to serve a maximum of 12 lots in Prestwick Woods Subdivision (Lawrence & Associates Developers, LLC) on Parcels 19, 31, 145 & 146 of Tax Map 44 off of Lover's Lane located in the Seventh Election district, along with 15 existing homes located on Parcels 33, 36a, 59, 69, 105, 106, 109, 110, 147, 301, and Parcel 331, lots 1, 2, 3, 4, and 5 within the planned service area, and identified by the Kent County Health Department as having failing septic systems. This line is designated as a "denied access line" that may only serve each of the above lots with one (1) sewer allocation each. The town of Chestertown granted additional sewer allocations to accommodate this project. Currently this area is designated as a "planned service area" for sewer.

This amendment shall take effect on the 3rd day of February, 2009, the date of adoption by the Board of County Commissioners.

THE COUNTY COMMISSIONERS  
OF KENT COUNTY, MARYLAND

  
\_\_\_\_\_  
Roy W. Crow, President

  
\_\_\_\_\_  
Ronald H. Fithian, Member

  
\_\_\_\_\_  
William W. Pickrum, Member

ATTEST

  
\_\_\_\_\_  
Janice F. Fletcher  
Executive Assistant

### **4.5.3 QUAKER NECK**

The Quaker Neck area has obtained some relief through sewage service provided by the Town of Chestertown. The town has provided some treatment capacity at its facility but not all residents have been served and there is continuing demand for growth.

The Kent County Department of Water & Wastewater Services operates and maintains the collection system serving the county area.

Recent discussions with the Town of Chestertown have permitted the county to proceed with a feasibility study to serve failing septic systems along Lover's Lane and also a proposed small residential project on Lover's Lane by expanding the Quaker Neck service area. Lawrence and Associates Developers, LLC previously proposed construction of a shared sanitary facility, manufactured by the Zenon Corporation, to serve a maximum of 12 lots in this subdivision on parcels 19, 31, 145, & 146 of tax map 44 off of Lover's Lane located in the Seventh Election District, along with 16 existing homes located on parcels 33, 36a, 105, 110, 301, 59, 109, 147, and parcel 331, lots 1, 2, 3, 4 & 5 within the planned service area, and identified by the Kent County Health Department as having failing septic systems. The properties will now be served by a proposed extension of the Quaker Neck sewerage collection system. This line is designated as a "denied access line" that may only serve each of the above lots with one (1) allocation each. The Town of Chestertown granted additional sewer allocation to accommodate this project. Currently this area is designated as "planned service" for water or sewer.

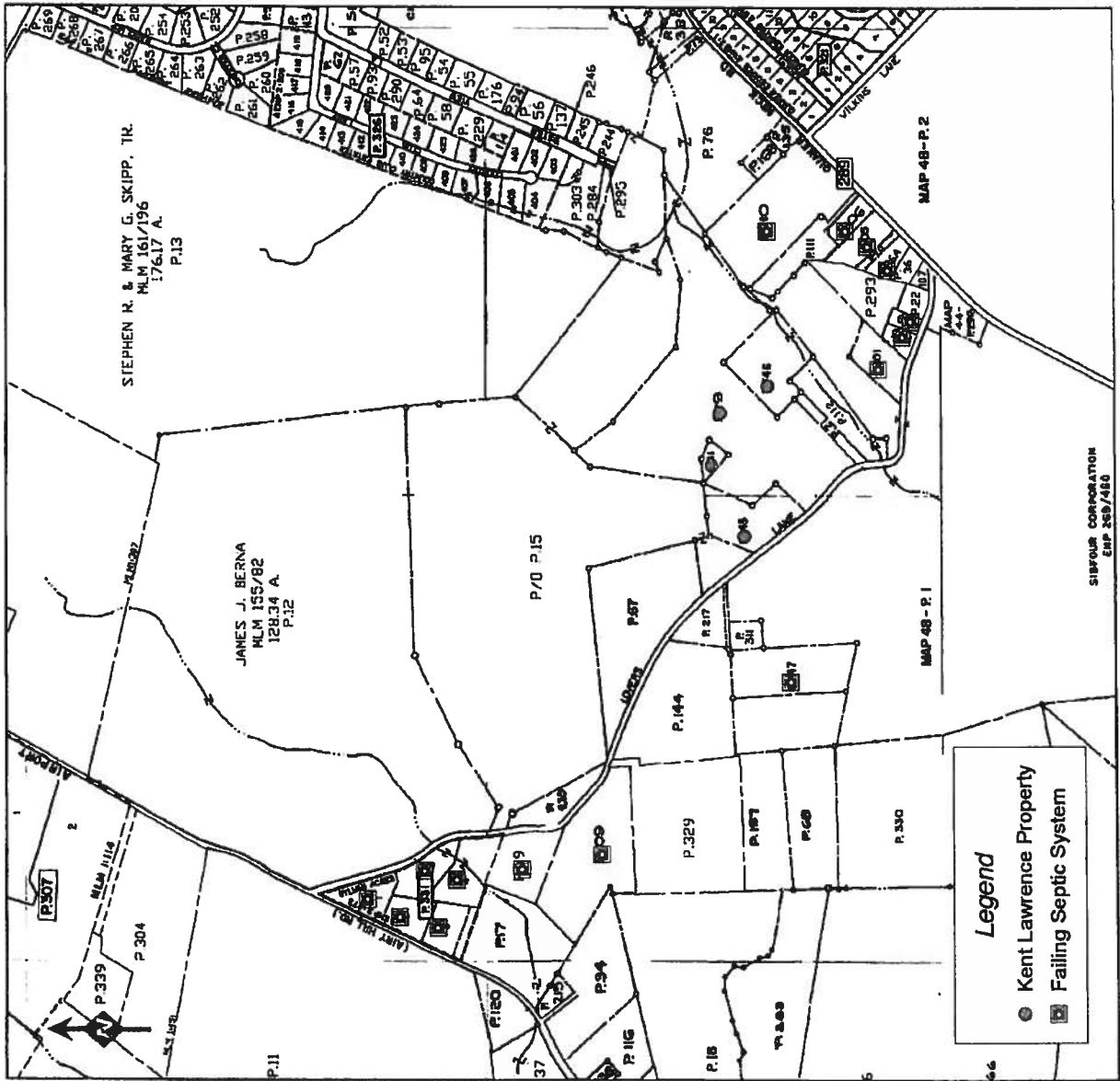
At the time of Chestertown's ENR upgrade to their wastewater treatment facility, the county also upgraded the pumping station located on John Hanson Road to comply with MDE requirements.



# Quaker Neck Sewerage Service Area

The new line will be declared a "denied access" line with only Kent Lawrence's 12 lots and the following properties allowed. One allocation per property is permitted.

Tax Map	Parcel	Lot	Address
44	33		25498 Lovers Lane
44	36A		7420 Quaker Neck Rd
44	59		25181 Lovers Lane
44	69		25510 Lovers Lane
44	105		7426 Quaker Neck Rd
44	106		7468 Quaker Neck Rd
44	109		25195 Lovers Lane
44	110		7490 Quaker Neck Rd
44	147		25345 Lovers Lane
44	301		25478 Lovers Lane
44	331	1	7801 Airy Hill Road
44	331	2	7761 Airy Hill Road
44	331	3	7733 Airy Hill Road
44	331	4	25175 Lovers Lane
44	331	5	25165 Lovers Lane



Source: Kent County Dept. of Planning & Zoning; MdProperty View 2004; November 2004; Revised 3-05, 12-08

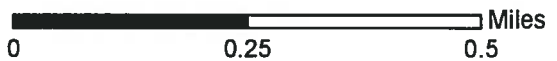
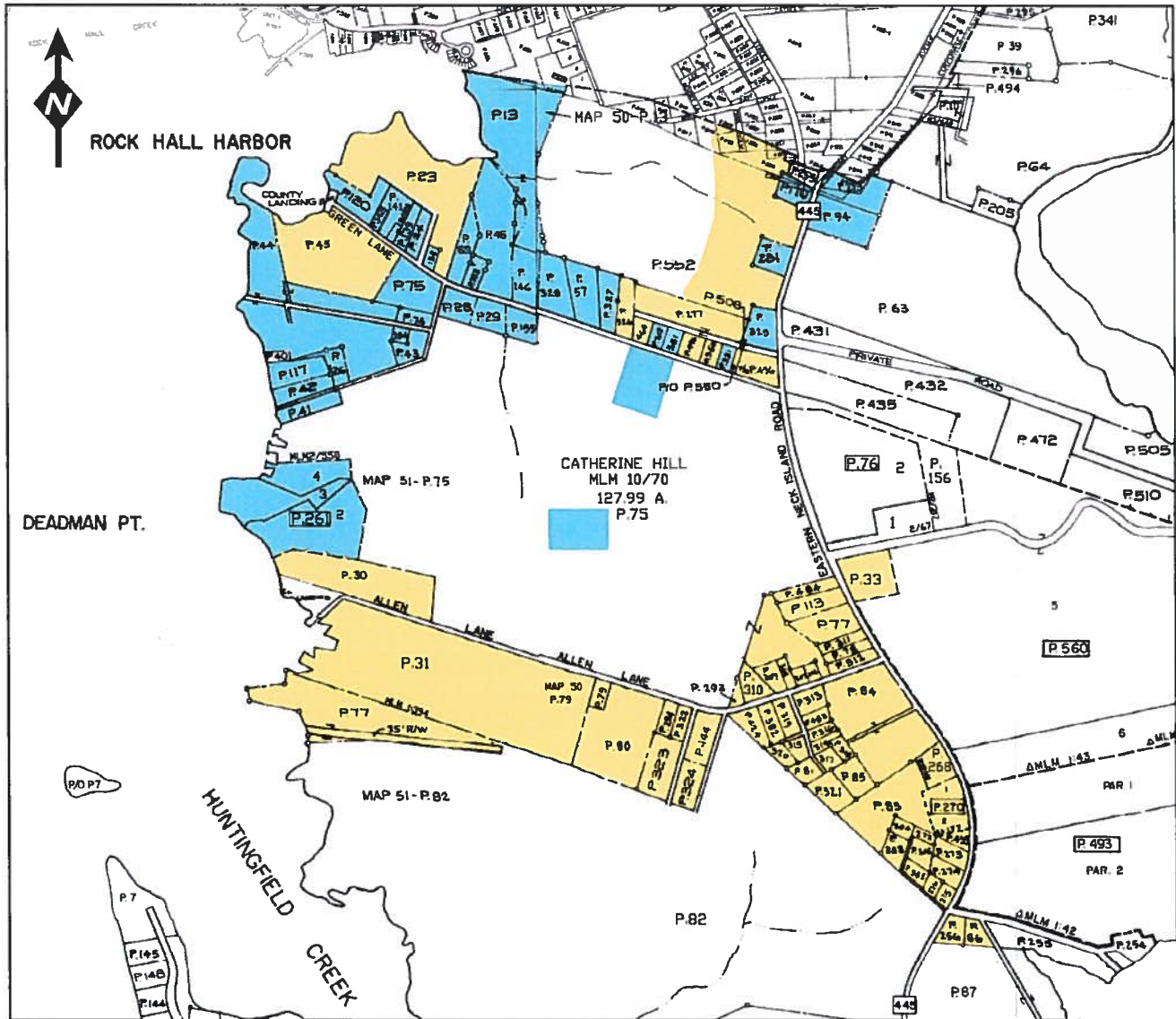


**APPENDIX 4-H**

**Green Lane and Allen's Lane Detail**



# Green Lane & Allen's Lane Sewerage Service Area



**Legend**

- Existing Service
- Planned Service

- \* The proposed force main shall be designated restrictive access;
- \* Existing residential lots with failing septic systems as identified and documented by the Kent County Environmental Health Department shall be allowed to connect to the new sewer system;
- \* Unimproved lots of record existing as of September 2006 that could meet the requirements for private well and septic systems shall be allowed to connect to the new sewer system; and
- \* No further subdivision of any lots in the service area shall be allowed.

Source: Kent County Dept. of Planning & Zoning; MdProperty View 2004; November 2004

Map revised in August 2006, base map from MdProperty View 2006



**APPENDIX 4-I**

**Chesterville Forest Amendment**





## RESOLUTION

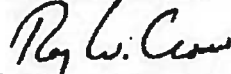
### AMENDMENT TO THE COMPREHENSIVE WATER AND SEWERAGE PLAN

#### Creation of Chesterville Sewerage Service Area

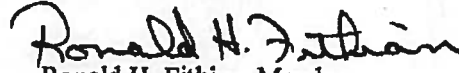
The County Commissioners of Kent County, Maryland hereby amend the Comprehensive Water and Sewerage Plan to include addition of the Chesterville Sewerage Service Area which includes construction of a low pressure grinder pump system to serve the properties along Chesterville Forest Road, which are within a "priority funding area". This project was originally approved on February 26, 2008 but was unable to continue due to unavailability of land for on site treatment and disposal. The new proposal has a low pressure force main traversing along MD 291 and intersecting with an existing force main along Edge Road. The existing line already connects to the Millington treatment plant and the county has enough excess capacity under the agreement with the town of Millington to include these properties. Four (4) properties between Chesterville Forest Road and the connection on Edge Road have been identified by the Kent County Health Department as having failing septic systems; Tax Map 31, Parcel, #18, #76, #122, and #151. The sewerage collection system from the intersection of Chesterville Forest Road and MD 291 to the connection point along Edge Road will be declared a denied access line in accordance with the county's policy.

This amendment shall take effect on the 5<sup>th</sup> day of May, 2009, the date of adoption by the Board of County Commissioners.

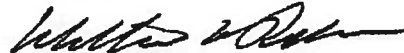
THE COUNTY COMMISSIONERS  
OF KENT COUNTY, MARYLAND



Roy W. Crow, President

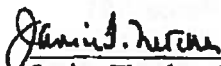


Ronald H. Fithian, Member



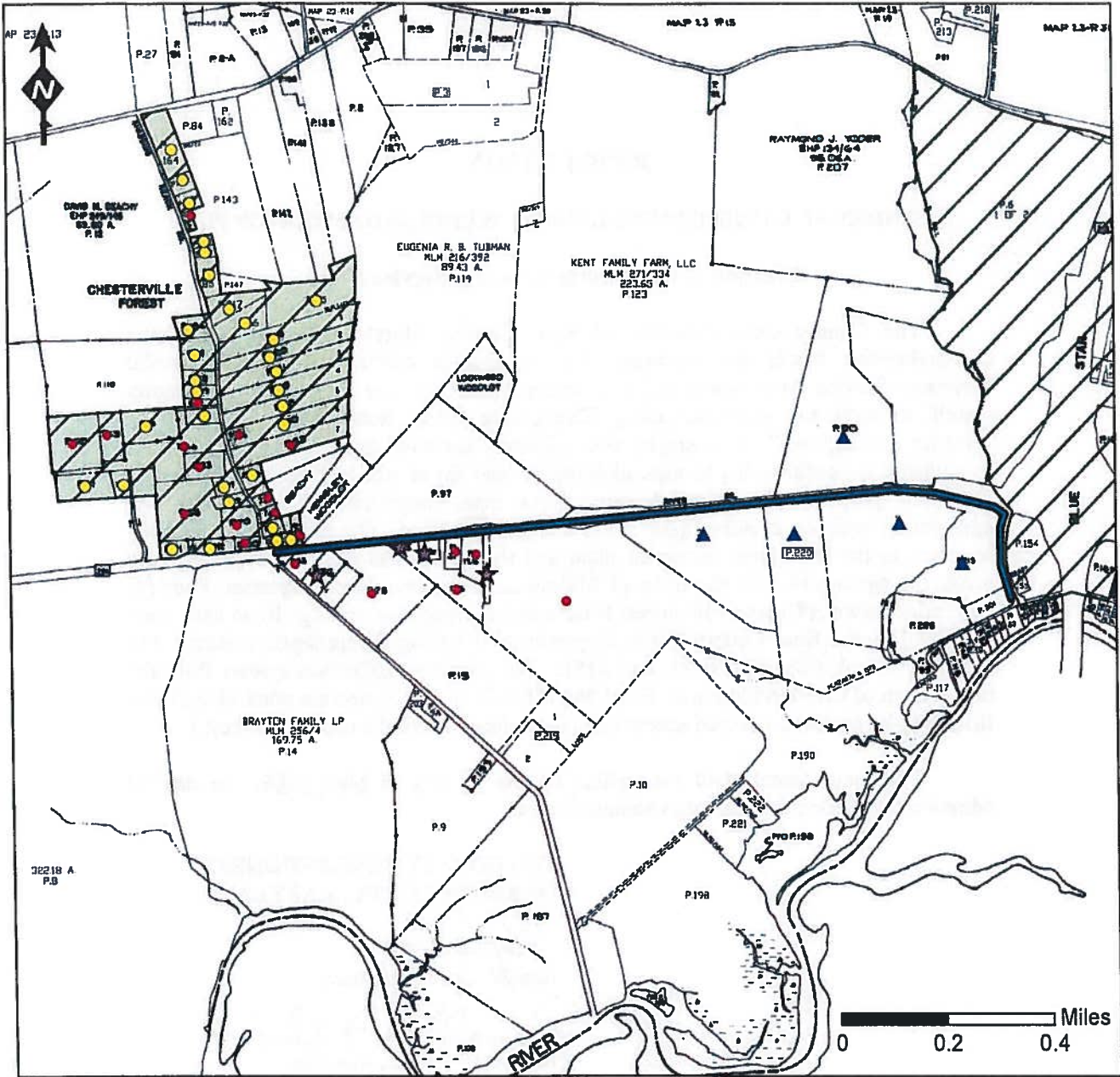
William W. Pickrum, Member

ATTEST:



Janice Fletcher, Executive Assistant

# Chesterville Forest Proposed Sewerage Service Area



**Legend**

- Failing System in PFA
- ★ Failing System outside PFA
- Unimproved Property
- ▲ Improved, Not Failing
- ▨ Proposed Sewer Service Area
- ▨ Priority Funding Area
- Denied Access Force Main
- ★ Property with failing Sewerage Disposal System on Denied Access Force Main:  
 Tax Map 31, Parcel 76  
 Tax Map 31, Parcel 122  
 Tax Map 31, Parcel 151  
 Tax Map 31, Parcel 18

Source: Kent County Dept. of Planning, Housing & Zoning;  
 MdProperty View 2008; 12-07; 10-08; 3-09; 4-09

**APPENDIX 4-J**

**GEORGETOWN AND OLIVET HILL**





KENT COUNTY  
HEALTH DEPARTMENT



COUNTY OF KENT

LELAND D. SPENCER, M.D., M.P.H., HEALTH OFFICER  
125 S. LYNCHBURG STREET, CHESTERTOWN, MARYLAND 21620 • PHONE: 410-778-1350

STATE OF MARYLAND

June 8, 2012

Wayne Morris, Director  
Kent County Department of Public Works  
709 Morgnec Road, STE. 201  
Chestertown, MD 21620


RE: Georgetown, Galena and Olivet Hill Sanitary Survey

Dear Mr. Morris,

The Georgetown, Galena and Olivet Hill Sanitary Survey has been completed. This office recommends the extension of public sewer to the properties in the survey area (see attached). Septic failures were only documented in Olivet Hill and Georgetown. The Olivet Hill sanitary survey indicated a 12% failure rate of septic systems. The Georgetown portion revealed a 7% rate of failure with 60% of the properties having inadequate room for repair of the septic system. The lack of adequate room for repair severely restricts remodeling and expansion of existing living space. Holding tanks for the collection of sewage, an option of onsite waste disposal, may be inexpensive to install but are very expensive to maintain and nearly impossible to verify that they are being maintained properly without strict oversight. The commercial businesses in Georgetown are experiencing issues in managing their onsite waste disposal due to lack of suitable area for repair to handle their existing waste water usage. The Georgetown portion of the sanitary survey is located entirely within critical area. Properties located in critical area are now required to upgrade to best available nitrogen removing technology. Individual BAT units for septic systems are not efficient in removing nitrogen and are very high in cost per pound of nitrogen removed. Public sewer cost per pound is much more economical and efficient in removing nitrogen and would better protect the water quality of the sassafras river than individually owned BAT nitrogen removal units. Public sewer would provide the highest degree of water quality protection to the sassafras, allowing existing commercial activity to function, and providing homeowners with a reliable method of waste disposal that will allow reasonable upgrades to their homes.

If you have additional questions, please feel free to contact me.

Sincerely,

  
John C. Beskid, R.S.  
Director of Environmental Health



## **Kent County Water and Sewer Comprehensive Plan**

### Galena Wastewater Treatment Plant

The County is working in concert with the Town of Galena to upgrade their Wastewater Treatment Plant that is currently under a consent order from MDE. A previous plan amendment for the Galena plant expansion to 0.080MGD was approved on April 11, 2011 by MDE with plant limits identified in NPDES permit 09-DP-0528. The County plans on upgrading the Galena plant from 0.080MGD to accommodate the projected flows from the Galena/Georgetown/Olivet Hill service areas.





## Galena/Georgetown/Olivet Hill Sewerage Service Area

The proposed Galena/Olivet Hill/Georgetown Sewerage Service Area are rural villages with in the SassafRAS River watershed. Georgetown and Olivet Hill areas are with in the priority funding area (PFA). The Kent County Health Department has performed a sanitary survey in these areas and recommends extension of public sewer to the areas based on failing on-site systems, inadequate space for replacement systems and the locations with in the critical area along the SassafRAS River. With this project the County will work in concert with the Town of Galena's proposed Wastewater Treatment Plant upgrade and be responsible for the County's share of the needed capacity for the project. The project will involve extending collection lines through areas outside of the PFA, passing existing homes. The collection and transmission lines extending through these areas will be classified as denied access lines in accordance with the Chapter 1.4.6., Denied Access Facilities Policy in the approved 2009 Comprehensive Water and Sewerage Plan.

The following properties along the east side of Route 213 between Georgetown and Galena will be included in the service area under the Denied Access Facilities Policy and will only be allowed one allocation per existing parcel: Parcel 7, 15, 16, 18, 107, 85, 357-Lot 1 and Lot 2, and Parcel 4 - Lot 2.

All of the properties with in the PFA are will be included in the service area. The properties on Maplewood Lane, Lee Avenue and Mill Lane are currently partially served by utilities from the Town of Galena and are to be included in the sewerage service area. See proposed service area map.

### Exclusions:

Map 7- Parcel 2, a large piece of land on the west side of Route 213 identified as Parcel 2 is part of an preservation easement is excluded from the service area and will not be served or permitted connection to the sewerage collection system.

Map 15- Parcel 3, a piece of land on the south side of Route 290 identified as Parcel 3 is excluded from the service area and will not be served or permitted connection to the sewerage collection system.





**KENT COUNTY  
HEALTH DEPARTMENT**



COUNTY OF KENT

LELAND D. SPENCER, M.D., M.P.H., HEALTH OFFICER  
125 S. LYNCHBURG STREET, CHESTERTOWN, MARYLAND 21620 • PHONE: 410-778-1350

STATE OF MARYLAND

February 25, 2013

Michael Wojton, Deputy Director  
Water and Waste Water Services  
709 Morgnec Road  
Chestertown, MD 21620

RE: Sanitary Survey Request  
Georgetown and Olivet Hill

Dear Mr. Wojton,

This letter is in response to the Kent County Commissioner's request to conduct a sanitary survey of the Georgetown and Olivet Hill communities due to concerns that these areas may have underperforming septic systems that could pose a significant threat to the public's health and thus provide documentation to assist in planning and support for public sewer services.

The sanitary surveys included 3 components;

- Complete file search and review of all improved lots in these two communities to assess status and compliance of current septic systems and wells with current regulations,
- A walking inspection of each site for obvious indicators of non-conforming (direct penetration of groundwater) or failure (surface level discharge) and capacity for onsite repair or replacement, and,
- Review of current flood plain maps, topography, and soils to assess the vulnerability of current septic systems during significant weather events

The Georgetown survey included an assessment of seventy seven improved sites with the following significant findings:

- Four failing systems with obvious surface level sewage discharge with no capacity to repair or replace,
- Eighteen systems were non-conforming thereby acting as a direct conduit to the groundwater and the Sassafra River with no capacity to repair or replace, and,
- Overall, out of the remaining lots, sixty percent have no capacity to be repaired or replaced once they begin to show signs of underperformance or failure.

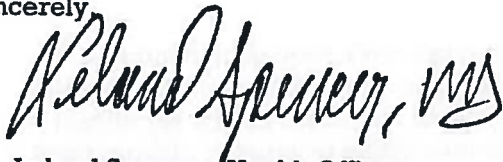
Therefore, given these findings and the significant potential for harm to the public's health this Office would classify this community as a "public health emergency" and strongly recommends immediate planning and support for public sewer services.

The Olivet Hill survey included an assessment of 25 improved sits with the following significant finding;

- Three failing systems with obvious surface level discharge
- No lots with evidence of septic systems that were directly contributing to the groundwater,
- Adequate area among the lots to repair and replace underperforming or failing systems, (in fact one of the three failures has subsequently been repaired).

Therefore, since there exists the capacity to repair or replace underperforming or failing systems in compliance with current standards of environmental health regulations, emergent action for public sewer services is not indicated.

Sincerely,



Dr. Leland Spencer, Health Officer  
Kent County Health Department

CC.

Amy Moredock  
Director – Planning, Housing, & Zoning  
400 High St  
Chestertown, MD 21620

# Kent County Planning Commission

TELEPHONE 410-778-7475

Kent County Government Center  
400 High Street  
Chestertown, Maryland 21620

FACSIMILE 410-810-2932

7 March 2013

Ronald H. Fithian, President  
County Commissioners of Kent County  
400 High Street  
Chestertown, MD 21620

Re: Draft Kent County Water and Sewer Plan Update  
Review of new information relative to the Galena Sewerage Line Extension

Dear Commissioner Fithian:

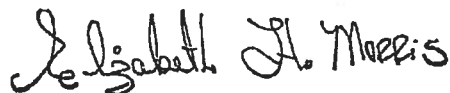
In light of new information received from Kent County Health Officer Dr. Leland Spencer regarding the conditions in Georgetown, the Planning Commission herewith updates its previous evaluation of the Galena Sewerage Line proposal as outlined in the Draft Kent County Comprehensive Water and Sewerage Plan Update. Based on the Planning Commission's understanding of a health emergency, we did not feel that adequate data had been presented to substantiate a finding of consistency with the Comprehensive Plan during previous evaluations of the proposal in September and October 2012.

During those reviews of the Draft Kent County Comprehensive Water and Sewerage Plan Update, the Planning Commission found that the Update was consistent in all respects with the Kent County Comprehensive Plan aside from the Galena sewerage line extension into the countryside. Dr. Spencer has since documented the survey findings and noted significant potential for harm to public health in the Georgetown area which would classify the Georgetown community as a public health emergency. Therefore, the Planning Commission now amends its previous decision in this regard and finds that the entire Update, including the extension of the sewerage line to Georgetown, is consistent with the Comprehensive Plan.

The Planning Commission further acknowledges that Department of Water and Wastewater staff will make minor corrections and additions to the Draft Kent County Comprehensive Water and Sewerage Plan in accordance with Maryland Department of the Environment comments.

Sincerely,

Kent County Planning Commission




Elizabeth H. Morris  
Chairman

EHM/AGM/agm

CC: Michael Wojton



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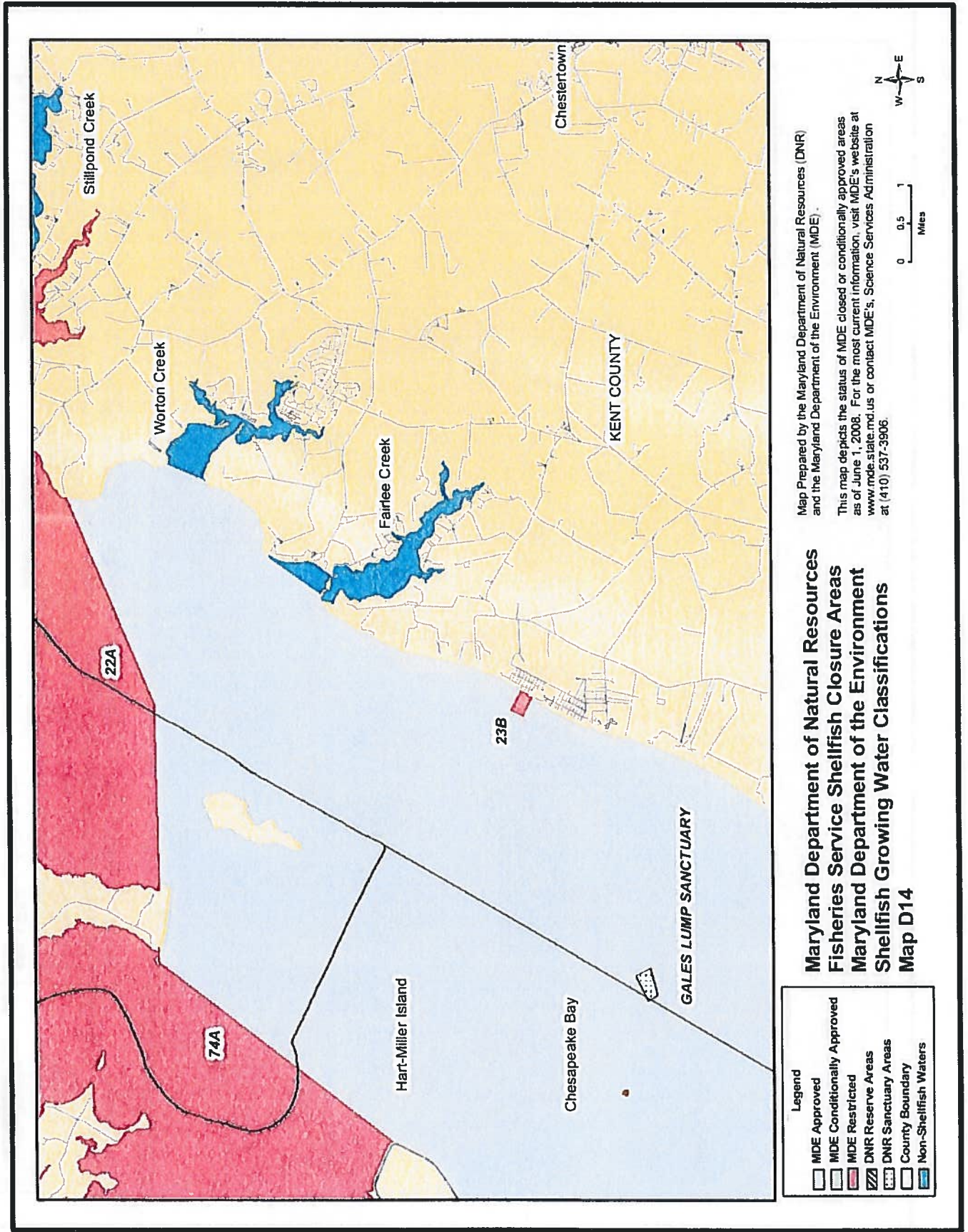


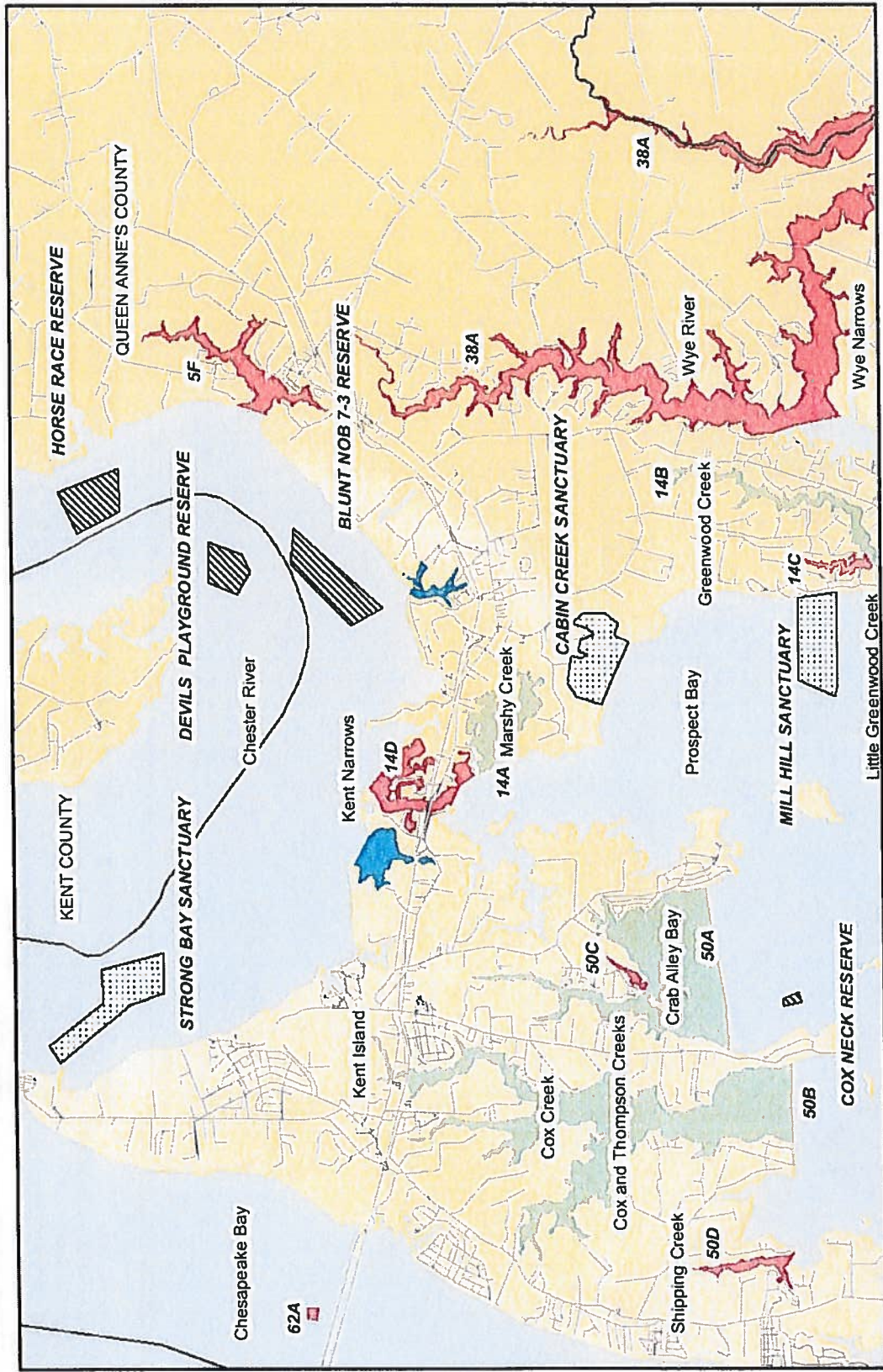
**APPENDIX 5-A**

**Shellfish Closure Area Maps**



Appendix 5-A





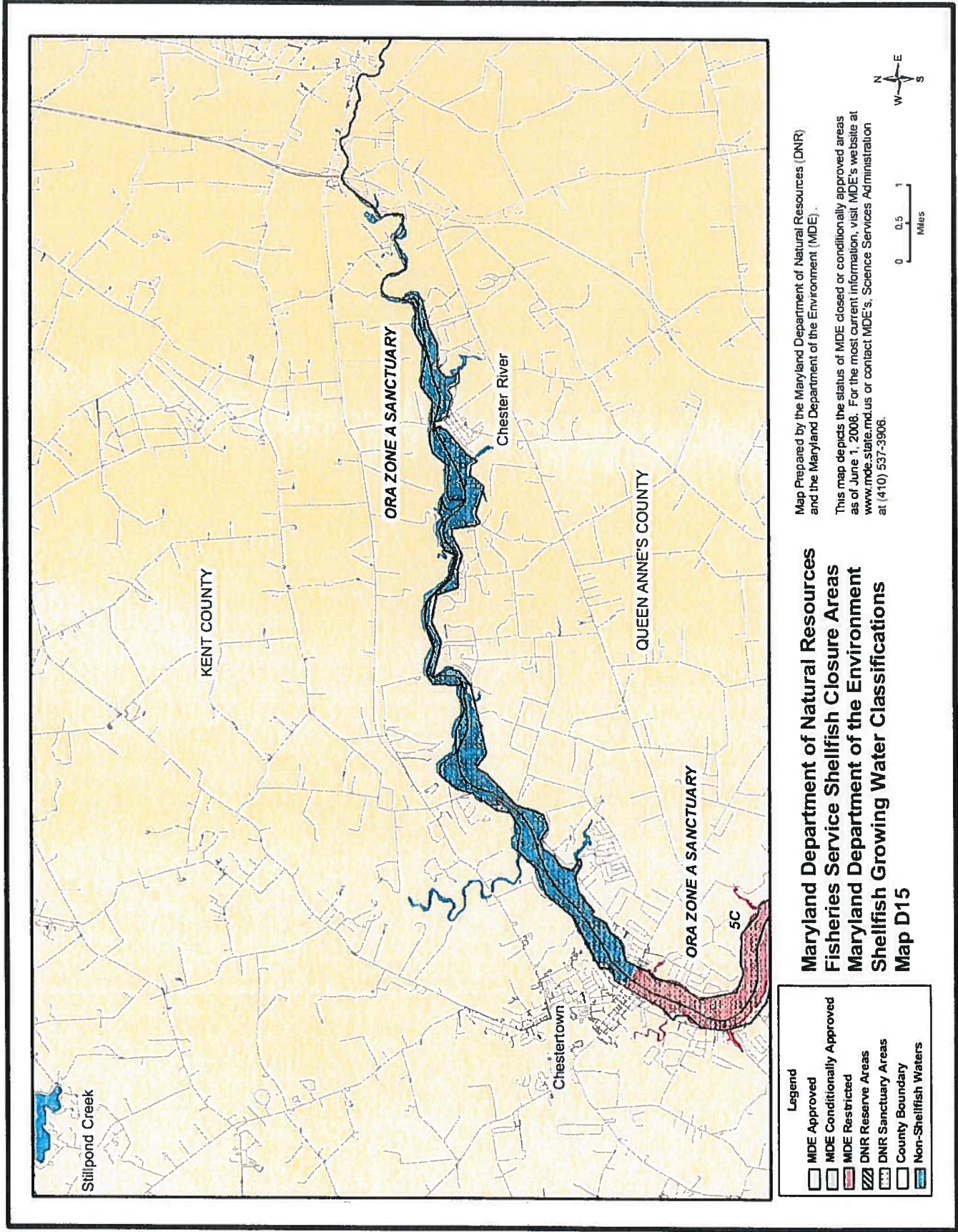
- Legend**
- MDE Approved
  - MDE Conditionally Approved
  - MDE Restricted
  - DNR Reserve Areas
  - DNR Sanctuary Areas
  - County Boundary
  - Non-Shellfish Waters

**Maryland Department of Natural Resources  
 Fisheries Service Shellfish Closure Areas  
 Maryland Department of the Environment  
 Shellfish Growing Water Classifications  
 Map F-14**

Map Prepared by the Maryland Department of Natural Resources (DNR) and the Maryland Department of the Environment (MDE).

This map depicts the status of MDE closed or conditionally approved areas as of June 1, 2008. For the most current information, visit MDE's website at [www.mde.state.md.us](http://www.mde.state.md.us) or contact MDE's Science Services Administration at (410) 537-3906.





Map Prepared by the Maryland Department of Natural Resources (DNR) and the Maryland Department of the Environment (MDE).

This map depicts the status of MDE closed or conditionally approved areas as of June 1, 2008. For the most current information, visit MDE's website at [www.mde.state.md.us](http://www.mde.state.md.us) or contact MDE's Science Services Administration at (410) 537-3906.

**Maryland Department of Natural Resources  
 Fisheries Service Shellfish Closure Areas  
 Maryland Department of the Environment  
 Shellfish Growing Water Classifications  
 Map D15**

- Legend**
- MDE Approved
  - MDE Conditionally Approved
  - MDE Restricted
  - DNR Reserve Areas
  - DNR Sanctuary Areas
  - County Boundary
  - Non-Shellfish Waters



