THOMAS, NIESEN & THOMAS, LLC
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May 8, 2020

Via Electronic Filing

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17105-3265

In re: Docket No. A-2019-3015173
Application of Aqua Pennsylvania Wastewater, Inc. pursuant to Sections 1102, 1329 and 507 of the Public Utility Code for Approval of its Acquisition of the Wastewater System Assets of the Delaware County Regional Water Quality Control Authority

Dear Secretary Chiavetta:

We are counsel to Aqua Pennsylvania Wastewater, Inc. ("Aqua" or "Company") in connection with its above referenced Application, filed with the Public Utility Commission on March 3, 2020, pursuant to Sections 1102, 1329 and 507 of the Public Utility Code, for approval of the acquisition of the wastewater system assets of the Delaware County Regional Water Quality Control Authority. The Bureau of Technical Utility Services is reviewing the Application and has asked that we address certain requests for additional information. We addressed several requests in letters filed with you on May 6 and 7, 2020. The remaining responses are addressed hereinafter.

INFORMATION REQUEST 3:
Checklist Item No. 12 – The Class V – Form Waste Section of Application's Exhibit G, First Revised Page 14 indicates a discount of 5.00% shall apply for hauled or delivered waste with greater than 90.0% volatile solids. Delaware County Regional Water Control Authority's (DELCORA's) Resolution No. 2019-05 Page 3, provided as the last page in the Application's Exhibit H, indicates a discount of 10% shall apply for hauled or delivered waste with greater than 90% volatile solids. Please amend the Application's Exhibit G to include the correct percentage discount for hauled or delivered waste with greater than 90% volatile solids under the Class V – Form Waste section.

RESPONSE:
A corrected copy of Application Exhibit G – Schedule of Rates Tariff Pages is included with this letter.

INFORMATION REQUEST 4:
Checklist Item No. 15.b. – The Application's Exhibit D, Section 8 does not provide a comprehensive list of all non-depreciable property such as land and rights-of-way as the

Application's Exhibit B-1, Schedule 4.09, provides an "In process" list of land and easements that is more comprehensive. Please amend the Application's Exhibit D to provide a complete listing of all land and rights-of-way for the DELCORA system indicating, at a minimum, all the parcels held in fee ownership, exclusive or non-exclusive easement or leasehold.

RESPONSE:
A corrected copy of Sections 5 and 8 of Application Exhibit D is included with this letter.

INFORMATION REQUEST 5:
Checklist Item No. 16.f. – The Application's Exhibits A-1 through A-6 do not depict the locations of the Eddystone Pumping Station (PS-10), Delaware River Interceptor Bypass (PB-33), Brookhaven Road Pumping Station (PS-A), and Old Mill Pumping Station (PS-B) as listed in the Application's Exhibit D, Section 8, List of Assets and Costs. Please amend the Application's Exhibits A-1 through A-6, as applicable, to include the locations of the Delaware River Interceptor Bypass and the Eddystone, Brookhaven Road, and Old Mill Pumping Stations.

RESPONSE:
Amended PUBLIC versions of Application Exhibit A5 – Rose Valley, Application Exhibit A6 – Chester City and Application Exhibit A1 – Index are included with this letter. An amended CONFIDENTIAL version of Application Exhibit A5 – Rose Valley and an amended CONFIDENTIAL version of Application Exhibit A6 – Chester City are being provided to the Secretary of the Commission by email correspondence.

INFORMATION REQUEST 8:
Checklist Item Nos. 12 and 18.a. – The Application's Exhibit A4 indicates DELCORA serves several customers in Upper Providence Township. However, the Applications' Exhibits G and H do not include rates for DELCORA's customers in Upper Providence Township. Please amend the following:

a. The Application's Exhibit G to include the rates for Upper Providence Township customers; and

b. The Application's Exhibit H to include a copy of the DELCORA resolution establishing rates for customers in Upper Providence Township.

RESPONSE:
Aqua will provide a copy of the amended DELCORA resolution following DELCORA's next board meeting on May 19, 2020. An amended PUBLIC version of Application Exhibit A4 – Edgmont is included with this letter. An amended CONFIDENTIAL version of Application Exhibit A4 – Edgmont is being provided to the Secretary of the Commission by email correspondence.

INFORMATION REQUEST 9:
Checklist Item Nos. 12 and 18.a. – The Application's Exhibit A6 indicates DELCORA serves several customers in Woodlyn Township. However, the Application's Exhibits G and H do not include rates for DELCORA's customers in Woodlyn Township. Please amend the following:

a. The Application's Exhibit G to include the rates for Woodlyn Township customers; and

b. The Application's Exhibit H to include a copy of the DELCORA resolution establishing rates for customers in Woodlyn Township.

RESPONSE:
Woodlyn is not a township. Woodlyn is a census designated area within Ridley Township. Customers in Ridley Township shown on Application Exhibit A6 are charged the rates set forth under Resolution 2019-15 included in Application Exhibit H. A corrected copy of Application Exhibit G – Schedule of Rates Tariff Pages which includes Woodlyn, Ridley Township (portion) is included with this letter. Aqua will provide a copy of the amended DELCORA resolution following DELCORA's next board meeting on May 19, 2020.

INFORMATION REQUEST 10:
Checklist Item Nos. 12 and 18.a. – The Application's Exhibit A6 indicates DELCORA serves several customers in Brookhaven Borough. However, the Application's Exhibits G and H do not include rates for DELCORA's customers in Brookhaven Borough. Please amend the following:

a. The Application's Exhibit G to include the rates for Brookhaven Borough customers; and

b. The Application's Exhibit H to include a copy of the DELCORA resolution establishing rates for customers in Brookhaven Borough.

RESPONSE:
Customers in Brookhaven Borough shown on Application Exhibit A6 are charged the rates set forth under Resolution 2019-16 and 2019-17 included in Application Exhibit H. A corrected copy of Application Exhibit G – Schedule of Rates Tariff Pages which includes Brookhaven Borough (portion) is included with this letter. Aqua will provide copies of the amended DELCORA resolutions following DELCORA's next board meeting on May 19, 2020.

INFORMATION REQUEST 11:
Checklist Item Nos. 12 and 18.a. – The Application's Exhibit A6 indicates DELCORA serves several customers in Upper Chichester Township. However, the Application's Exhibits G and H do not include rates for DELCORA's customers in Upper Chichester Township. Please amend the following:

a. The Application's Exhibit G to include the rates for Upper Chichester Township customers; and

b. The Application's Exhibit H to include a copy of the DELCORA resolution establishing rates for customers in Upper Chichester Township.

RESPONSE:
Customers in Upper Chichester Township shown on Application Exhibit A6 are charged the rates set forth under Resolution 2019-15 and 2019-19 included in Application Exhibit H. A corrected copy of Application Exhibit G – Schedule of Rates Tariff Pages which includes Upper Chichester Township (portion) is included with this letter. Aqua will provide copies of the amended DELCORA resolutions following DELCORA's next board meeting on May 19, 2020.

INFORMATION REQUEST 12:
Checklist Item No. 12 and 18.a. – The Application's Exhibit H does not include DELCORA's rates for DELCORA's customers in Nether Providence Township. Please amend the Application's Exhibit H to include a copy of the DELCORA resolution establishing rates for customers in Nether Providence Township.

RESPONSE:
An amended PUBLIC version of Application Exhibit A5 – Rose Valley is included with this letter. An amended CONFIDENTIAL version of Application Exhibit A5 – Rose Valley is being provided to the Secretary of the Commission by email correspondence. Upon further review by DELCORA of the service area, residents of Nether Providence are not directly billed customers of DELCORA, however, DELCORA bills Nether Providence Township on an EDU basis for customers whose flow goes through Rose Valley.

INFORMATION REQUEST 13:
Checklist Item No. 18.b. – The Application's Exhibit H does not include DELCORA's rules and regulations regarding eligibility requirements to be considered a member of the following customer classes indicated in Resolutions Nos. 21-25 and 30: Western Wholesale, EDU Wholesale, Retail Industrial, Wholesale Industrial, Eastern Wholesale and Chester Ridley Creek. Please amend the Application's Exhibit H to include DELCORA's rules and regulations regarding eligibility requirements to be considered a member of each of these customer classes.

RESPONSE:
The Company is implementing the existing rates of DELCORA under their existing rate resolutions. Please refer to Exhibit H, Resolution 2011-04, Article 300, under which customers apply for service in accordance with the nature of the wastewater flow and the manner in which wastewater gets to the DELCORA facilities.

INFORMATION REQUEST 14:
Checklist Item No. 18.c. – The Application's Exhibit G does not include APW's proposed rates, rules and conditions of service regarding eligibility requirements to be considered a member of the following customer classes indicated in the Application's Exhibit H, Resolutions Nos. 21-25 and 30: Western Wholesale, EDU Wholesale, Retail Industrial, Wholesale Industrial, Eastern Wholesale and Chester Ridley Creek. Please amend the Application's Exhibit G to include APW's proposed rates, rules and conditions of service regarding eligibility requirements to be considered a member of each of these customer classes.

RESPONSE:
The Company is implementing the existing rates of DELCORA under their existing rate resolutions. Application Exhibit G – Schedule of Rates Tariff Pages, Original Page 8.XX.1 states: "Wastewater customers in the Delcora Division are required to comply with DELCORA's wastewater control regulations adopted by DELCORA and included in Exhibit H".

INFORMATION REQUEST 15:
Checklist Item No. 18.c. – The Application's Exhibit G does not include APW's proposed rates, rules, and conditions of service regarding wastewater service to customers located in the Springhill Farms proposed service territory indicated in the Application's Exhibit A3. Please provide APW's proposed rates, rules, and conditions of service regarding wastewater service to customers located in the Springhill Farms proposed service territory.

RESPONSE:
An amended Application Exhibit G – Schedule of Rates Tariff Pages to includes Chadds Ford Township (portion) and Concord Township (portion) in the Territories Served is included in this letter. DELCORA will not own Springhill Farms until the end of 2020, when construction is scheduled to be complete. The Company has anticipated the revenue for Springhill Farms in Appendix A and will update the tariff when rates become memorialized by Resolution before the end of 2020.

INFORMATION REQUEST 19:
Checklist Item Nos. 22.a. – The Application's Exhibit A2 indicates the requested service territory includes a portion of Pocopson Township. For this portion of the requested service territory:

a. Please provide evidence the requested territory complies with service territory defined by Pocopson Township's DEP-approved Official Sewage Facilities Act 537 Plan; and

b. Provide a copy the DEP-approved Act 537 Plan for Pocopson Township, including associated Sewage Facilities Planning Modules for the Pocopson Riverside and Preserve requested service territories.

RESPONSE:
Pocopson Township does not have a Township-wide Act 537 Plan, and instead operates under the Chester County Master Sewer Plan included with the Application as Exhibit P4. Copies of both the Sewage Facilities Planning Module for Pocopson Preserve (Corinne Village) Revised March 15, 2005, and the Pocopson Township Act 537 Plan Special Study for Lenape-Pocopson Study Area, May 2009, are included with this letter. Copies of the Pocopson Township Resolution No. 2005-8 related to Pocopson Preserve (Corinne Village) approving Plan revisions for new land development and Resolution No. 2009-12 related to Pocopson Riverside (Sheeder Tract) approving an update to Pocopson Township's Act 537 Plan Special Study are included with this letter.

INFORMATION REQUEST 27:
Checklist Item No. 24.d – Schedule 4.09 of the APA provided in the Application as Exhibit B1 does not adequately describe the owned real property to be transferred, in some cases listing an address and, in others, just street names. Please provide a list and description of the real property by address, parcel number, or other definitive means which specifically identifies the real property to be transferred as part of this transaction.

RESPONSE:
An amended Schedule 4.09 to Application Exhibit B1 is included with this letter.

INFORMATION REQUEST 34:
Checklist Item No. 25 - The Application's Exhibit F120 is missing its copy of its Exhibit B Study Area Map. Please provide a copy of this exhibit.

RESPONSE:
Aqua and DELCORA are in the process of locating the Exhibit B Study Area map with Pocopson Township, and will provide the map when it is located.

The Verification of William C. Packer verifying the foregoing and the facts set forth in our letter of May 7, 2020, is attached hereto.

Aqua believes that, with this letter and accompanying documentation, it has complied with the Bureau of Technical Utility Services requests for supplemental information and asks that the Public Utility Commission acknowledge that the Application has been perfected.

Please contact me with any questions about the foregoing.

Very truly yours,

THOMAS, NIESEN & THOMAS, LLC

By 

Thomas T. Niesen

cc: Certificate of Service (w/encl.)
Alexander R. Stahl, Esquire (via email, w/encl.)
Thomas S. Wyatt, Esquire (via email, w/encl.)

APPLICATION EXHIBIT G – SCHEDULE OF RATES TARIFF PAGE (CORRECTED COPY)

AQUA PENNSYLVANIA WASTEWATER, INC.
(hereinafter referred to as the "Company")

RATES, RULES, AND REGULATIONS

GOVERNING THE COLLECTIONS OF

WASTEWATER

IN PORTIONS OF

ADAMS, BUCKS, CARBON, CHESTER, CLARION, CLEARFIELD, DELAWARE, LACKAWANNA, LUZERNE, MONROE, MONTGOMERY, PIKE, SCHUYLKILL, VENANGO, AND WYOMING COUNTIES

IN THE COMMONWEALTH OF PENNSYLVANIA

ISSUED: XXXX XX, 202X
By:
Marc Lucca, President
Aqua Pennsylvania, Inc.
762 Lancaster Avenue
Bryn Mawr, Pennsylvania 19010

EFFECTIVE: XXXX XX, 202X

NOTICE

THIS TARIFF ESTABLISHES WASTEWATER RATES FOR CUSTOMERS OF DELCORA SITUATED WITHIN DELAWARE AND CHESTER COUNTIES, PENNSYLVANIA.

LIST OF CHANGES MADE BY THIS TARIFF

Changes: This tariff makes changes to reflect the acquisition of the wastewater assets of Delaware County Regional Water Quality Control Authority ("Delcora"), located in Delaware and Chester Counties, Pennsylvania. Closing on the acquisition took place on XX/XX/XXXX, with the effective date of ownership occurring at 12:01 AM on XX/XX/XXXX. (See pages 6, 7, 8.XX.1 through 8.XX.9, 14 and 14.1)

This tariff is made pursuant to the Commission's Order adopted and entered XX/XX/XXXX at Docket No. A-2019-3015173, which authorizes the issuance of the Certificate of Public Convenience.

TABLE OF CONTENTS

DESCRIPTION OF TERRITORIES SERVED

	Township	County
RATE ZONE 4		
Honeycroft Village Division	Londonderry (portion)	Chester
Lake Harmony Division	Kidder	Carbon
New Daleville Division	Londonderry (portion)	Chester
Peddlers View Division	Solebury (portion)	Bucks
Tobyhanna Township Division	Tobyhanna (portion)	Monroe
Twin Hills Division	West Pikeland (portion)	Chester
RATE ZONE 5		
Avon Grove School District	New London (portion)	Chester
Avon Grove School District	Penn (portion)	Chester
East Bradford Division (Brandywine)	East Bradford (portion)	Chester
Little Washington Division	East Brandywine (portion)	Chester
Plumsock Division*	Willistown (portion)	Chester
The Greens at Penn Oaks Division	Thornbury (portion)	Chester
Newlin Green Division	Newlin	Chester
Sage Hill Division	Thornbury (portion)	Chester
RATE ZONE 6		
CS Sewer Division (Masthope)	Lackawaxen	Pike
RATE ZONE 7		
Limerick Division	Limerick (portion)	Montgomery
RATE ZONE 8		
East Bradford Township Division	East Bradford (portion)	Chester
East Bradford Township Division	Birmingham (portion)	Chester
RATE ZONE 9		
Cheltenham Township Division	Cheltenham	Montgomery
Cheltenham Township Division	Jenkintown Borough (portion)	Montgomery

DESCRIPTION OF TERRITORIES SERVED

	Township	County	
RATE ZONE X *			(C)
Delcora Division *			(C)
Rate Zone 12-A			(C)
Group A-1	Chester City	Delaware	(C)
	Ridley Township (portion)	Delaware	(C)
	Chester	Delaware	(C)
	Parkside Borough	Delaware	(C)
	Trainer Borough	Delaware	(C)
	Upland Borough	Delaware	(C)
	Brookhaven (portion)	Delaware	(C)
	Upper Chichester (portion)	Delaware	(C)
Group A-2	Marcus Hook Borough	Delaware	(C)
Group A-3	Chester City	Delaware	(C)
	Marcus Hook Borough	Delaware	(C)
	Trainer Borough	Delaware	(C)
	Marcus Hook Borough	Delaware	(C)
Rate Zone 12-B	Chester City	Delaware	(C)
	Eddystone Borough	Delaware	(C)
	Marcus Hook Borough	Delaware	(C)
Rate Zone 12-C	Chester City	Delaware	(C)
	Ridley	Delaware	(C)
Rate Zone 12-D	Edgmont	Delaware	(C)
Rate Zone 12-E	Pocopson (portion)	Chester	(C)
Rate Zone 12-F	Rose Valley Borough	Delaware	(C)
Rate Zone 12-G	Chadds Ford (portion)	Delaware	(C)
	Concord (portion)	Delaware	(C)
Rate Zone 12-H			(C)
Group H-1	Eastern Wholesale	Delaware	(C)
Group H-2	Western Wholesale	Delaware	(C)
Group H-3	EDU Wholesale	Delaware	(C)
Group H-4	Chester Ridley Creek	Delaware	(C)

*All Divisions and Subdivisions above are billed on a per EDU basis, with the exception of the Media Division, Plumsock Division, Treasure Lake Division, Village of Valley Forge Division and portions of the Delcora Division.

SCHEDULE OF RATES

RATE ZONE XX – METERED AND UNMETERED

The rates under this schedule apply to all customer classes in the territories served subject to Rate Zone XX rates as noted in the Description of Territories Served section under this tariff unless otherwise specifically identified below.

Wastewater customers in the Delcora Division are required to comply with DELCORA's wastewater control regulations adopted by DELCORA and included in Exhibit H to the Application filed at Docket No. A-2019-3015173.

SCHEDULE OF RATES

RATE ZONE XX – METERED AND UNMETERED CONTINUED
SUB RATE ZONE XX-A

The rates under this schedule apply to all customer classes in the territories served subject to Rate Zone XX rates as noted in the Description of Territories Served section under this tariff unless otherwise specifically identified below.

Billing: At the request of a customer receiving service under Rate Zone 12-A, Group A-3, the customer may receive an estimated annual bill payable quarterly. Any difference between the estimated and actual consumption will be billed in the first quarter of the subsequent year.

QUARTERLY SERVICE CHARGE

Customer Charge ($)	Rate Zone 12-A		
	Group A-1	Group A-2	Group A-3

QUARTERLY CONSUMPTION CHARGE

Residential, Comercial, and Public Customer Consumption Charge			
(per 1,000 gallons water used)	$ 5.75	$ 8.78	
Special Charges:			
Residential, Comercial and Public:			
Minimum Charge per quarter	$ 26.93	$ 36.80	
Industrial Customer Consumption Charge (1)			
(per 1,000 gallons water used)			$ 6.93

Special Charges:
(1) The surcharge rate is set at $0.32/lb of Biochemical Oxygen Demand (BOD) and $0.285/lb for Suspended Solids (SS), where BOD or SS strength exceeds 300 mg/L on a daily basis.

SCHEDULE OF RATES

RATE ZONE XX – METERED AND UNMETERED CONTINUED
SUB RATE ZONE XX-B

The rates under this schedule apply to all customer classes in the territories served subject to Rate Zone XX rates as noted in the Description of Territories Served section under this tariff unless otherwise specifically identified below.

Billing: At the request of a customer receiving service under this rate zone, the customer may receive an estimated annual bill payable quarterly. Any difference between the estimated and actual consumption will be billed in the first quarter of the subsequent year.

QUARTERLY SERVICE CHARGE

Customer Charge ($)	Rate Zone 12-B

QUARTERLY CONSUMPTION CHARGE

Industrial Customer Consumption Charge (1) (per 1,000 gallons)	$	3.18

Special Charges:
(1) The surcharge rate is set at $0.32/lb of Biochemical Oxygen Demand (BOD) and $0.285/lb for Suspended Solids (SS), where BOD or SS strength exceeds 300 mg/L on a daily basis.

SCHEDULE OF RATES

RATE ZONE XX – METERED AND UNMETERED CONTINUED
SUB RATE ZONE XX-C

The rates under this schedule apply to all customer classes in the territories served subject to Rate Zone XX rates as noted in the Description of Territories Served section under this tariff unless otherwise specifically identified below.

Billing: At the request of a customer receiving service under this rate zone, the customer may receive an estimated annual bill payable quarterly. Any difference between the estimated and actual consumption will be billed in the first quarter of the subsequent year.

QUARTERLY SERVICE CHARGE

Customer Charge ($)	Rate Zone 12-C

QUARTERLY CONSUMPTION CHARGE

Commercial Customer Consumption Charge (per 1,000 gallons)	$	2.87
Industrial Customer Consumption Charge (per 1,000 gallons)	$	2.87

SCHEDULE OF RATES

RATE ZONE XX – METERED AND UNMETERED CONTINUED
SUB RATE ZONE XX-D

The rates under this schedule apply to all customer classes in the territories served subject to Rate Zone XX rates as noted in the Description of Territories Served section under this tariff unless otherwise specifically identified below.

Billing: At the request of a customer receiving service under this rate zone, the customer may receive an estimated annual bill payable quarterly. Any difference between the estimated and actual consumption will be billed in the first quarter of the subsequent year.

QUARTERLY SERVICE CHARGE

Customer Charge ($)	Rate Zone 12-D
Residential Fixed (per EDU)	$ 318.75
Commercial Fixed (per EDU)	$ 256.25

QUARTERLY CONSUMPTION CHARGE

Commercial Customer Consumption Charge (per 1,000 gallons water used)	$ 10.25

SCHEDULE OF RATES

RATE ZONE XX – METERED AND UNMETERED CONTINUED
SUB RATE ZONE XX-E

The rates under this schedule apply to all customer classes in the territories served subject to Rate Zone XX rates as noted in the Description of Territories Served section under this tariff unless otherwise specifically identified below.

QUARTERLY SERVICE CHARGE

Customer Charge ($)	Rate Zone 12-E
Fixed (per EDU)	
Riverside at Chadds Ford Development	$ 237.50
Preserve at Chadds Ford Development	$ 350.00

SCHEDULE OF RATES

RATE ZONE XX – METERED AND UNMETERED CONTINUED
SUB RATE ZONE XX-F

The rates under this schedule apply to all customer classes in the territories served subject to Rate Zone XX rates as noted in the Description of Territories Served section under this tariff unless otherwise specifically identified below.

QUARTERLY SERVICE CHARGE

Customer Charge ($)		Rate Zone 12-F
Fixed (per EDU)	$	243.00

Special Charges

ANNUAL SERVICE CHARGE

Nether Providence Township (Wholesale)

Fixed (per EDU)	$	972.00

SCHEDULE OF RATES

RATE ZONE XX – METERED AND UNMETERED CONTINUED
SUB RATE ZONE XX-G

The rates under this schedule apply to all customer classes in the territories served subject to Rate Zone XX rates as noted in the Description of Territories Served section under this tariff unless otherwise specifically identified below.

[HELD FOR FUTURE USE]

SCHEDULE OF RATES

RATE ZONE XX – METERED AND UNMETERED CONTINUED
SUB RATE ZONE XX-H

The rates under this schedule apply to all customer classes in the territories served subject to Rate Zone XX rates as noted in the Description of Territories Served section under this tariff unless otherwise specifically identified below.

Billing: At the request of a customer receiving service under this rate zone, the customer may receive an estimated annual bill payable quarterly. Any difference between the estimated and actual consumption will be billed in the first quarter of the subsequent year.

QUARTERLY SERVICE CHARGE

Customer Charge ($)	Rate Zone 12-H

QUARTERLY CONSUMPTION CHARGE

Group H-1		
Customer Consumption Charge (per 1,000 gallons)	$	2.71
Group H-2		
Customer Consumption Charge (per 1,000 gallons)	$	2.87
Group H-3 *		
Customer Consumption Charge (per 1,000 gallons)	$	2.89
Group H-4		
Customer Consumption Charge (per 1,000 gallons)	$	3.50

* Group H-3 will be billed annually

SCHEDULE OF RATES

HAULED WASTE DISPOSAL CHARGE

The following rates shall be charged to private contractors that haul and deliver waste at the Company's Western Regional Wastewater Treatment Plant in Chester, Pennsylvania.

Class I - Domestic Waste: Liquid waste collected from domestic residences and businesses. This includes liquid waste generated from onsite septic/drain field systems, portable toilets, dishwasher, toilet, shower and other liquid wastes typically generated by a domestic residence. This does not include commercial food processing, car wash, grease interceptors and industrial wastewaters. The combined Total Suspended Solids (TSS) and Chemical Oxygen Demand (COD) of this material is required to remain under 10,000 mg/l.

Class I Rate:	$0.02 per gallon

Class II - Package Plant: Sludge generated from domestic wastewater treatment plants serving residential communities. For a facility to be classified as a package plant it must have a design capacity less than or equal to 1.0 Million Gallons per Day.

Class II Rate: Waste stream with TSS <= 2.0%	$0.025 per gallon
For each additional TSS %	Surcharge of $0.01 per gallon

Class III - Industrial Wastewater: Liquid waste generated from non-domestic and non-food processing operations. This includes production wastewater, groundwater, stormwater and wash waters.

Class III Rate: COD less than 20,000 mg/l TSS less than 10,000 mg/l	$0.015 per gallon
For each additional 10,000 mg/l COD	Surcharge of $0.005 per gallon
For each additional 10,000 mg/l TSS	Surcharge of $0.010 per gallon
Class III Discount:	A discount of 5.00% shall apply for over 150,000 gallons per month.
	A discount of 10.00% shall apply for over 250,000 gallons per month

Class IV - Grease: Liquid waste generated from the cleaning of grease traps from kitchens and food establishments. This includes all material pumped out of grease interceptors, sink traps, and grease collection vessels.

Class IV Rate:	$0.06 per gallon
Class IV Discount:	A discount of 10.00% shall apply for over 300,000 gallons per month.

Class V - Form Waste: Sludge generated from Municipal Wastewater Treatment Plants with design flows greater than 1 Million Gallons per Day and Sludge generated from industrial facilities greater than 2.0% total solids

Class V Rate: Waste stream with TSS <= 4.0%	$0.045 per gallon
For each additional TSS %	Surcharge of $0.01 per gallon
A surcharge of 5.00% shall apply for less than 55.0% volatile solids.	
A surcharge of 10.00% shall apply for less than 40.0% volatile solids.	
Class V Discount:	A discount of 5.00% shall apply for greater than 70.0% volatile solids.
	A discount of 10.00% shall apply for greater than 90.0% volatile solids.
	A discount of 5.00% shall apply for over 150,000 gallons per month.
	A discount of 10.00% shall apply for over 250,000 gallons per month.

SCHEDULE OF RATES

HAULED WASTE DISPOSAL CHARGE (cont'd)

Class VI - Food Industrial Wastewaters: Liquid waste generated from food processing and manufacturing operations. This includes food prep, rinse waters, manufacturing, cleaning and off spec products. This does not include material pumped out of grease interceptors. Food Industrial wastewaters must have an Oil and Grease content of less than 20,000 mg/l and a Total Suspended Solids (TSS) Content of less than 10,000 mg/l.

Class VI Rate:	$0.025 per gallon

Class VII - Landfill Leachate: Liquid waste collected from leachate conveyance and stormwater systems at non-hazardous landfills.

Class VII Rate:	$0.01 per gallon

Class VIII - Significant Industrial Discharges: Liquid waste subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, subchapter N; and/or any Industrial discharge that exceeds 24,999 gallons per day.

Class VIII Rate:	Quoted Upon Request

1. The Company reserves the right to limit the total amount of residential septage received in a day and/or the total number of loads received from a single hauler on a per day basis based on maintaining proper operation of the Company's wastewater treatment plant.
2. At the discretion of the Company, the Company reserves the right to accept or reject commercially generated waste based on the amount and constituents in the waste or for other good reason as determined by the Company. The cost, as determined by the Company, for testing and disposal will be a multiple of the residential septage fee based on the type and strength of the waste.

APPLICATION EXHIBIT D – SECTIONS 5 AND 8 (CORRECTED COPY)

5. OWNED PROPERTY & EASEMENTS OF VALUE

Property that was directly purchased by the Authority and easements acquired with a significant purchase price are listed in Section 8. A majority of the properties owned by the Authority were transferred as part of the purchase of the facility and cannot be isolated as a separate value. The value of said properties is listed with a purchase price of zero and included in the original purchase price of the facilities listed in Section 8 – "List of Assets and Costs". An easement listing is provided in Section 8.

8. LIST OF ASSETS AND COSTS

DELCORA WASTEWATER SYSTEM
SUMMARY OF ANALYSIS OF ORIGINAL COST OF WASTEWATER SYSTEM
AS OF DECEMBER 13, 2019
REVISED MAY 8, 2020

ACCOUNT	DESCRIPTION		ORIGINAL COST ($)
353.2	LAND AND LAND RIGHTS - COLLECTION	$	-
353.3	LAND AND LAND RIGHTS - PUMPING	$	131,500.00
353.7	LAND AND LAND RIGHTS - TREATMENT	$	-
354.3	STRUCTURES AND IMPROVEMENTS - PUMPING	$	28,944,363.79
354.4	STRUCTURES AND IMPROVEMENTS - TREATMENT	$	12,681,792.80
354.7	STRUCTURES AND IMPROVEMENTS - GENERAL PLANT	$	2,434,828.00
360.21	COLLECTION SEWERS - FORCE - MAINS	$	40,269,449.52
361.21	COLLECTION SEWERS - GRAVITY - MAINS	$	8,324,260.54
361.23	COLLECTION SEWERS - GRAVITY - MANHOLES	$	3,473,591.30
362.2	SPECIAL COLLECTING STRUCTURES	$	8,739,493.81
363.2	SERVICES TO CUSTOMERS	$	307,904.86
364.2	FLOW MEASURING DEVICES	$	634,716.65
365.2	FLOW MEASURING INSTALLATIONS	$	12,625.00
371.3	PUMPING EQUIPMENT	$	11,042,301.00
380.3	TREATMENT AND DISPOSAL EQUIPMENT - PUMP STATIONS	$	37,071,005.38
380.4	TREATMENT AND DISPOSAL EQUIPMENT	$	105,317,582.56
390.7	COMPUTER AND SOFTWARE	$	311,997.68
391.7	TRANSPORTATION EQUIPMENT	$	3,788,348.39
396.7	COMMUNICATION EQUIPMENT	$	196,855.00
	SYSTEM TOTAL	$	263,682,616.27

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
353.20	LAND AND LAND RIGHTS - COLLECTION						
	Chester City	FM - Folio Number 49-10-01026-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00129-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00117-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00125-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-10-00925-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-11-00112-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00109-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-11-01969-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00135-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-08-01309-01		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-11-01311-01		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-11-01310-95		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-09-00081-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-09-00945-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-09-00487-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-09-00866-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-09-00795-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-11-00142-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-08-00707-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-06-00080-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00127-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-11-00143-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-11-00144-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-11-00145-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-11-00146-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00042-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-06-00010-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-06-00077-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-06-00078-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00130-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-11-00130-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-11-00132-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-11-00129-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-11-00149-90		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-11-01310-97		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00110-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-11-01972-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-11-00015-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-06-00735-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-06-01029-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-06-01030-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-06-01031-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-06-01032-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00041-09		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-08-00087-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-10-00089-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-11-00136-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-11-00117-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-10-00103-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-10-00104-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-10-00102-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00151-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00150-00		DELCORA Records/GIS/Abstract Search			$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	Chester City	FM - Folio Number 49-07-00138-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00136-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00134-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00133-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00132-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00131-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00121-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00120-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-06-00064-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-06-00731-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-06-00008-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-06-00009-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-06-00062-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-06-00063-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-06-00065-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-06-00076-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-06-00075-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-06-00079-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-06-00081-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00111-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00112-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00113-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00114-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00115-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00116-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00118-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00119-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00128-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00137-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-01323-02		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-01323-03		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00152-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00153-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00154-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00155-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00156-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00157-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00035-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-10-00924-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-10-00807-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-10-00951-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-10-00137-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-10-00138-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-11-00116-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-11-00147-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-11-00151-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-11-00153-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-11-01970-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-11-01971-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-11-01973-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-11-01974-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-08-00088-91		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-10-01025-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-10-00969-00		DELCORA Records/GIS/Abstract Search			$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	Chester City	FM - Folio Number 49-08-00789-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-06-00007-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-06-00006-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-01323-01		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-10-00711-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-10-00806-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-11-01313-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-10-00604-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-06-00003-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00364-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00262-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00263-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00264-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00265-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00266-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00267-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00268-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00269-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00270-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00271-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00362-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00365-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00366-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00367-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00368-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00369-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00370-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00371-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00372-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00373-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00374-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00375-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00376-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00377-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00378-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00379-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00380-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00381-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-06-00182-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-06-00168-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-06-00283-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00423-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-06-00180-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-06-00049-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-07-00039-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00228-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00202-01		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00578-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00236-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00237-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00238-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00239-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00240-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00241-00		DELCORA Records/GIS/Abstract Search			$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	Chester City	FM - Folio Number 49-03-00242-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00244-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00245-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00246-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00247-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00248-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00700-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00701-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00230-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00231-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00232-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00233-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00234-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00235-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-03-00577-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-11-00007-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	FM - Folio Number 49-05-00227-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-09-00673-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01310-93		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-09-00674-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01311-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-00648-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-06-00500-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-06-00568-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01084-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01769-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01779-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-10-00608-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-10-00607-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-04-00475-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-03-00450-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-03-00458-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-03-00243-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-00270-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-00959-01		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01182-90		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01478-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-02699-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-01374-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-01554-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-05-00431-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-01374-91		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-01374-86		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-03070-01		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-06-00790-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-03-00012-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-03-00800-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-03-00105-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-03070-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01306-04		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01306-12		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01306-13		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01306-20		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01306-24		DELCORA Records/GIS/Abstract Search			$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	Chester City	Gravity Main - Folio Number 49-11-01306-32		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01306-33		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01306-35		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01306-36		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01306-37		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01306-38		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01306-39		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01021-06		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01037-06		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-00007-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-00007-01		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-00008-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-00009-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-00010-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-00011-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-00012-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-00039-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-00061-01		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-00098-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-00555-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-00801-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-00890-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-00891-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-00892-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-00893-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-00894-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-00895-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-00896-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-00897-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-00898-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-00899-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-00900-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-00901-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-00902-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-00903-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-00904-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-00905-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-00906-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01035-01		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01222-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01369-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01456-01		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01489-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01590-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01591-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01592-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01593-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01594-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01595-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01596-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01597-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01598-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01599-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01600-00		DELCORA Records/GIS/Abstract Search			$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	Chester City	Gravity Main - Folio Number 49-01-01601-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01602-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01603-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01604-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01605-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01606-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01607-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01608-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01609-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01662-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01663-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01664-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01665-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01666-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01667-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01681-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01681-01		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-01763-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-02025-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-02180-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-02222-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-02223-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-02224-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-02225-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-02226-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-02227-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-02228-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-02229-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-02230-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-02231-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-02232-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-02233-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-02234-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-02235-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-02236-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-02251-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-02498-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-02499-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-02589-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-02701-01		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-01-02705-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-00059-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-00060-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-00061-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-00062-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-00079-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-00080-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-00081-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-00082-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-00083-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-00084-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-00085-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-00086-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-00087-00		DELCORA Records/GIS/Abstract Search			$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	Chester City	Gravity Main - Folio Number 49-02-00088-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-00089-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-00090-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-00091-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-00092-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-00093-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-00094-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-00095-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-00096-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-00097-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-00098-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-00781-01		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-01129-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-01130-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-01131-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-01132-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-01133-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-01134-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-01135-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-01136-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-01137-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-01138-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-01139-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-01140-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-01141-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-01142-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-01143-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-01144-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-01473-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-02-01503-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-03-00428-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-03-00497-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-05-00347-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-05-00478-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-06-00386-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-06-00411-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-06-00446-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-06-00447-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-06-00448-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-00041-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-00041-03		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-00041-15		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-00312-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-00390-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-00769-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-00782-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-00829-01		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-00877-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-00886-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-00903-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-00904-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-00906-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-00995-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01086-00		DELCORA Records/GIS/Abstract Search			$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	Chester City	Gravity Main - Folio Number 49-07-01087-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01088-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01155-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01165-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01275-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01276-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01277-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01278-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01280-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01281-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01282-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01283-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01284-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01286-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01292-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01314-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01315-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01317-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01428-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01429-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01430-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01431-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01433-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01434-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01435-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01436-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01437-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01438-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01439-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01440-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01441-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01443-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01444-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01445-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01446-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01447-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01448-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01449-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01469-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01470-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01471-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01472-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01473-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01474-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01475-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01476-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01479-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01481-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01482-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01483-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01484-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01485-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01486-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-07-01767-00		DELCORA Records/GIS/Abstract Search			$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	Chester City	Gravity Main - Folio Number 49-08-00261-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-00385-01		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-00386-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-00388-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-00431-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-00649-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-00743-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-00744-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-00745-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-00746-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-00751-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-00753-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-00778-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-01000-05		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-01000-09		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-01000-27		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-01000-28		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-01000-29		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-01000-30		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-01000-31		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-01000-32		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-01000-33		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-01000-34		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-01000-35		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-01000-36		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-01000-37		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-01000-38		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-01000-39		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-01000-44		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-01084-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-01088-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-01107-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-01112-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-08-01349-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-09-00258-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-09-00299-01		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-09-00332-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-09-00497-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-09-00498-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-09-00499-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-09-00587-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-09-00587-01		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-09-00666-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-09-00667-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-09-00668-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-09-00669-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-09-00670-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-09-00671-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-09-00672-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-09-00696-02		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-09-00911-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-09-00912-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-09-00913-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-09-00914-00		DELCORA Records/GIS/Abstract Search			$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	Chester City	Gravity Main - Folio Number 49-09-01179-05		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-10-00032-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-10-00334-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-10-00429-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-10-00460-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-10-00469-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-10-00530-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-10-00532-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-10-00533-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-10-00534-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-10-00535-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-10-00675-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-10-00942-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-10-01082-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-10-01083-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-10-01084-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-10-01085-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-10-01086-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-10-01087-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-10-01088-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-10-01089-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-10-01090-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-10-01091-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-10-01092-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-10-01093-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-10-01094-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-10-01095-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-00433-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-00676-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-00810-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-00849-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01000-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01001-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01002-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01054-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01057-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01059-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01125-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01164-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01165-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01166-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01167-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01168-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01169-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01170-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-01		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-02		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-03		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-04		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-05		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-06		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-07		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-08		DELCORA Records/GIS/Abstract Search			$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	Chester City	Gravity Main - Folio Number 49-11-01171-25		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-26		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-27		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-28		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-29		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-30		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-31		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-32		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-33		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-34		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-35		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-36		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-37		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-38		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-39		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-40		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-41		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-42		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-43		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-44		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-45		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-46		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-47		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-55		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-56		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-57		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-58		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-59		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-60		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-61		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-62		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01171-63		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01313-05		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01402-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01454-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01454-01		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01504-02		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01661-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01711-02		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01772-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01776-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01807-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01808-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01809-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01835-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01837-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01855-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01947-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-01994-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-02123-01		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-02123-90		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-02137-01		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-02350-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-02353-01		DELCORA Records/GIS/Abstract Search			$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	Chester City	Gravity Main - Folio Number 49-11-02499-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-02500-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-02501-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-02502-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-02503-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Gravity Main - Folio Number 49-11-02843-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Water - Folio Number 49-10-00603-02		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Folio Number 49-10-00603-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester Township	FM - Folio Number 07-00-02045-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester Township	FM - Folio Number 07-00-00236-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester Township	FM - Folio Number 07-00-00289-07		DELCORA Records/GIS/Abstract Search			$ -
	Chester Township	FM - Folio Number 07-00-00289-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester Township	FM - Folio Number 07-00-00262-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester Township	FM - Folio Number 07-00-00260-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester Township	FM - Folio Number 07-00-00260-01		DELCORA Records/GIS/Abstract Search			$ -
	Chester Township	FM - Folio Number 07-00-00207-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester Township	FM - Folio Number 07-00-00392-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester Township	FM - Folio Number 07-00-00417-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester Township	FM - Folio Number 07-00-00418-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester Township	FM - Folio Number 07-00-00419-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester Township	FM - Folio Number 07-00-00420-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester Township	Gravity Main - Folio Number 07-00-00275-01		DELCORA Records/GIS/Abstract Search			$ -
	Chester Township	Gravity Main - Folio Number 07-00-00202-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester Township	Gravity Main - Folio Number 07-00-00275-02		DELCORA Records/GIS/Abstract Search			$ -
	Chester Township	Gravity Main - Folio Number 07-00-00137-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester Township	Gravity Main - Folio Number 07-00-00226-04		DELCORA Records/GIS/Abstract Search			$ -
	Chester Township	Gravity Main - Folio Number 07-00-00275-04		DELCORA Records/GIS/Abstract Search			$ -
	Chester Township	Gravity Main - Folio Number 07-00-00322-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester Township	Gravity Main - Folio Number 07-00-00853-34		DELCORA Records/GIS/Abstract Search			$ -
	Chester Township	Gravity Main - Folio Number 07-00-00854-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester Township	Gravity Main - Folio Number 07-00-00866-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester Township	Gravity Main - Folio Number 07-00-00883-07		DELCORA Records/GIS/Abstract Search			$ -
	Eddystone Borough	FM - Folio Number 18-00-00500-05		DELCORA Records/GIS/Abstract Search			$ -
	Eddystone Borough	FM - Folio Number 18-00-00556-00		DELCORA Records/GIS/Abstract Search			$ -
	Eddystone Borough	FM - Folio Number 18-00-00556-01		DELCORA Records/GIS/Abstract Search			$ -
	Eddystone Borough	FM - Folio Number 18-00-00500-07		DELCORA Records/GIS/Abstract Search			$ -
	Eddystone Borough	FM - Folio Number 18-00-00096-00		DELCORA Records/GIS/Abstract Search			$ -
	Eddystone Borough	Gravity Main - Folio Number 49-03-00183-00		DELCORA Records/GIS/Abstract Search			$ -
	Eddystone Borough	Gravity Main - Folio Number 49-03-00186-00		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	FM - Folio Number 30-00-01143-00		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	FM - Folio Number 30-00-01167-00		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	FM - Folio Number 19-00-00330-09		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00261-02		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00326-16		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00163-88		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00326-17		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00330-01		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00330-02		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00330-03		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00134-00		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00136-03		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00037-72		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00037-71		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00261-03		DELCORA Records/GIS/Abstract Search			$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	Edgmont Township	Gravity Main - Folio Number 19-00-00294-00		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00425-01		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00395-00		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00419-10		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00030-56		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00332-09		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00383-75		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00383-76		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00325-64		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00079-59		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00079-60		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00079-61		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00079-62		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00079-63		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00079-64		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00079-65		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00037-88		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00037-51		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00037-52		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00037-56		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00037-70		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00037-73		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00037-74		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00037-75		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00037-76		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00037-77		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00037-79		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00037-80		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00037-81		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00037-82		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00029-56		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00029-57		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00029-84		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00025-06		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00163-87		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00163-89		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00163-90		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00326-10		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00326-11		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00326-12		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00326-13		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00326-14		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00326-15		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00326-21		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00064-27		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00064-28		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00064-29		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00030-28		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00030-36		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00030-37		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00030-38		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00030-39		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00284-31		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00284-43		DELCORA Records/GIS/Abstract Search			$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	Edgmont Township	Gravity Main - Folio Number 19-00-00284-51		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00284-76		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00285-33		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00285-38		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00287-10		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00287-11		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00288-23		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00288-32		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00288-34		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00288-45		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00288-81		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00288-97		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00163-41		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00163-42		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00030-10		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00030-11		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00030-15		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00030-16		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00030-17		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00030-18		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00030-19		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00330-45		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00037-94		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00030-57		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00030-58		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00030-59		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00030-69		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00030-82		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00060-76		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00060-77		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00054-51		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00064-00		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00448-03		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00448-04		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00448-05		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00263-51		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00263-54		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00263-55		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Gravity Main - Folio Number 19-00-00037-54		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-50		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-51		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-52		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-53		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-54		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-55		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-56		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-57		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-58		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-59		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-60		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-61		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-62		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-63		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-64		DELCORA Records/GIS/Abstract Search			$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-65		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-66		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-67		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-68		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-69		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-70		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-71		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-72		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-73		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-74		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-75		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-76		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-77		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-78		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-79		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-80		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-81		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-82		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-83		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-84		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-85		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-86		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Trotters Court - Folio Number 19-00-00377-87		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Folio Number 19-00-00349-00		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Folio Number 19-00-00332-11		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Folio Number 19-00-00332-10		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Folio Number 19-00-00000-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	FM - Folio Number 39-00-00163-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00082-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00041-50		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00161-48		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00040-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00068-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00009-01		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00030-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00031-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00032-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00033-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00034-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00035-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00036-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00037-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00039-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00041-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00042-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00043-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00045-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00046-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00047-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00048-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00049-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00052-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00053-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00054-00		DELCORA Records/GIS/Abstract Search			$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00056-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00056-01		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00057-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00058-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00059-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00060-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00069-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00069-04		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00069-06		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00159-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00160-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00161-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00161-07		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00161-09		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00161-10		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00161-11		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00161-12		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00161-13		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00161-14		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00161-15		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00161-16		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00161-17		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00161-18		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00161-19		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00161-20		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00161-21		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00161-27		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00161-35		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00161-36		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00161-37		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00161-38		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00161-39		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00161-40		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00161-41		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00161-45		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00161-47		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00161-49		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00161-50		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00161-52		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00007-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00020-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00020-01		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00009-03		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00009-04		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00022-01		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00022-02		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00022-04		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00022-03		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00022-05		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00187-37		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00009-05		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00018-23		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00009-06		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00009-09		DELCORA Records/GIS/Abstract Search			$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00018-13		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00022-16		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00022-17		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00009-10		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00187-02		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00024-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00025-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00026-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00027-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00028-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00029-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00008-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00018-04		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00018-03		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00018-05		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00018-06		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00101-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00102-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00115-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00125-01		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00125-02		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00125-04		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00125-05		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00153-01		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00154-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00001-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00205-02		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00154-01		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00197-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00005-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00019-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00021-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00022-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00075-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00075-01		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00079-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00080-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00081-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00083-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00088-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00089-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00090-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00100-02		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00103-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00116-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00117-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00118-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00129-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00130-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00133-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00135-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00136-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00137-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00184-00		DELCORA Records/GIS/Abstract Search			$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00185-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00186-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00186-01		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00187-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00188-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00189-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00190-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00199-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00205-01		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Gravity Main - Folio Number 39-00-00212-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Folio Number 39-00-00000-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Folio Number 39-00-00115-01		DELCORA Records/GIS/Abstract Search			$ -
	Aston Township	FM - Folio Number 02-00-02914-04		DELCORA Records/GIS/Abstract Search			$ -
	Aston Township	FM - Folio Number 02-00-02914-00		DELCORA Records/GIS/Abstract Search			$ -
	Ridley Township	FM - Folio Number 38-01-00092-00		DELCORA Records/GIS/Abstract Search			$ -
	Ridley Township	FM - Folio Number 38-06-00425-02		DELCORA Records/GIS/Abstract Search			$ -
	Ridley Township	FM - Folio Number 38-06-00421-00		DELCORA Records/GIS/Abstract Search			$ -
	Ridley Township	FM - Folio Number 38-06-00502-01		DELCORA Records/GIS/Abstract Search			$ -
	Ridley Township	FM - Folio Number 38-06-00425-03		DELCORA Records/GIS/Abstract Search			$ -
	Ridley Township	FM - Folio Number 38-06-00504-00		DELCORA Records/GIS/Abstract Search			$ -
	Ridley Township	FM - Folio Number 38-06-00425-01		DELCORA Records/GIS/Abstract Search			$ -
	Ridley Township	FM - Folio Number 18-00-00500-03		DELCORA Records/GIS/Abstract Search			$ -
	Ridley Township	FM - Folio Number 18-00-00500-06		DELCORA Records/GIS/Abstract Search			$ -
	Ridley Township	FM - Folio Number 38-01-00092-02		DELCORA Records/GIS/Abstract Search			$ -
	Ridley Township	FM - Folio Number 38-06-00854-02		DELCORA Records/GIS/Abstract Search			$ -
	Ridley Township	FM - Folio Number 38-06-00903-01		DELCORA Records/GIS/Abstract Search			$ -
	Ridley Township	Gravity Main - Folio Number 38-02-00222-02		DELCORA Records/GIS/Abstract Search			$ -
	Ridley Township	Gravity Main - Folio Number 38-02-01693-99		DELCORA Records/GIS/Abstract Search			$ -
	Norwood	FM - Folio Number 31-00-01383-02		DELCORA Records/GIS/Abstract Search			$ -
	Norwood	FM - Folio Number 31-00-00609-03		DELCORA Records/GIS/Abstract Search			$ -
	Norwood	FM - Folio Number 31-00-00609-01		DELCORA Records/GIS/Abstract Search			$ -
	Norwood	FM - Folio Number 31-00-00609-02		DELCORA Records/GIS/Abstract Search			$ -
	Folcroft	FM - Folio Number 20-00-01130-02		DELCORA Records/GIS/Abstract Search			$ -
	Folcroft	FM - Folio Number 20-00-00063-01		DELCORA Records/GIS/Abstract Search			$ -
	Folcroft	FM - Folio Number 20-00-00028-01		DELCORA Records/GIS/Abstract Search			$ -
	Folcroft	FM - Folio Number 20-00-01127-00		DELCORA Records/GIS/Abstract Search			$ -
	Folcroft	FM - Folio Number 20-00-01135-01		DELCORA Records/GIS/Abstract Search			$ -
	Folcroft	FM - Folio Number 20-00-01135-03		DELCORA Records/GIS/Abstract Search			$ -
	Folcroft	FM - Folio Number 20-00-01135-05		DELCORA Records/GIS/Abstract Search			$ -
	Folcroft	FM - Folio Number 20-00-01251-02		DELCORA Records/GIS/Abstract Search			$ -
	Folcroft	FM - Folio Number 20-00-00763-00		DELCORA Records/GIS/Abstract Search			$ -
	Folcroft	FM - Folio Number 20-00-01507-01		DELCORA Records/GIS/Abstract Search			$ -
	Darby Township	FM - Folio Number 15-00-02052-00		DELCORA Records/GIS/Abstract Search			$ -
	Darby Township	FM - Folio Number 15-00-02058-00		DELCORA Records/GIS/Abstract Search			$ -
	Prospect Park	FM - Folio Number 33-00-00867-00		DELCORA Records/GIS/Abstract Search			$ -
	Prospect Park	FM - Folio Number 33-00-00228-10		DELCORA Records/GIS/Abstract Search			$ -
	Prospect Park	FM - Folio Number 33-00-00232-50		DELCORA Records/GIS/Abstract Search			$ -
	Prospect Park	FM - Folio Number 33-00-00233-00		DELCORA Records/GIS/Abstract Search			$ -
	Prospect Park	FM - Folio Number 33-00-00852-01		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	FM - Folio Number 24-00-00032-04		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	FM - Folio Number 24-00-00481-02		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	FM - Folio Number 24-00-00638-13		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	FM - Folio Number 24-00-00638-14		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	FM - Folio Number 24-00-00638-15		DELCORA Records/GIS/Abstract Search			$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	Marcus Hook Borough	FM - Folio Number 24-00-00638-17		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00983-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00723-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00724-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00725-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00722-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00747-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00745-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00744-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00905-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00326-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00746-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00325-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00324-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00346-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00347-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00039-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00038-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00011-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00010-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00876-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00009-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00875-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00874-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00859-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00979-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00318-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00714-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00868-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00005-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00337-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00031-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00950-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00317-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00713-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00867-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00004-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00949-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00316-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00336-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00030-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00712-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00948-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00737-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00866-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00003-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00315-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00335-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00029-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00865-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00711-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00002-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00314-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00736-00		DELCORA Records/GIS/Abstract Search			$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00977-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00624-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00625-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00313-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00947-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00001-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00626-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00735-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00710-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00623-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00312-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00946-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00627-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00734-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00733-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00945-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00311-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00709-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00628-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00944-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00732-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00629-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00943-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00310-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00630-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00708-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00631-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00731-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00942-00		DELCORA Records/GIS/Abstract Search			$ -
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	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00621-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00705-00		DELCORA Records/GIS/Abstract Search			$ -
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	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00616-00		DELCORA Records/GIS/Abstract Search			$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00941-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00940-00		DELCORA Records/GIS/Abstract Search			$ -
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	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00024-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00069-00		DELCORA Records/GIS/Abstract Search			$ -
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	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00017-00		DELCORA Records/GIS/Abstract Search			$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
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	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00016-00		DELCORA Records/GIS/Abstract Search			$ -
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	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00850-00		DELCORA Records/GIS/Abstract Search			$ -
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	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00739-00		DELCORA Records/GIS/Abstract Search			$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
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	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00339-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00738-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00715-00		DELCORA Records/GIS/Abstract Search			$ -
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	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00951-00		DELCORA Records/GIS/Abstract Search			$ -
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	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00323-00		DELCORA Records/GIS/Abstract Search			$ -
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	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00344-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00085-00		DELCORA Records/GIS/Abstract Search			$ -
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	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00076-00		DELCORA Records/GIS/Abstract Search			$ -
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	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00074-00		DELCORA Records/GIS/Abstract Search			$ -
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	Marcus Hook Borough	Gravity Main - Folio Number 24-00-00309-05		DELCORA Records/GIS/Abstract Search			$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
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	Trainer Borough	Gravity Main - Folio Number 46-00-00659-03		DELCORA Records/GIS/Abstract Search			$ -
	Trainer Borough	Gravity Main - Folio Number 46-00-00485-55		DELCORA Records/GIS/Abstract Search			$ -
	Trainer Borough	Gravity Main - Folio Number 46-00-00485-70		DELCORA Records/GIS/Abstract Search			$ -
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	Trainer Borough	Gravity Main - Folio Number 46-00-00325-01		DELCORA Records/GIS/Abstract Search			$ -
	Trainer Borough	Gravity Main - Folio Number 46-00-00659-01		DELCORA Records/GIS/Abstract Search			$ -
	Trainer Borough	Gravity Main - Folio Number 46-00-00330-00		DELCORA Records/GIS/Abstract Search			$ -
	Trainer Borough	Gravity Main - Folio Number 46-00-00189-00		DELCORA Records/GIS/Abstract Search			$ -
	Trainer Borough	Gravity Main - Folio Number 46-00-00192-00		DELCORA Records/GIS/Abstract Search			$ -
	Trainer Borough	Gravity Main - Folio Number 46-00-00191-00		DELCORA Records/GIS/Abstract Search			$ -
	Trainer Borough	Gravity Main - Folio Number 46-00-00681-00		DELCORA Records/GIS/Abstract Search			$ -
	Trainer Borough	Gravity Main - Folio Number 46-00-00188-00		DELCORA Records/GIS/Abstract Search			$ -
	Trainer Borough	Gravity Main - Folio Number 46-00-00636-35		DELCORA Records/GIS/Abstract Search			$ -
	Trainer Borough	Gravity Main - Folio Number 46-00-00637-00		DELCORA Records/GIS/Abstract Search			$ -
	Trainer Borough	Gravity Main - Folio Number 46-00-00638-00		DELCORA Records/GIS/Abstract Search			$ -
	Trainer Borough	Gravity Main - Folio Number 46-00-00365-00		DELCORA Records/GIS/Abstract Search			$ -
	Trainer Borough	Gravity Main - Folio Number 46-00-00365-01		DELCORA Records/GIS/Abstract Search			$ -
	Trainer Borough	Gravity Main - Folio Number 46-00-00366-00		DELCORA Records/GIS/Abstract Search			$ -
	Trainer Borough	Gravity Main - Folio Number 46-00-00368-00		DELCORA Records/GIS/Abstract Search			$ -
	Trainer Borough	Gravity Main - Folio Number 46-00-00525-01		DELCORA Records/GIS/Abstract Search			$ -
	Trainer Borough	Gravity Main - Folio Number 46-00-00525-03		DELCORA Records/GIS/Abstract Search			$ -
	Concord Township	FM - Folio Number 13-00-00611-58		DELCORA Records/GIS/Abstract Search			$ -
	Concord Township	Gravity Main - Folio Number 13-00-01060-00		DELCORA Records/GIS/Abstract Search			$ -
	Concord Township	Gravity Main - Folio Number 13-00-01060-08		DELCORA Records/GIS/Abstract Search			$ -
	Concord Township	Gravity Main - Folio Number 13-00-00611-56		DELCORA Records/GIS/Abstract Search			$ -
	Upland Borough	Gravity Main - Folio Number 47-00-00948-00		DELCORA Records/GIS/Abstract Search			$ -
	Upland Borough	Gravity Main - Folio Number 47-00-00261-09		DELCORA Records/GIS/Abstract Search			$ -
	Upland Borough	Gravity Main - Folio Number 47-00-00454-04		DELCORA Records/GIS/Abstract Search			$ -
	Upland Borough	Gravity Main - Folio Number 47-00-00454-05		DELCORA Records/GIS/Abstract Search			$ -
	Upland Borough	Gravity Main - Folio Number 47-00-00454-15		DELCORA Records/GIS/Abstract Search			$ -
	Upland Borough	Gravity Main - Folio Number 47-00-00261-03		DELCORA Records/GIS/Abstract Search			$ -
	Upland Borough	Gravity Main - Folio Number 47-00-00261-05		DELCORA Records/GIS/Abstract Search			$ -
	Upland Borough	Gravity Main - Folio Number 47-00-00291-00		DELCORA Records/GIS/Abstract Search			$ -
	Upland Borough	Gravity Main - Folio Number 47-00-00155-00		DELCORA Records/GIS/Abstract Search			$ -
	Upland Borough	Gravity Main - Folio Number 47-00-00239-00		DELCORA Records/GIS/Abstract Search			$ -
	Upland Borough	Gravity Main - Folio Number 47-00-00261-02		DELCORA Records/GIS/Abstract Search			$ -
	Upland Borough	Gravity Main - Folio Number 47-00-00261-06		DELCORA Records/GIS/Abstract Search			$ -
	Upland Borough	Gravity Main - Folio Number 47-00-00293-00		DELCORA Records/GIS/Abstract Search			$ -
	Upland Borough	Gravity Main - Folio Number 47-00-00294-00		DELCORA Records/GIS/Abstract Search			$ -
	Upland Borough	Gravity Main - Folio Number 47-00-00286-03		DELCORA Records/GIS/Abstract Search			$ -
	Upland Borough	Gravity Main - Folio Number 47-00-00295-00		DELCORA Records/GIS/Abstract Search			$ -
	Upland Borough	Gravity Main - Folio Number 47-00-00327-00		DELCORA Records/GIS/Abstract Search			$ -
	Upland Borough	Gravity Main - Folio Number 47-00-00409-00		DELCORA Records/GIS/Abstract Search			$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	Upland Borough	Gravity Main - Folio Number 47-00-00423-00		DELCORA Records/GIS/Abstract Search			$ -
	Upland Borough	Gravity Main - Folio Number 47-00-00575-00		DELCORA Records/GIS/Abstract Search			$ -
	Upland Borough	Gravity Main - Folio Number 47-00-00576-00		DELCORA Records/GIS/Abstract Search			$ -
	Upland Borough	Gravity Main - Folio Number 47-00-00577-00		DELCORA Records/GIS/Abstract Search			$ -
	Upland Borough	Gravity Main - Folio Number 47-00-00579-00		DELCORA Records/GIS/Abstract Search			$ -
	Upland Borough	Gravity Main - Folio Number 47-00-00615-00		DELCORA Records/GIS/Abstract Search			$ -
	Upland Borough	Gravity Main - Folio Number 47-00-00757-00		DELCORA Records/GIS/Abstract Search			$ -
	Upland Borough	Gravity Main - Folio Number 47-00-00765-01		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-64		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-65		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-66		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-68		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-31		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-33		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00177-10		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00177-13		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00177-14		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00204-99		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-01		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00176-75		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00176-76		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00176-77		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00176-78		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00176-79		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00176-80		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00176-81		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00176-82		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00176-83		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00176-84		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00176-85		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00176-86		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00176-87		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00176-88		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00176-89		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00176-90		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00176-91		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00176-92		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00176-93		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00176-94		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00176-95		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00176-96		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00176-97		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00176-98		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00176-99		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00177-01		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00177-02		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00177-03		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00177-04		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00177-05		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00177-06		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00177-07		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00177-08		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00177-09		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00177-11		DELCORA Records/GIS/Abstract Search			$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00177-12		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00177-15		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00177-16		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00177-17		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00177-18		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00177-19		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00177-20		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00177-21		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00177-22		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00177-23		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00177-24		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00177-25		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00177-26		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-20		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-21		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-22		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-23		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-24		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-25		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-26		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-27		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-28		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-29		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-30		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-31		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-32		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-33		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-34		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-35		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-36		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-37		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-38		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-39		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-40		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-41		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-42		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-43		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-44		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-45		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-46		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-47		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-48		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-49		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-50		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-51		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-52		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-53		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-54		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-55		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-56		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-57		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-58		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-59		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-60		DELCORA Records/GIS/Abstract Search			$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-61		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-62		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-63		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-64		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-65		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-66		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-67		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-68		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-69		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-70		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-71		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-72		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-73		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-74		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-75		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-76		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-77		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-78		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-79		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-80		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-81		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-82		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-83		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-84		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-85		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-86		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-87		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-88		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00186-89		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-00		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-02		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-03		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-04		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-05		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-06		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-07		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-08		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-09		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-10		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-11		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-12		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-13		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-14		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-15		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-16		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-17		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-18		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-19		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-20		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-21		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-22		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-23		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-24		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-25		DELCORA Records/GIS/Abstract Search			$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-26		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-27		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-28		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-29		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-30		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-31		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-32		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-33		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-34		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-35		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-36		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-37		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00375-38		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00114-40		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00114-41		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00114-42		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00114-43		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00114-44		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00114-45		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00114-46		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00114-47		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00114-48		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00114-49		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00114-50		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00114-51		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00114-52		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00114-53		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00114-54		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00114-55		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00114-56		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00114-57		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00114-58		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00114-59		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00337-00		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-56		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-57		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-58		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-59		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-60		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-61		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-62		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-63		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-67		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-69		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-70		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-71		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-72		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-73		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-74		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-75		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-76		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-77		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-78		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-79		DELCORA Records/GIS/Abstract Search			$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-80		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-81		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-82		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-83		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-84		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-85		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-86		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-87		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-88		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-89		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-90		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-91		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-92		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-93		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00069-94		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-32		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-34		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-35		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-36		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-37		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-38		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-39		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-40		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-41		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-42		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-43		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-44		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-45		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-46		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-47		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-48		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-49		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-50		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-51		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-52		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-53		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-54		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-55		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-56		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-57		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-58		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-59		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-60		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-61		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-62		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-63		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-64		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-65		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-66		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-67		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-68		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-69		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-70		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-71		DELCORA Records/GIS/Abstract Search			$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-72		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-73		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-74		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-75		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-76		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-77		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-78		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-79		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-80		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-81		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-82		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-83		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-84		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-85		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00127-86		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00204-45		DELCORA Records/GIS/Abstract Search			$ -
	Chadds Ford Township	Gravity Main - Folio Number 04-00-00338-00		DELCORA Records/GIS/Abstract Search			$ -
	Lower Chichester	Gravity Main - Folio Number 08-00-00774-01		DELCORA Records/GIS/Abstract Search			$ -
	Lower Chichester	Gravity Main - Folio Number 09-00-03400-01		DELCORA Records/GIS/Abstract Search			$ -
	Nether Providence Township	Gravity Main - Folio Number 32-00-00082-00		DELCORA Records/GIS/Abstract Search			$ -
	Nether Providence Township	Gravity Main - Folio Number 34-00-00426-00		DELCORA Records/GIS/Abstract Search			$ -
	Nether Providence Township	Gravity Main - Folio Number 34-00-00648-01		DELCORA Records/GIS/Abstract Search			$ -
	Nether Providence Township	Gravity Main - Folio Number 34-00-00985-24		DELCORA Records/GIS/Abstract Search			$ -
	Nether Providence Township	Gravity Main - Folio Number 34-00-00985-25		DELCORA Records/GIS/Abstract Search			$ -
	Nether Providence Township	Gravity Main - Folio Number 34-00-00985-26		DELCORA Records/GIS/Abstract Search			$ -
	Nether Providence Township	Gravity Main - Folio Number 34-00-00985-27		DELCORA Records/GIS/Abstract Search			$ -
	Nether Providence Township	Gravity Main - Folio Number 34-00-00985-28		DELCORA Records/GIS/Abstract Search			$ -
	Nether Providence Township	Gravity Main - Folio Number 34-00-00985-29		DELCORA Records/GIS/Abstract Search			$ -
	Nether Providence Township	Gravity Main - Folio Number 34-00-01133-19		DELCORA Records/GIS/Abstract Search			$ -
	Nether Providence Township	Gravity Main - Folio Number 34-00-01324-01		DELCORA Records/GIS/Abstract Search			$ -
	Nether Providence Township	Gravity Main - Folio Number 34-00-02081-00		DELCORA Records/GIS/Abstract Search			$ -
	Nether Providence Township	Gravity Main - Folio Number 34-00-02081-02		DELCORA Records/GIS/Abstract Search			$ -
	Nether Providence Township	Gravity Main - Folio Number 34-00-02144-00		DELCORA Records/GIS/Abstract Search			$ -
	Nether Providence Township	Gravity Main - Folio Number 34-00-00592-01		DELCORA Records/GIS/Abstract Search			$ -
	Nether Providence Township	Gravity Main - Folio Number 34-00-00380-00		DELCORA Records/GIS/Abstract Search			$ -
	Nether Providence Township	Gravity Main - Folio Number 34-00-00380-01		DELCORA Records/GIS/Abstract Search			$ -
	Nether Providence Township	Gravity Main - Folio Number 34-00-00192-09		DELCORA Records/GIS/Abstract Search			$ -
	Nether Providence Township	Gravity Main - Folio Number 34-00-00969-06		DELCORA Records/GIS/Abstract Search			$ -
	Nether Providence Township	Gravity Main - Folio Number 34-00-00969-07		DELCORA Records/GIS/Abstract Search			$ -
	Nether Providence Township	Gravity Main - Folio Number 34-00-00969-08		DELCORA Records/GIS/Abstract Search			$ -
	Nether Providence Township	Gravity Main - Folio Number 34-00-00969-09		DELCORA Records/GIS/Abstract Search			$ -
	Nether Providence Township	Gravity Main - Folio Number 34-00-02064-00		DELCORA Records/GIS/Abstract Search			$ -
	Nether Providence Township	Gravity Main - Folio Number 34-00-02066-00		DELCORA Records/GIS/Abstract Search			$ -
	Nether Providence Township	Gravity Main - Folio Number 34-00-02067-00		DELCORA Records/GIS/Abstract Search			$ -
	Nether Providence Township	Gravity Main - Folio Number 34-00-02067-01		DELCORA Records/GIS/Abstract Search			$ -
	Nether Providence Township	Gravity Main - Folio Number 34-00-02285-00		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00056-00		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00057-00		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00058-00		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00059-00		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00060-00		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00061-00		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00061-01		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00062-00		DELCORA Records/GIS/Abstract Search			$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	Parkside Borough	Gravity Main - Folio Number 32-00-00063-00		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00063-01		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00065-00		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00066-00		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00067-00		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00068-00		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00069-00		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00070-00		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00071-00		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00072-00		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00073-00		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00074-00		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00075-00		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00076-00		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00077-00		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00078-00		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00079-00		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00080-00		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00652-00		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00653-00		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00094-01		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00164-00		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00329-00		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00387-01		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00585-11		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00595-01		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00598-22		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00598-24		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00598-25		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00598-26		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00598-27		DELCORA Records/GIS/Abstract Search			$ -
	Parkside Borough	Gravity Main - Folio Number 32-00-00598-28		DELCORA Records/GIS/Abstract Search			$ -
	TOTAL LAND AND LAND RIGHTS - COLLECTION						**$ -**
353.30	LAND AND LAND RIGHTS - PUMPING						
	(PS-28 FM) Briddle Way (EPS-1)	PS-28 FM	2014	2014 Agreement	Says both ROW and sanitary sewer easement		$ 40,000.00
	(PS-1) Chester	PS-1	1976	Deed No. 772A	Indenture deed b/t City of Chester and DELCORA		$ 12,000.00
	(PS-11) Marcus Hook	PS-11 & PS-11 FM	1977	Deed No. 652			$ 79,500.00
	(PS-A) - BROOKHAVEN ROAD PS	(PS-A) - BROOKHAVEN ROAD PS, Folio Number 39-00-00009-01, AREA 270 X 200	1966		See Note 1		$ -
	(PS-B) - OLD MILL PS	(PS-B) - OLD MILL PS, Folio Number 39-00-00006-00, AREA	1937		See Note 1		$ -
	(PS-10) - EDDYSTONE PS	(PS-10) - EDDYSTONE PS, Folio Number 18-00-00161-01, AREA 111 X 340 IRR LOT 1	2006		See Note 1		$ -
	(PS-3) - PS-6 WRTP	(PS-3) - PS-6 WRTP	2017		See Note 1		$ -
	(PS-4) - FELTONVILLE PS (CONCORD)	(PS-4) - FELTONVILLE PS (CONCORD)	1970		See Note 1		$ -
	(PS-7) - CENTRAL DELAWARE COUNTY PS	(PS-7) - CENTRAL DELAWARE COUNTY PS	1978		See Note 1		$ -
	(PS-8) - MUCKINIPATES PS	(PS-8) - MUCKINIPATES PS, Folio Number 31-00-00609-05, AREA 125 X 258 INTERIOR LOT	1978		See Note 1		$ -
	(PS-9) - DARBY CREEK PS	(PS-9) - DARBY CREEK PS	1974		See Note 1		$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	(PS-12) - PRICE STREET PS	(PS-12) - PRICE STREET PS	2009		See Note 1		$ -
	(PS-13) - SMITH STREET PS	(PS-13) - SMITH STREET PS	1997		See Note 1		$ -
	(PS-16) - BROOMALL STREET PS	(PS-16) - BROOMALL STREET PS	1964		See Note 1		$ -
	(PS-22) - DELAWARE AVENUE INJECTOR STA.	(PS-22) - DELAWARE AVENUE INJECTOR STA.	1979		See Note 1		$ -
	(PS-23) - VISCOSE VILLAGE PS	(PS-23) - VISCOSE VILLAGE PS	1965		See Note 1		$ -
	(PS-24) - STADIUM (RIVERFRONT) PS	(PS-24) - STADIUM (RIVERFRONT) PS	2009		See Note 1		$ -
	(PS-26) - LONGPOINT LANE INJECTOR STA.	(PS-26) - LONGPOINT LANE INJECTOR STA., Folio Number 39-00-00066-50, AREA 2.15 ACRES	1956		See Note 1		$ -
	(PS-27) - CHESTER-RIDLEY CREEK PS	(PS-27) - CHESTER-RIDLEY CREEK PS	2013		See Note 1		$ -
	(PS-29) - RUNNYMEADE PS (EPS-2)	(PS-29) - RUNNYMEADE PS (EPS-2)	2014		See Note 1		$ -
	(PS-30) - DREAM VALLEY PS (PS-3)	(PS-30) - DREAM VALLEY PS (PS-3)	2014		See Note 1		$ -
	(PS-31) - ROSE VALLEY PS	(PS-31) - ROSE VALLEY PS , Folio Number 39-00-00040-00, AREA 90 X 344 X IRR LOT 18	2016		See Note 1		$ -
	(PS-2) - 8TH STREET PS	(PS-2) - 8TH STREET PS	1951		See Note 1		$ -
	Chester City	Pump Station - Folio Number 49-11-01308-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Pump Station - Folio Number 49-08-00749-01		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Pump Station - Folio Number 49-06-00048-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester Township	Pump Station - Folio Number 07-00-00254-02		DELCORA Records/GIS/Abstract Search			$ -
	Eddystone Borough	Pump Station - Folio Number 18-00-00161-02		DELCORA Records/GIS/Abstract Search			$ -
	Eddystone Borough	Pump Station - Folio Number 18-00-00161-01		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Pump Station - Folio Number 19-00-00037-78		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Pump Station - Folio Number 19-00-00074-55		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Pump Station - Folio Number 19-00-00332-07		DELCORA Records/GIS/Abstract Search			$ -
	Edgmont Township	Pump Station - Folio Number 19-00-00047-51		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Pump Station - Folio Number 39-00-00066-50		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Pump Station - Folio Number 39-00-00055-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Pump Station - Folio Number 39-00-00009-02		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Pump Station - Folio Number 39-00-00207-00		DELCORA Records/GIS/Abstract Search			$ -
	Rose Valley Borough	Pump Station - Folio Number 39-00-00011-50		DELCORA Records/GIS/Abstract Search			$ -
	Aston Township	Pump Station - Folio Number 02-00-02914-01		DELCORA Records/GIS/Abstract Search			$ -
	Ridley Township	Pump Station - Folio Number 38-06-01149-00		DELCORA Records/GIS/Abstract Search			$ -
	Ridley Township	Pump Station - Folio Number 38-06-01147-00		DELCORA Records/GIS/Abstract Search			$ -
	Norwood	Pump Station - Folio Number 31-00-00609-05		DELCORA Records/GIS/Abstract Search			$ -
	Folcroft	Pump Station - Folio Number 20-00-01491-01		DELCORA Records/GIS/Abstract Search			$ -
	Darby Township	Pump Station - Folio Number 15-00-02050-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Pump Station - Folio Number 24-00-00129-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Pump Station - Folio Number 24-00-00130-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Pump Station - Folio Number 24-00-00151-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Pump Station - Folio Number 24-00-00152-00		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Pump Station - Folio Number 24-00-00155-01		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Pump Station - Folio Number 24-00-00032-03		DELCORA Records/GIS/Abstract Search			$ -
	Marcus Hook Borough	Pump Station - Folio Number 24-00-00637-01		DELCORA Records/GIS/Abstract Search			$ -
	Trainer Borough	Pump Station - Folio Number 46-00-00659-04		DELCORA Records/GIS/Abstract Search			$ -
	Trainer Borough	Pump Station - Folio Number 46-00-00376-01		DELCORA Records/GIS/Abstract Search			$ -
	Lower Chichester	Pump Station - Folio Number 08-00-00879-03		DELCORA Records/GIS/Abstract Search			$ -
	TOTAL LAND AND LAND RIGHTS - PUMPING						**$ 131,500.00**

Note 1: Property value included in original facilities purchase price (reference: Section 8 - List of Assets & Costs, Account Code 354.30)

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
353.70	LAND AND LAND RIGHTS - TREATMENT						
	Chester City	Admin Building - Folio Number 49-03-00346-01		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Admin Building - Folio Number 49-03-00739-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	Admin Building - Folio Number 49-03-00740-00		DELCORA Records/GIS/Abstract Search			$ -
	Chester City	WRTP - Folio Number 49-11-01315-00		DELCORA Records/GIS/Abstract Search			$ -
	TOTAL LAND AND LAND RIGHTS - TREATMENT						**$ -**
354.30	STRUCTURES AND IMPROVEMENTS - PUMPING						
	PS-A Brookhaven Road	(PS-A) - Initial facility cost including pump station, building, generator, fencing, paving, etc.	1966	2018 appraisel number, backdated to the correct year.			$ 13,222.96
	PS-B Old Mill	(PS-B) - Initial facility cost including pump station, building, generator, fencing, paving, etc.	1937	2018 appraisel number, backdated to the correct year.			$ 8,161.06
	PS-1 Chester	(PS-1) - Initial facility cost including pump station, building, generator, fencing, paving, etc.	1976	Contract Nos. 10, 11			$ 3,981,717.75
	PS-2 8th Street	(PS-2) - Initial facility cost including pump station, building, generator, fencing, paving, etc.	1951	CP-9607-C			$ 66,554.00
	PS-3 PS-6	(PS-3) - Initial facility cost including pump station, building, generator, fencing, paving, etc.	2017	Contract TC-1707-C	(PS-3) is the Influent Pump Station (PS-6) at the WRTP. Cost is included in Account Code 380.3.		$ -
	PS-4 Feltonville	(PS-4) - Initial facility cost including pump station, building, generator, fencing, paving, etc.	1970	2018 appraisel number, backdated to the correct year.			$ 17,920.42
	PS-7 Central Delaware County	(PS-7) - Initial facility cost including pump station, building, generator, fencing, paving, etc.	1978	Contract Nos. 18A, B, C, D	Original Cost for (PS-7) & (PS-8) included in Contract Nos. 18A, B, C, D		$ 5,121,775.71
	PS-8 Muckinipates	(PS-8) - Initial facility cost including pump station, building, generator, fencing, paving, etc.	1978	Contract Nos. 18A, B, C, D	Original Cost for (PS-7) & (PS-8) included in Contract Nos. 18A, B, C, D		$ -
	PS-9 Darby Creek	(PS-9) - Initial facility cost including pump station, building, generator, fencing, paving, etc.	1974	Contract Nos. 7, 9, 8.			$ 2,828,683.00
	PS-10 Eddystone	(PS-10) - Initial facility cost including pump station, building, generator, fencing, paving, etc.	2006	2018 appraisel number, backdated to the correct year.			$ 950,018.53
	PS-11 Marcus Hook	(PS-11) - Initial facility cost including pump station, building, generator, fencing, paving, etc.	1955	Weston			$ 389,440.99
	PS-12 Price Street	(PS-12) - Initial facility cost including pump station, building, generator, fencing, paving, etc.	2009	Contract PW-0809-C			$ 586,225.00
	PS-13 Smith Street	(PS-13) - Initial facility cost including pump station, building, generator, fencing, paving, etc.	1997	2018 appraisel number, backdated to the correct year.			$ 522,606.21
	PS-16 Broomall Street	(PS-16) - Initial facility cost including pump station, building, generator, fencing, paving, etc.	1964	2018 appraisel number, backdated to the correct year.			$ 42,481.72

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	PS-22 Delaware Avenue Ejector Sta.	(PS-22) - Initial facility cost including pump station, building, generator, fencing, paving, etc.	1979	2018 appraisel number, backdated to the correct year.			$ 38,968.15
	PS-23 Viscose Village	(PS-23) - Initial facility cost including pump station, building, generator, fencing, paving, etc.	1965	2018 appraisel number, backdated to the correct year.			$ 105,297.59
	PS-24 Stadium (aka Riverfront)	(PS-24) - Initial facility cost including pump station, building, generator, fencing, paving, etc.	2009	2018 appraisel number, backdated to the correct year.			$ 1,538,096.04
	PS-26 Longpoint Lane Ejector Sta.	(PS-26) - Initial facility cost including pump station, building, generator, fencing, paving, etc.	1956	2018 appraisel number, backdated to the correct year.			$ 8,979.67
	PS-27 Chester-Ridley Creek	(PS-27) - Initial facility cost including pump station, building, generator, fencing, paving, etc.	2013	Contract PW-1305-C			$ 8,647,630.00
	PS-28 Bridle Way (EPS-1)	(PS-28) - Initial facility cost including pump station, building, generator, fencing, paving, etc.	2014	Contract SW-1318-C	Original Cost for (PS-28), (PS-29), & (PS-30) included in Contract Nos. SW-1318-C		$ 2,314,900.00
	PS-29 Runnymeade (EPS-2)	(PS-29) - Initial facility cost including pump station, building, generator, fencing, paving, etc.	2014	Contract SW-1318-C	Original Cost for (PS-28), (PS-29), & (PS-30) included in Contract Nos. SW-1318-C		$ -
	PS-30 Dream Valley (EPS-3)	(PS-30) - Initial facility cost including pump station, building, generator, fencing, paving, etc.	2014	Contract SW-1318-C	Original Cost for (PS-28), (PS-29), & (PS-30) included in Contract Nos. SW-1318-C		$ -
	PS-31 Rose Valley	(PS-31) - Initial facility cost including pump station, building, generator, fencing, paving, etc.	2016	Contract PFR-1705-C			$ 1,748,785.00
	PS-33 Delaware River Interceptor Bypass	(PS-33) - Initial facility cost including pump station, building, generator, fencing, paving, etc.	2014	Estimate			$ 12,900.00
	TOTAL STRUCTURES AND IMPROVEMENTS - PUMPING						**$ 28,944,363.79**
354.40	STRUCTURES AND IMPROVEMENTS - TREATMENT						
	B-1 (Grit)	B-1 (Grit) - Electrical Updates	2018	TC-1717-C			$ 146,052.00
	B-1 (Grit)	B-1 (Grit) - Grit Removal System Rehabilation	2001	TC-0006-C, TC-0106-C**			$ 878,370.00
	B-1 (Grit)	B-1 (Grit) - Original Installation	1974	Original plant construction			$ 509,210.00
	B-2 (Control)	B-2 (Control) - Control Room Upgrade in B-2	2003	TC-0306-C			$ 130,900.00
	B-2 (Control)	B-2 (Control) - Original Installation	1974	Original plant construction			$ 3,407,361.00
	B-2 (Control)	B-2 (Control) - SCADA/Instrumentation Upgrade	2018	TC-1717-C			$ 383,719.00
	B-2 (Control)	B-2 (Control) - Security Upgrade Project	2005	P2005-09			$ 447,933.00
	B-2 (Control)	B-2 (Control) - Telemetry (SCADA)	1988	TC-8805-C			$ 142,621.00
	B-5 (Engineering)	B-5 (Engineering) - Architectural Upgrade B2, B3 & B5	2003	TC-0311-C: Not split			$ 2,266,464.00
	B-5 (Maintenance)	B-5 (Maintenance) - Domestic Hot Water Heater System At Maintenance & Stores at WRTP	2000	TC-0004-C (Re-Bid)			$ 18,816.00
	B-5 (Maintenance)	B-5 (Maintenance) - Original Installation	1992	TC-9208-C			$ 1,496,152.00
	B-7 (Garage)	B-7 (Garage) - DELCORA Vehicle Garage Construction	1989	TC-8906-C			$ 96,600.00
	B-7 (Garage)	B-7 (Garage) - Garage Roof & Insulation	2018	TC-1717-C			$ 74,838.00
	B-7 (Garage)	B-7 (Garage) - Original Installation	1989		Includes garage between Primary Clarifiers and Aeration Tanks.		$ 375,138.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	EPS-1 (Building only)	EPS-1 (Building only) - Original Installation	1972		Pumps and related equipment removed from service in 2018.		$ 121,787.00
	Maintenance Office (trailer)	Maintenance Office (trailer) - Original Installation	1994	DELCORA			$ 4,000.00
	Pre-Fabricated Metal Building	Pre-Fabricated Metal Building - Pre-Fabricated Metal Building with Partial Installation	2007	TC-0709-C			$ 94,800.00
	Roof Repairs	Roof Repairs - Roof Repairs at WRTP and 10 Remote Stations	2003	TPEW-0308-C			$ 792,476.00
	Roof Replacement	Roof Replacement - Roof Replacement - B-2; B-3; P-4	1993	TC-9304-C			$ 142,477.00
	Storage Sheds	Storage Sheds - Original Installation	2015	DELCORA			$ 50,800.00
	WRTP & Remote Pump Station	WRTP & Remote Pump Station - Coping & Masonry Repairs	2006	TC-0609-C			$ 294,000.00
	Corrine Village aka Pocopson Preserve	Corrine Village aka Pocopson Preserve WWTP - TREATMENT SYSTEM	2010	2018 appraisel number, backdated to the correct year.			$ 423,715.45
	Sheeder Tract aka Riverside	Sheeder Tract aka Riverside WWTP - TREATMENT SYSTEM	2007	2018 appraisel number, backdated to the correct year.			$ 383,563.35
	TOTAL STRUCTURES AND IMPROVEMENTS - TREATMENT						**$ 12,681,792.80**
354.70	STRUCTURES AND IMPROVEMENTS - GENERAL PLANT						
		Administration Building - Generator	2013	Weston			$ 104,328.00
		Administration Building - New administration building	1997	AC-9606-C			$ 1,749,072.00
		Administration Building - New Roof	2019	AC-1906-C			$ 174,000.00
		Remote Operations Building - Former SWDCMA STP control building	2016	Acquistion			$ 407,428.00
	TOTAL STRUCTURES AND IMPROVEMENTS - GENERAL PLANT						**$ 2,434,828.00**
360.21	COLLECTION SEWERS - FORCE - MAINS						
		Retired 48" PCCP FM - CPS -> Booth Street	1978	Contract 12		11,300	$ 2,435,466.00
	PS-1	(PS-1) Chester FM - 48" DI	2009	FC-0916-C	Original Cost included in Contract No. FC-0916-C	620	$ 11,706,121.00
	PS-1	(PS-1) Chester FM - 54" DI	2009	FC-0916-C	Original Cost included in Contract No. FC-0916-C	12,030	$ -
	PS-10	(PS-10) Eddystone FM - 8" CIP	1931	Cost based on Price & Smith Street FM.		1,921	$ 9,078.00
	PS-11	(PS-11) Sun - Marcus Hook FM - 30" PCCP	1977	Contract No. 15	Original Cost included in Contract No. 15	2,250	$ 2,031,340.57
	PS-11	(PS-11) Sun - Marcus Hook FM - 36" PCCP	1977	Contract No. 15	Original Cost included in Contract No. 15	5,695	$ -
	PS-11	(PS-11) Central Delaware Diversion FM - 36" DI	2000	CD-9911-C		17,693	$ 2,542,300.00
	PS-11	(PS-11) Marcus Hook FM FM - 16" CIP	1977	Aquired		94	$ 7,958.00
	PS-12	(PS-12) Price Street FM - 10" DI	2007	FW-0707-C	Original Cost included in Contract No. FW-0707-C	1,345	$ 949,741.00
	PS-13	(PS-13) Smith Street FM - 8" DI	2007	FW-0707-C	Original Cost included in Contract No. FW-0707-C	3,230	$ -
	PS-16	(PS-16) Broomall Street FM - 8" CIP	1964	Aquired		760	$ 18,572.00
	PS-2	(PS-2) 8th Street FM - 8" CIP	1951	Aquired		465	$ 6,592.00
	PS-22	(PS-22) Delaware Avenue Ejector FM - 4" CIP	1970	Aquired		345	$ 12,439.00
	PS-23	(PS-23) Viscose Village FM - 12" CIP	1965	Aquired		855	$ 21,675.00
	PS-24	(PS-24) Stadium FM - 10" DI	2010	Dedicated	Part II received 11/2009	4,650	$ 1,068,448.00
	PS-26	(PS-26) Longpoint Lane Ejector FM - 6" CIP	1956	Cost based on Price & Smith Street FM.		848	$ 14,731.00
	PS-27	(PS-27) Chester Ridley Creek FM - 30" DI	2013	FW-1304-C	Original Cost included in Contract No. FW-1304-C	10,410	$ 5,792,392.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	PS-27	(PS-27) Chester Ridley Creek FM - 30" HDPE	2013	FW-1304-C	Original Cost included in Contract No. FW-1304-C	4,770	$ -
	PS-28	(PS-28) Bridle EPS-1 FM - 8" fPVC	2014	SW-1318-C	Original Cost included in Contract No. SW-1318-C	2,022	$ -
	PS-29	(PS-29) Runnymeade EPS-2 FM - 10" fPVC	2014	SW-1318-C	Gradyville Road Original Cost included in Contract No. SW-1318-C	1,860	$ 4,933,283.45
	PS-30	(PS-30) Dream Valley EPS-3 FM - 2" fPVC	2014	SW-1318-C	Original Cost included in Contract No. SW-1318-C	698	$ -
	PS-31	(PS-31) Rose Valley FM - 6" HDPE	2017	PFR-1705-C		2,950	$ 998,650.00
	PS-33	(PS-33) Delaware River Interceptor Bypass FM - 8" HDPE	2016	Estimated - Weston		685	$ 121,500.00
	PS-4	(PS-4) Feltonville FM - 8" CIP	1970	Aquired		925	$ 33,351.00
	PS-7	(PS-7) Central Delaware FM - 36" PCCP	1977	Contract No. 20	Original Cost included in Contract No. 20	9,820	$ 2,774,989.00
	PS-8	(PS-8) Muckinipates FM - 48" PCCP	1977	Contract No. 20	Original Cost included in Contract No. 20	8,800	$ -
	PS-9	(PS-9) Darby Creek FM - 66" PCCP	1972	Contract No. 06	FM Sections 2 and 3	10,040	$ 2,099,084.50
			1974	Contract No. 06A	FM Sections 1 and 4	2,985	$ 2,579,569.00
	PS-A	(PS-A) Brookhaven Road FM - 8" Steel	1966	Cost based on Price & Smith Street FM.		1,050	$ 27,934.00
	PS-B	(PS-B) Old Mill FM - 6" CIP	1937	Cost based on Price & Smith Street FM.		2,550	$ 15,043.00
		Edgmont Low Pressure Mains FM - 2" HDPE	2014	SW-1318-C	6 lines Original Cost included in Contract No. SW-1318-C	4,484	$ -
		Edgmont Low Pressure Mains FM - 3" HDPE	2014	SW-1318-C	Original Cost included in Contract No. SW-1318-C	1,130	$ -
		Springhill Farms FM - 12" PVC	1990	Cost based on Bridle FM.		717	$ 69,192.00
	TOTAL COLLECTION SEWERS - FORCE - MAINS					**129,997**	**$ 40,269,449.52**
361.21	COLLECTION SEWERS - GRAVITY - MAINS						
		10" PVC	2016	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	273	$ 15,054.00
		10" VCP	1900	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	708	$ 366.00
		10" VCP	1930	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	31,762	$ 34,389.00
		10" VCP	1960	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	864	$ 3,797.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
		12" PVC	1970	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	1,129	$ 12,684.00
		12" PVC	1971	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	1,549	$ 19,925.00
		12" PVC	2008	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	700	$ 47,327.00
		12" VCP	1900	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	2,391	$ 1,887.00
		12" VCP	1930	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	29,590	$ 48,872.00
		12" VCP	1937	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	12,650	$ 24,186.00
		12" VCP	1960	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	3,762	$ 25,221.00
		12" VCP	1966	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	5,062	$ 41,967.00
		15" PVC	1970	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	1,712	$ 20,164.00
		15" PVC	2010	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	1,742	$ 130,748.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
		15" VCP	1900	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	351	$ 290.00
		15" VCP	1930	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	13,878	$ 24,027.00
		15" VCP	1960	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	3,954	$ 27,787.00
		16" VCP	1930	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	195	$ 358.00
		18" PVC	1970	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	510	$ 7,261.00
		18" RCP	1900	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	2,257	$ 2,256.00
		18" RCP	1930	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	25,311	$ 52,951.00
		18" RCP	1960	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	13,554	$ 115,100.00
		18" RCP	1969	DELCORA GIS	Outfall costs use the LF price from the insurance evaluation, backdated to the correct year.	130	$ 10,449.95
		21" RCP	1900	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	2,228	$ 2,521.00
		21" RCP	1930	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	3,442	$ 8,151.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
		21" RCP	1960	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	3,916	$ 37,643.00
		24" Brick	1961	DELCORA GIS	Outfall costs use the LF price from the insurance evaluation, backdated to the correct year.	50	$ 2,682.64
		24" PVC	1970	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	817	$ 13,973.00
		24" RCP	1900	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	23,804	$ 28,596.00
		24" RCP	1930	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	11,216	$ 28,199.00
		24" RCP	1960	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	11,245	$ 114,753.00
		27" RCP	1930	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	315	$ 947.00
		30" Brick	1900	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	3,072	$ 4,929.00
		30" Brick	1930	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	3,065	$ 10,293.00
		30" RCP	1960	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	11,475	$ 156,417.00
		30" RCP	1970	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	280	$ 6,401.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
		36" Brick	1900	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	77,555	$ 146,894.00
		36" Brick	1930	DELCORA GIS	Outfall costs use the LF price from the insurance evaluation, backdated to the correct year.	8,110	$ 104,286.02
		36" Brick	1930	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	4,557	$ 18,064.00
		36" Brick	1931	DELCORA GIS	Outfall costs use the LF price from the insurance evaluation, backdated to the correct year.	885	$ 10,146.85
		36" Brick	1961	DELCORA GIS	Outfall costs use the LF price from the insurance evaluation, backdated to the correct year.	1,625	$ 87,185.85
		36" Brick	1986	DELCORA GIS	Outfall costs use the LF price from the insurance evaluation, backdated to the correct year.	570	$ 155,076.95
		36" RCP	1960	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	7,550	$ 121,477.00
		36" RCP	1969	DELCORA GIS	Outfall costs use the LF price from the insurance evaluation, backdated to the correct year.	155	$ 12,459.56
		36" RCP	1970	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	1,422	$ 38,338.00
		4" VCP	1930	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	183	$ 185.00
		40" RCP	1960	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	421	$ 7,494.00
		42" Brick	1900	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	1,477	$ 3,225.00
		42" RCP	1931	DELCORA GIS	Outfall costs use the LF price from the insurance evaluation, backdated to the correct year.	450	$ 5,159.41

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
		42" RCP	1960	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	467	$ 8,662.00
		44" Brick	1900	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	366	$ 841.00
		48" Brick	1900	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	7,282	$ 18,007.00
		48" Brick	1930	DELCORA GIS	Outfall costs use the LF price from the insurance evaluation, backdated to the correct year.	4,220	$ 54,264.74
		48" Brick	1930	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	1,382	$ 7,152.00
		48" Brick & Concrete	1930	DELCORA GIS	Outfall costs use the LF price from the insurance evaluation, backdated to the correct year.	1,835	$ 23,596.16
		48" CIP	1961	DELCORA GIS	Outfall costs use the LF price from the insurance evaluation, backdated to the correct year.	1,190	$ 63,846.87
		48" RCP	1960	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	6,151	$ 129,208.00
		48" RCP	1961	DELCORA GIS	Outfall costs use the LF price from the insurance evaluation, backdated to the correct year.	865	$ 46,409.70
		48" RCP	1969	DELCORA GIS	Outfall costs use the LF price from the insurance evaluation, backdated to the correct year.	200	$ 16,076.85
		48" RCP	1970	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	543	$ 19,117.00
		52" Brick	1900	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	615	$ 1,663.00
		52" RCP	1926	DELCORA GIS	Outfall costs use the LF price from the insurance evaluation, backdated to the correct year.	870	$ 11,462.83

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
		52" RCP	1960	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	3,587	$ 82,393.00
		54" RCP	1930	DELCORA GIS	Outfall costs use the LF price from the insurance evaluation, backdated to the correct year.	1,660	$ 21,345.84
		54" RCP	1960	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	1,719	$ 40,335.00
		6" VCP	1930	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	777	$ 784.00
		60" RCP	1961	DELCORA GIS	Outfall costs use the LF price from the insurance evaluation, backdated to the correct year.	50	$ 2,682.64
		64" RCP	1960	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	686	$ 20,031.00
		72" Brick	1900	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	2,467	$ 9,301.00
		72" RCP	1960	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	800	$ 25,624.00
		72" RCP	1970	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	223	$ 11,971.00
		8" PVC	1970	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	5,123	$ 35,178.00
		8" PVC	1971	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	669	$ 5,259.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
		8" PVC	1976	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	540	$ 6,446.00
		8" PVC	1985	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	2,042	$ 42,591.00
		8" PVC	1990	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	55,963	$ 1,316,669.00
		8" PVC	2004	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	2,242	$ 79,312.00
		8" PVC	2005	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	43,522	$ 1,611,245.00
		8" PVC	2006	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	5,206	$ 200,635.00
		8" PVC	2007	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	771	$ 30,558.00
		8" PVC	2008	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	1,491	$ 61,604.00
		8" PVC	2009	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	12,202	$ 519,931.92
		8" PVC	2012	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	4,524	$ 209,338.77

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
		8" PVC	2015	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	6,360	$ 317,346.00
		8" PVC	2016	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	13,957	$ 717,452.00
		8" VCP	1900	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	755	$ 364.00
		8" VCP	1930	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	267,907	$ 270,403.00
		8" VCP	1937	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	206	$ 241.00
		8" VCP	1960	DELCORA GIS	The installed cost is calculated using the GM Pricing Structure for cost per pipe size, and using the Cost Construction Index to estimate what the cost would have been when the gravity main was laid.	2,176	$ 8,915.00
		Unknown	1900	DELCORA GIS	For pipes that are unknown in size, or unknown in date, or both, weighted averages are used.	62	$ 30.00
		Unknown	1930	DELCORA GIS	For pipes that are unknown in size, or unknown in date, or both, weighted averages are used.	5,738	$ 5,791.00
		Unknown	1937	DELCORA GIS	For pipes that are unknown in size, or unknown in date, or both, weighted averages are used.	10,877	$ 97,681.00
		Unknown	1956	DELCORA GIS	For pipes that are unknown in size, or unknown in date, or both, weighted averages are used.	912	$ 8,190.00
		Unknown	1960	DELCORA GIS	For pipes that are unknown in size, or unknown in date, or both, weighted averages are used.	487	$ 1,995.00
		Unknown	1970	DELCORA GIS	For pipes that are unknown in size, or unknown in date, or both, weighted averages are used.	43,479	$ 298,541.00
		Unknown	1971	DELCORA GIS	For pipes that are unknown in size, or unknown in date, or both, weighted averages are used.	1,418	$ 12,734.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
		Unknown	1990	DELCORA GIS	For pipes that are unknown in size, or unknown in date, or both, weighted averages are used.	466	$ 10,964.00
		Unknown	1992	DELCORA GIS	For pipes that are unknown in size, or unknown in date, or both, weighted averages are used.	477	$ 11,823.00
		Unknown	Unknown	DELCORA GIS	For pipes that are unknown in size, or unknown in date, or both, weighted averages are used.	6,188	$ 35,684.00
	TOTAL COLLECTION SEWERS - GRAVITY - MAINS					**867,635**	**$ 8,324,260.54**
361.23	COLLECTION SEWERS - GRAVITY - MANHOLES						
		Manholes	1900	DELCORA GIS		438	$ 12,422.20
		Manholes	1930	DELCORA GIS		1,865	$ 103,718.84
		Manholes	1937	DELCORA GIS		137	$ 9,366.84
		Manholes	1956	DELCORA GIS		34	$ 6,953.78
		Manholes	1960	DELCORA GIS		270	$ 75,117.37
		Manholes	1966	DELCORA GIS		22	$ 6,437.13
		Manholes	1970	DELCORA GIS		282	$ 120,089.06
		Manholes	1971	DELCORA GIS		3	$ 853.71
		Manholes	1985	DELCORA GIS		10	$ 11,945.16
		Manholes	1990	DELCORA GIS		87	$ 118,409.05
		Manholes	1992	DELCORA GIS		3	$ 3,994.91
		Manholes	2000	DELCORA GIS		67	$ 132,377.37
		Manholes	2004	DELCORA GIS		16	$ 50,435.96
		Manholes	2005	DELCORA GIS		256	$ 1,583,347.74
		Manholes	2006	DELCORA GIS		159	$ 367,981.46
		Manholes	2007	DELCORA GIS		6	$ 12,936.21
		Manholes	2008	DELCORA GIS		20	$ 47,837.03
		Manholes	2009	DELCORA GIS		67	$ 156,815.50
		Manholes	2010	DELCORA GIS		7	$ 14,093.41
		Manholes	2011	DELCORA GIS		7	$ 23,998.69
		Manholes	2012	DELCORA GIS		25	$ 63,542.30
		Manholes	2015	DELCORA GIS		42	$ 111,429.26
		Manholes	2016	DELCORA GIS		94	$ 246,780.36
		Manholes	2019	DELCORA GIS		1	$ 2,924.40
		Manholes	Unknown	DELCORA GIS		330	$ 189,783.57
	TOTAL COLLECTION SEWERS - GRAVITY - MANHOLES					**4,248**	**$ 3,473,591.30**
362.20	SPECIAL COLLECTING STRUCTURES						
	Regulator No. 002	Regulator No. 002 - (1) Vault(s)	1930	Vault Costs are from the 2005 bid for the Rehabilitation of Regulators 02, 04, and 05. The average vaule replacement cost was $71,645 in March 2005.	The ENR CCI value for March 2005 = 7309		$ 1,989.87
	Regulator No. 002	Regulator No. 002 - 5" x 7 1/2" Brown & Brown	2009	Regulator costs are from bond reports, contracts, and estimation.			$ 191,466.66
	Regulator No. 002	Regulator No. 002 - None Backflow Device	NA	Weston			$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	Regulator No. 003	Regulator No. 003 - (1) Vault(s)	1930	Vault Costs are from the 2005 bid for the Rehabilitation of Regulators 02, 04, and 05. The average vaule replacement cost was $71,645 in March 2005.	The ENR CCI value for March 2005 = 7309		$ 1,989.87
	Regulator No. 003	Regulator No. 003 - 7 1/2" x 7 3/4" Brown & Brown	2009	Regulator costs are from bond reports, contracts, and estimation.			$ 191,466.66
	Regulator No. 003	Regulator No. 003 - None Backflow Device		Weston			$ -
	Regulator No. 004	Regulator No. 004 - (1) Vault(s)	1930	Vault Costs are from the 2005 bid for the Rehabilitation of Regulators 02, 04, and 05. The average vaule replacement cost was $71,645 in March 2005.	The ENR CCI value for March 2005 = 7309		$ 1,989.87
	Regulator No. 004	Regulator No. 004 - 7 1/2" x 15 3/8" Brown & Brown	2018	Regulator costs are from bond reports, contracts, and estimation.			$ 228,411.50
	Regulator No. 004	Regulator No. 004 - Duckbill Backflow Device	1984	Weston			$ 3,564.22
	Regulator No. 005	Regulator No. 005 - (2) Vault(s)	1930	Vault Costs are from the 2005 bid for the Rehabilitation of Regulators 02, 04, and 05. The average vaule replacement cost was $71,645 in March 2005.	The ENR CCI value for March 2005 = 7309		$ 3,979.73
	Regulator No. 005	Regulator No. 005 - 12" x 12" Brown & Brown	2009	Regulator costs are from bond reports, contracts, and estimation.			$ 191,466.66
	Regulator No. 005	Regulator No. 005 - 48"x48" Rubber Tide Gate Backflow Device	2002	Weston			$ 6,540.00
	Regulator No. 007	CSO Screening Facility - Outfall 007 CSO Screening Facility	2009	Dedicated			$ 881,460.00
	Regulator No. 007	Regulator No. 007 - (2) Vault(s)	1930	Vault Costs are from the 2005 bid for the Rehabilitation of Regulators 02, 04, and 05. The average vaule replacement cost was $71,645 in March 2005.	The ENR CCI value for March 2005 = 7309		$ 3,979.73
	Regulator No. 007	Regulator No. 007 - 5" x 6" Brown & Brown	2009	Regulator costs are from bond reports, contracts, and estimation.			$ 308,294.95
	Regulator No. 007	Regulator No. 007 - Tide Gate Backflow Device	2002	Weston			$ 6,540.00
	Regulator No. 008	Regulator No. 008 - (2) Vault(s)	1930	Vault Costs are from the 2005 bid for the Rehabilitation of Regulators 02, 04, and 05. The average vaule replacement cost was $71,645 in March 2005.	The ENR CCI value for March 2005 = 7309		$ 3,979.73
	Regulator No. 008	Regulator No. 008 - 7 1/2" x 12 3/8" Brown & Brown	2005	Regulator costs are from bond reports, contracts, and estimation.			$ 612,878.83
	Regulator No. 008	Regulator No. 008 - Double Tide Gate Backflow Device	2002	Weston			$ 13,080.00
	Regulator No. 009	Regulator No. 009 - (2) Vault(s)	1930	Vault Costs are from the 2005 bid for the Rehabilitation of Regulators 02, 04, and 05. The average vaule replacement cost was $71,645 in March 2005.	The ENR CCI value for March 2005 = 7309		$ 3,979.73
	Regulator No. 009	Regulator No. 009 - 5" x 7 1/2" Brown & Brown	2005	Regulator costs are from bond reports, contracts, and estimation.			$ 612,878.83
	Regulator No. 009	Regulator No. 009 - Double Tide Gate Backflow Device	2002	Weston			$ 13,080.00
	Regulator No. 010	Regulator No. 010 - (1) Vault(s)	1930	Vault Costs are from the 2005 bid for the Rehabilitation of Regulators 02, 04, and 05. The average vaule replacement cost was $71,645 in March 2005.	The ENR CCI value for March 2005 = 7309		$ 1,989.87
	Regulator No. 010	Regulator No. 010 - 7 1/2" x 15 3/8" Brown & Brown	2012	Regulator costs are from bond reports, contracts, and estimation.			$ 308,294.95
	Regulator No. 010	Regulator No. 010 - None Backflow Device	NA	Weston			$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	Regulator No. 011	Regulator No. 011 - (1) Vault(s)	1930	Vault Costs are from the 2005 bid for the Rehabilitation of Regulators 02, 04, and 05. The average vaule replacement cost was $71,645 in March 2005.	The ENR CCI value for March 2005 = 7309		$ 1,989.87
	Regulator No. 011	Regulator No. 011 - 5" x 9 1/4" Brown & Brown	2005	Regulator costs are from bond reports, contracts, and estimation.			$ 612,878.83
	Regulator No. 011	Regulator No. 011 - None Backflow Device	NA	Weston			$ -
	Regulator No. 012	Regulator No. 012 - (2) Vault(s)	1961	Vault Costs are from the 2005 bid for the Rehabilitation of Regulators 02, 04, and 05. The average vaule replacement cost was $71,645 in March 2005.	The ENR CCI value for March 2005 = 7309		$ 16,605.09
	Regulator No. 012	Regulator No. 012 - Brown & Brown	2005	Regulator costs are from bond reports, contracts, and estimation.			$ 173,795.00
	Regulator No. 012	Regulator No. 012 - Double 24"x24" Rubber Tide Gate Backflow Device	2002	Weston			$ 13,080.00
	Regulator No. 013	Regulator No. 013 - (2) Vault(s)	1961	Vault Costs are from the 2005 bid for the Rehabilitation of Regulators 02, 04, and 05. The average vaule replacement cost was $71,645 in March 2005.	The ENR CCI value for March 2005 = 7309		$ 16,605.09
	Regulator No. 013	Regulator No. 013 - 7 1/2" x 7 3/4" Brown & Brown	2012	Regulator costs are from bond reports, contracts, and estimation.			$ 308,294.95
	Regulator No. 013	Regulator No. 013 - Double 48"x48" Rubber Tide Gate Backflow Device	2002	Weston			$ 13,080.00
	Regulator No. 014	Regulator No. 014 - (2) Vault(s)	1961	Vault Costs are from the 2005 bid for the Rehabilitation of Regulators 02, 04, and 05. The average vaule replacement cost was $71,645 in March 2005.	The ENR CCI value for March 2005 = 7309		$ 16,605.09
	Regulator No. 014	Regulator No. 014 - 12" x 15" Brown & Brown	2012	Regulator costs are from bond reports, contracts, and estimation.			$ 308,294.95
	Regulator No. 014	Regulator No. 014 - Double 48"x48" Rubber Tide Gate Backflow Device	2002	Weston			$ 13,080.00
	Regulator No. 015	Regulator No. 015 - (2) Vault(s)	1986	Vault Costs are from the 2005 bid for the Rehabilitation of Regulators 02, 04, and 05. The average vaule replacement cost was $71,645 in March 2005.	The ENR CCI value for March 2005 = 7309		$ 84,201.74
	Regulator No. 015	Regulator No. 015 - 7 1/2" x 15 3/8" Brown & Brown	2018	Regulator costs are from bond reports, contracts, and estimation.			$ 228,411.50
	Regulator No. 015	Regulator No. 015 - Single Neenah #R-50-50-SF36 Tide Gate Backflow Device	1986	Weston			$ 1,196.33
	Regulator No. 016	Regulator No. 016 - (2) Vault(s)	1926	Vault Costs are from the 2005 bid for the Rehabilitation of Regulators 02, 04, and 05. The average vaule replacement cost was $71,645 in March 2005.	The ENR CCI value for March 2005 = 7309		$ 4,077.76
	Regulator No. 016	Regulator No. 016 - 7 1/2" x 12 3/8" Brown & Brown	1999	Regulator costs are from bond reports, contracts, and estimation.			$ 308,294.95
	Regulator No. 016	Regulator No. 016 - Double 60"x60" Rubber Tide Gate Backflow Device	2002	Weston			$ 13,080.00
	Regulator No. 017	Regulator No. 017 - (2) Vault(s)	1961	Vault Costs are from the 2005 bid for the Rehabilitation of Regulators 02, 04, and 05. The average vaule replacement cost was $71,645 in March 2005.	The ENR CCI value for March 2005 = 7309		$ 16,605.09
	Regulator No. 017	Regulator No. 017 - 5" x 6" Brown & Brown	1987	Regulator costs are from bond reports, contracts, and estimation.			$ 308,294.95

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	Regulator No. 017	Regulator No. 017 - Single Neenah Cast Iron Tide Gate Backflow Device	1961	Weston			$ 220.50
	Regulator No. 018	Regulator No. 018 - (1) Vault(s)	1961	Vault Costs are from the 2005 bid for the Rehabilitation of Regulators 02, 04, and 05. The average vaule replacement cost was $71,645 in March 2005.	The ENR CCI value for March 2005 = 7309		$ 8,302.55
	Regulator No. 018	Regulator No. 018 - 5" x 6" Brown & Brown	1961	Regulator costs are from bond reports, contracts, and estimation.			$ 308,294.95
	Regulator No. 018	Regulator No. 018 - None Backflow Device	NA	Weston			$ -
	Regulator No. 019	Regulator No. 019 - (1) Vault(s)	1931	Vault Costs are from the 2005 bid for the Rehabilitation of Regulators 02, 04, and 05. The average vaule replacement cost was $71,645 in March 2005.	The ENR CCI value for March 2005 = 7309		$ 1,774.22
	Regulator No. 019	Regulator No. 019 - 7 1/2" x 15 3/8" Brown & Brown	1974	Regulator costs are from bond reports, contracts, and estimation.			$ 308,294.95
	Regulator No. 019	Regulator No. 019 - None Backflow Device	NA	Weston			$ -
	Regulator No. 020	Regulator No. 020 - (1) Vault(s)	1931	Vault Costs are from the 2005 bid for the Rehabilitation of Regulators 02, 04, and 05. The average vaule replacement cost was $71,645 in March 2005.	The ENR CCI value for March 2005 = 7309		$ 1,774.22
	Regulator No. 020	Regulator No. 020 - 7 1/2" x 7 3/4" Brown & Brown	2002	Regulator costs are from bond reports, contracts, and estimation.			$ 308,294.95
	Regulator No. 020	Regulator No. 020 - None Backflow Device	NA	Weston			$ -
	Regulator No. 021	Regulator No. 021 - (2) Vault(s)	1969	Vault Costs are from the 2005 bid for the Rehabilitation of Regulators 02, 04, and 05. The average vaule replacement cost was $71,645 in March 2005.	The ENR CCI value for March 2005 = 7309		$ 24,878.23
	Regulator No. 021	Regulator No. 021 - 7 1/2" x 7 3/4" Brown & Brown	2003	Regulator costs are from bond reports, contracts, and estimation.			$ 308,294.95
	Regulator No. 021	Regulator No. 021 - Double 18"x18" Rubber Tide Gate Backflow Device	2002	Weston			$ 13,080.00
	Regulator No. 022	Regulator No. 022 - (1) Vault(s)	1969	Vault Costs are from the 2005 bid for the Rehabilitation of Regulators 02, 04, and 05. The average vaule replacement cost was $71,645 in March 2005.	The ENR CCI value for March 2005 = 7309		$ 12,439.12
	Regulator No. 022	Regulator No. 022 - 5" x 6" Brown & Brown	2002	Regulator costs are from bond reports, contracts, and estimation.			$ 308,294.95
	Regulator No. 022	Regulator No. 022 - None Backflow Device	NA	Weston			$ -
	Regulator No. 023	Regulator No. 023 - (2) Vault(s)	1969	Vault Costs are from the 2005 bid for the Rehabilitation of Regulators 02, 04, and 05. The average vaule replacement cost was $71,645 in March 2005.	The ENR CCI value for March 2005 = 7309		$ 24,878.23
	Regulator No. 023	Regulator No. 023 - 7 1/2" x 7 3/4" Brown & Brown	2005	Regulator costs are from bond reports, contracts, and estimation.			$ 173,795.00
	Regulator No. 023	Regulator No. 023 - Double 36"x36" Rubber Tide Gate Backflow Device	2002	Weston			$ 13,080.00
	Regulator No. 024	Regulator No. 024 - (2) Vault(s)	1931	Vault Costs are from the 2005 bid for the Rehabilitation of Regulators 02, 04, and 05. The average vaule replacement cost was $71,645 in March 2005.	The ENR CCI value for March 2005 = 7309		$ 3,548.43
	Regulator No. 024	Regulator No. 024 - 5" x 9 1/4" Brown & Brown	2005	Regulator costs are from bond reports, contracts, and estimation.			$ 173,795.00
	Regulator No. 024	Regulator No. 024 - Double 48"x48" Rubber Tide Gate Backflow Device	2002	Weston			$ 13,080.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	Regulator No. 025	Regulator No. 025 - (2) Vault(s)	1931	Vault Costs are from the 2005 bid for the Rehabilitation of Regulators 02, 04, and 05. The average vaule replacement cost was $71,645 in March 2005.	The ENR CCI value for March 2005 = 7309		$ 3,548.43
	Regulator No. 025	Regulator No. 025 - 5" x 6" Brown & Brown	2003	Regulator costs are from bond reports, contracts, and estimation.			$ 308,294.95
	Regulator No. 025	Regulator No. 025 - Double 36"x36" Rubber Tide Gate Backflow Device	2002	Weston			$ 13,080.00
	Regulator No. 026	Regulator No. 026 - (1) Vault(s)	1931	Vault Costs are from the 2005 bid for the Rehabilitation of Regulators 02, 04, and 05. The average vaule replacement cost was $71,645 in March 2005.	The ENR CCI value for March 2005 = 7309		$ 1,774.22
	Regulator No. 026	Regulator No. 026 - 7 1/2" x 12 3/8" Brown & Brown	1999	Regulator costs are from bond reports, contracts, and estimation.			$ 308,294.95
	Regulator No. 026	Regulator No. 026 - None Backflow Device	NA	Weston			$ -
	Regulator No. 031	Regulator No. 031 - (2) Vault(s)	1961	Vault Costs are from the 2005 bid for the Rehabilitation of Regulators 02, 04, and 05. The average vaule replacement cost was $71,645 in March 2005.	The ENR CCI value for March 2005 = 7309		$ 16,605.09
	Regulator No. 031	Regulator No. 031 - Double 36"x36" Rubber Tide Gate Backflow Device	2002	Weston			$ 13,080.00
	Regulator No. 031	Regulator No. 031 - No Regulator	1961	Regulator costs are from bond reports, contracts, and estimation.			$ -
	Regulator No. 033	Regulator No. 033 - (2) Vault(s)	1961	Vault Costs are from the 2005 bid for the Rehabilitation of Regulators 02, 04, and 05. The average vaule replacement cost was $71,645 in March 2005.	The ENR CCI value for March 2005 = 7309		$ 16,605.09
	Regulator No. 033	Regulator No. 033 - 2 - Single Gates Backflow Device	1961	Weston			$ 317.93
	Regulator No. 033	Regulator No. 033 - No Regulator	1961	Regulator costs are from bond reports, contracts, and estimation.			$ -
	TOTAL SPECIAL COLLECTING STRUCTURES						**$ 8,739,493.81**
363.20	SERVICES TO CUSTOMERS						
		4" PVC	1957	DELCORA GIS	The age of the laterals are assumed to be the same age as the average Chester gravity main. The length of an average lateral is assumed to be the same as the average length of a lateral in Crozier Hills and Upland Terrace & Pusey Estate, where lateral data was available. The number of laterals that DELCORA owns is assumed to be the same as the number of bills they sent out for the 4th quarter of 2019.	85,536	$ 307,904.86
	TOTAL SERVICES TO CUSTOMERS					**85,536**	**$ 307,904.86**

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
364.20	FLOW MEASURING DEVICES						
		Flowav - AV Sensor	2012	DELCORA	Meters with no year and older than 2011 are assumed to no longer be in service. Original Cost data was estimated in 2019 numbers and backdated to the respective year.	3	$ 4,543.28
		Flowav - AV Sensor	2013	DELCORA	Meters with no year and older than 2011 are assumed to no longer be in service. Original Cost data was estimated in 2019 numbers and backdated to the respective year.	5	$ 7,767.40
		Flowav - AV Sensor	2014	DELCORA	Meters with no year and older than 2011 are assumed to no longer be in service. Original Cost data was estimated in 2019 numbers and backdated to the respective year.	12	$ 19,149.45
		Flowav - AV Sensor	2015	DELCORA	Meters with no year and older than 2011 are assumed to no longer be in service. Original Cost data was estimated in 2019 numbers and backdated to the respective year.	2	$ 3,266.10
		Flowav - AV Sensor	2016	DELCORA	Meters with no year and older than 2011 are assumed to no longer be in service. Original Cost data was estimated in 2019 numbers and backdated to the respective year.	20	$ 33,647.08
		Flowav - AV Sensor	2017	DELCORA	Meters with no year and older than 2011 are assumed to no longer be in service. Original Cost data was estimated in 2019 numbers and backdated to the respective year.	6	$ 10,482.70
		Flowav - AV Sensor	2018	DELCORA	Meters with no year and older than 2011 are assumed to no longer be in service. Original Cost data was estimated in 2019 numbers and backdated to the respective year.	2	$ 3,600.00
		Flowav - AV Sensor	2019	DELCORA	Meters with no year and older than 2011 are assumed to no longer be in service. Original Cost data was estimated in 2019 numbers and backdated to the respective year.	5	$ 9,117.16
		Flowav - Ultrasonic	2019	DELCORA	Meters with no year and older than 2011 are assumed to no longer be in service. Original Cost data was estimated in 2019 numbers and backdated to the respective year.	4	$ 4,052.07
		Hach - AV Sensor	2016	DELCORA	Meters with no year and older than 2011 are assumed to no longer be in service. Original Cost data was estimated in 2019 numbers and backdated to the respective year.	10	$ 13,084.98

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
		Hach - Downlooker	2016	DELCORA	Meters with no year and older than 2011 are assumed to no longer be in service. Original Cost data was estimated in 2019 numbers and backdated to the respective year.	1	$ 1,308.50
		Hach - FL900	2014	DELCORA	Meters with no year and older than 2011 are assumed to no longer be in service. Original Cost data was estimated in 2019 numbers and backdated to the respective year.	7	$ 37,235.04
		Hach - FL901	2016	DELCORA	Meters with no year and older than 2011 are assumed to no longer be in service. Original Cost data was estimated in 2019 numbers and backdated to the respective year.	19	$ 106,549.09
		Hach - Flodar	2013	DELCORA	Meters with no year and older than 2011 are assumed to no longer be in service. Original Cost data was estimated in 2019 numbers and backdated to the respective year.	1	$ 6,904.36
		Hach - Flodar	2016	DELCORA	Meters with no year and older than 2011 are assumed to no longer be in service. Original Cost data was estimated in 2019 numbers and backdated to the respective year.	1	$ 7,477.13
		Hach - Module	2016	DELCORA	Meters with no year and older than 2011 are assumed to no longer be in service. Original Cost data was estimated in 2019 numbers and backdated to the respective year.	1	$ 841.18
		Hach - Ultrasonic	2017	DELCORA	Meters with no year and older than 2011 are assumed to no longer be in service. Original Cost data was estimated in 2019 numbers and backdated to the respective year.	1	$ 1,067.68
		Hach - Wafer Sensor	2014	DELCORA	Meters with no year and older than 2011 are assumed to no longer be in service. Original Cost data was estimated in 2019 numbers and backdated to the respective year.	3	$ 1,329.82
		Hach - Wafer Sensor	2018	DELCORA	Meters with no year and older than 2011 are assumed to no longer be in service. Original Cost data was estimated in 2019 numbers and backdated to the respective year.	1	$ 500.00
		Isco - 2150	2014	DELCORA	Meters with no year and older than 2011 are assumed to no longer be in service. Original Cost data was estimated in 2019 numbers and backdated to the respective year.	2	$ 7,092.39

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
		Isco - 2151	2016	DELCORA	Meters with no year and older than 2011 are assumed to no longer be in service. Original Cost data was estimated in 2019 numbers and backdated to the respective year.	1	$ 3,738.56
		Isco - 2152	2019	DELCORA	Meters with no year and older than 2011 are assumed to no longer be in service. Original Cost data was estimated in 2019 numbers and backdated to the respective year.	6	$ 24,312.42
		Isco - 4120	2016	DELCORA	Meters with no year and older than 2011 are assumed to no longer be in service. Original Cost data was estimated in 2019 numbers and backdated to the respective year.	1	$ 3,738.56
		Isco - AV Sensor	2011	DELCORA	Meters with no year and older than 2011 are assumed to no longer be in service. Original Cost data was estimated in 2019 numbers and backdated to the respective year.	5	$ 5,329.51
		Isco - AV Sensor	2016	DELCORA	Meters with no year and older than 2011 are assumed to no longer be in service. Original Cost data was estimated in 2019 numbers and backdated to the respective year.	2	$ 2,430.07
		Isco - AV Sensor	2019	DELCORA	Meters with no year and older than 2011 are assumed to no longer be in service. Original Cost data was estimated in 2019 numbers and backdated to the respective year.	8	$ 10,535.38
		Telog - Ru-33	2012	DELCORA	Meters with no year and older than 2011 are assumed to no longer be in service. Original Cost data was estimated in 2019 numbers and backdated to the respective year.	1	$ 2,103.37
		Telog - Ru-34	2016	DELCORA	Meters with no year and older than 2011 are assumed to no longer be in service. Original Cost data was estimated in 2019 numbers and backdated to the respective year.	2	$ 4,673.21
		Telog - RU-33/4G	2019	DELCORA	Meters with no year and older than 2011 are assumed to no longer be in service. Original Cost data was estimated in 2019 numbers and backdated to the respective year.	118	$ 298,840.17
	TOTAL FLOW MEASURING DEVICES					**250**	**$ 634,716.65**
365.20	FLOW MEASURING INSTALLATIONS						
		Lower Chichester Metering Pit - Metering pit @ Marcus Hook & Lower Chi border for gravity flow.	1977		Assume vault is 1/2 size of regulator vault and was constructed at the same time as the Sun-Marcus Hook FM to the WRTP.		$ 12,625.00
	TOTAL FLOW MEASURING INSTALLATIONS						**$ 12,625.00**

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
371.30	PUMPING EQUIPMENT						
	PS-1	(PS-1) - 1/2" Bar Screen	2017	Weston			$ 740,881.00
	PS-1	(PS-1) - Bar Screen Repl #1	2002	Weston			$ 260,000.00
	PS-1	(PS-1) - Bar Screen Repl #2	1995	Weston			$ 239,000.00
	PS-1	(PS-1) - CFM Valve Repl	2009	Weston			$ 1,532,000.00
	PS-2	(PS-2) - Upgraded to twin submersible pumps	1997	Weston			$ 76,900.00
	PS-7	(PS-7) - 1/2" Bar Screen	2017	Weston			$ 816,146.00
	PS-7	(PS-7) - Bar Screen Repl #1	1995	Weston			$ 239,000.00
	PS-7	(PS-7) - Bar Screen Repl #2	1997	Weston			$ 207,900.00
	PS-7	(PS-7) - Control System Upgrade	2013	Weston			$ 256,784.00
	PS-8	(PS-8) - 1/2" Bar Screen	2017	Weston			$ 675,635.00
	PS-8	(PS-8) - Bar Screen Repl #1	1999	Weston			$ 157,932.00
	PS-8	(PS-8) - Bar Screen Repl #2	1996	Weston			$ 149,500.00
	PS-9	(PS-9) - 1/2" Bar Screen	2017	Weston			$ 827,058.00
	PS-9	(PS-9) - Bar Screen Repl #1	1994	Weston			$ 163,400.00
	PS-9	(PS-9) - Bar Screen Repl #2	1998	Weston			$ 210,480.00
	PS-9	(PS-9) - DCPS Upgrade: (Part A) Struct/Mech, (Part B) Elect, (Part C) HVAC	2006	Weston			$ 3,784,877.00
	PS-11	(PS-11) - Gen & Elect Imp.	1977	Contract Nos 13, 13A, 14 (1977 upgrade)			$ 168,026.00
	PS-16	(PS-16) - 3rd pump added	1975	Contract 25			$ 17,787.00
	PS-16	(PS-16) - pump control upgrades	2017	Capital Plan			$ 200,000.00
	PS-27	(PS-27) - Gen & Elect Imp.	2013	Weston			$ 318,995.00
	TOTAL PUMPING EQUIPMENT						**$ 11,042,301.00**
380.30	TREATMENT AND DISPOSAL EQUIPMENT - PUMP STATIONS						
	PS-1 & PS-2 (Primary Sludge)	PS-1 & PS-2 (Primary Sludge) - Original Installation	1974	Original plant construction			$ 206,632.00
	PS-1 & PS-2 (Primary Sludge)	PS-1 & PS-2 (Primary Sludge) - PS Improvements	2018	TC-1717-C			$ 308,780.00
	PS-3 (Activated Sludge)	PS-3 (Activated Sludge) - Original Installation	1974	Original plant construction			$ 2,090,502.00
	PS-3 (Activated Sludge)	PS-3 (Activated Sludge) - Process Control System Phase 2	2005	TC-0403-C			$ 5,414,119.00
	PS-3 (Activated Sludge)	PS-3 (Activated Sludge) - Process Control System, Phase 1	2002	TC-0211-C			$ 791,877.00
	PS-3 (Activated Sludge)	PS-3 (Activated Sludge) - PS-3 Improvements	2018	TC-1717-C			$ 3,894,326.00
	PS-3 (Activated Sludge)	PS-3 (Activated Sludge) - RAS Line Replacement	2003	TC-0312-C			$ 1,102,245.00
	PS-4 (Chlorine Bldg & Utility Water)	PS-4 (Chlorine Bldg & Utility Water) - Modifications To Chlorine Facility	1998	TC-9806-C			$ 343,000.00
	PS-4 (Chlorine Bldg & Utility Water)	PS-4 (Chlorine Bldg & Utility Water) - Original Installation	1974	Original plant construction			$ 487,831.00
	PS-4 (Chlorine Bldg & Utility Water)	PS-4 (Chlorine Bldg & Utility Water) - PS-4 Improvements	2018	TC-1717-C			$ 945,740.00
	PS-5 (Activated Sludge)	PS-5 (Activated Sludge) - Original Installation	1994	TC-9309-C			$ 5,563,800.00
	PS-6 (Raw Influent)	PS-6 (Raw Influent) - Improvements	2018	TC-1717-C			$ 496,184.00
	PS-6 (Raw Influent)	PS-6 (Raw Influent) - Phase 1	2017	Original plant construction			$ 13,923,660.00
	PS-6 (Raw Influent)	PS-6 (Raw Influent) - Phase 2	2018	TC-1717-C			$ 1,398,201.00
	Corrine Village aka Pocopson Preserve	Corrine Village aka Pocopson Preserve WWTP - INFLUENT PUMP STATION	2010	2018 appraisel number, backdated to the correct year.			$ 54,643.24
	Sheeder Tract aka Riverside	Sheeder Tract aka Riverside WWTP - INFLUENT PUMP STATION	2007	2018 appraisel number, backdated to the correct year.			$ 49,465.14
	TOTAL TREATMENT AND DISPOSAL EQUIPMENT - PUMP STATIONS						**$ 37,071,005.38**

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
380.40	TREATMENT AND DISPOSAL EQUIPMENT						
		0 - Mixing Manifold Installation	2006	TC-0615-C			$ 73,690.00
	B-3 (Incinerator)	B-3 (Incinerator) - Ash Scrubber Line Replacement	2005	TC-0406-C			$ 257,400.00
	B-3 (Incinerator)	B-3 (Incinerator) - Ash Scrubber Pumping System Upgrade	2007	TC-0616-C			$ 411,422.00
	B-3 (Incinerator)	B-3 (Incinerator) - Ash System Clinker Grinder	2008	P2008-09			$ 27,780.00
	B-3 (Incinerator)	B-3 (Incinerator) - Automation of Solids Handling Equipment	2007	TC-0708-C			$ 253,109.00
	B-3 (Incinerator)	B-3 (Incinerator) - Belt Filter Press Controls Optimization	2010	TC-1002-C			$ 62,750.00
	B-3 (Incinerator)	B-3 (Incinerator) - Belt Filter Press Reconditioning	2014	TC-1401-C			$ 537,300.00
	B-3 (Incinerator)	B-3 (Incinerator) - BFP Odor Control in B-3	2003	TC-0310-C			$ 474,845.00
	B-3 (Incinerator)	B-3 (Incinerator) - Building Improvements	2018	TC-1717-C			$ 129,832.00
	B-3 (Incinerator)	B-3 (Incinerator) - CEMS Installation	1999	TC-9906-C			$ 248,950.00
	B-3 (Incinerator)	B-3 (Incinerator) - Chlorine Scrubbing System Modifications	2008	TC-0805-C			$ 67,200.00
	B-3 (Incinerator)	B-3 (Incinerator) - Dry Ash Handling System (Psc)	1991	TC-9105-C			$ 1,150,730.00
	B-3 (Incinerator)	B-3 (Incinerator) - Fabrication - 42" Stack/Breaching ID Fan	1988	TC-8810-C	Contract changed from PW to Purchasing - #P88-14		$ 16,390.00
	B-3 (Incinerator)	B-3 (Incinerator) - Fourth Belt Filter Press	2014	TC-1402-C			$ 548,000.00
	B-3 (Incinerator)	B-3 (Incinerator) - Furnish & Install Additional Burners For Incinerator #1	1996	TC-9602-C			$ 123,865.00
	B-3 (Incinerator)	B-3 (Incinerator) - HVAC For The Belt Filter Press Room	2007	TC-0710-C			$ 19,817.00
	B-3 (Incinerator)	B-3 (Incinerator) - ID Fan & Stack Installation	1982	TC-8203-P			$ 19,790.00
	B-3 (Incinerator)	B-3 (Incinerator) - Inc. #2 Burner Upgraded & Repair	2006	TC-0603-C			$ 249,127.00
	B-3 (Incinerator)	B-3 (Incinerator) - Incinerator Ash System and Center Drive Repair	2014	TC-1313-C			$ 902,770.00
	B-3 (Incinerator)	B-3 (Incinerator) - Incinerator Natural Gas Conversion & PLC Instrumentation Conversion	2011	TC-1105-C			$ 2,315,000.00
	B-3 (Incinerator)	B-3 (Incinerator) - Incinerator Oxygen Monitor	1991	TC-9107-C			$ 27,970.00
	B-3 (Incinerator)	B-3 (Incinerator) - Incinerator Platform Improvement	2005	TC-0507-C			$ 94,000.00
	B-3 (Incinerator)	B-3 (Incinerator) - Incinerator Secondary Combustion Chamber & Wet Scrubber	2015	TC-1314-C			$ 10,745,000.00
	B-3 (Incinerator)	B-3 (Incinerator) - Install ID Fan & Breaching	1988	TC-8809-C			$ 56,375.00
	B-3 (Incinerator)	B-3 (Incinerator) - Install Sludge/BFP Dewatering Syst.	1991	TC-9103-C			$ 1,118,000.00
	B-3 (Incinerator)	B-3 (Incinerator) - Installation of ID Fan #2 and Scrubber #2	2005	TC-0509-C			$ 155,500.00
	B-3 (Incinerator)	B-3 (Incinerator) - Modifications To Building B-3	1985	TC-8504-C			$ 78,800.00
	B-3 (Incinerator)	B-3 (Incinerator) - Odor Control System Installation	1982	TC-8205-C			$ 59,975.00
	B-3 (Incinerator)	B-3 (Incinerator) - Original Installation	1974	Original plant construction			$ 7,022,148.00
	B-3 (Incinerator)	B-3 (Incinerator) - Overhaul #2 Incin/Install Add'L Burners	1997	TC-9705-C			$ 273,885.00
	B-3 (Incinerator)	B-3 (Incinerator) - Procurement & Installation of Odor Control Equipment	1992	TC-9114-C			$ 85,800.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	B-3 (Incinerator)	B-3 (Incinerator) - Redundant Continuous Emissions Monitor and Data Acquisition System	2005	TC-0512-C			$ 389,800.00
	B-3 (Incinerator)	B-3 (Incinerator) - Scrubber Drain Piping Revisions-Incin. #2	1990	TC-9004-C			$ 9,987.00
	B-3 (Incinerator)	B-3 (Incinerator) - Sludge Conveyor System Modifications	2014	TC-1315-C			$ 309,900.00
	B-4 (Thickening)	B-4 (Thickening) - B-4 HVAC	1988	TC-8811-C			$ 114,800.00
	B-4 (Thickening)	B-4 (Thickening) - Building B-4 Structural Rehabilitation	2011	TC-1104-C			$ 1,242,745.00
	B-4 (Thickening)	B-4 (Thickening) - GBT Elec/Instr/Controls	2012	TC-1109-C			$ 1,879,083.45
	B-4 (Thickening)	B-4 (Thickening) - Grease & Odor Control System	2013	TC-1306-C			$ 3,390,558.80
	B-4 (Thickening)	B-4 (Thickening) - Installation of a Shaftless Screw Conveyor and Screen for Grease Offloading	2008	TC-0807-C			$ 157,200.00
	B-4 (Thickening)	B-4 (Thickening) - Original Installation	1974	Original plant construction			$ 1,048,450.00
	B-4 (Thickening)	B-4 (Thickening) - Primary Scum & Grease Transfer Piping	2009	TC-0908-C			$ 126,700.00
	B-4 (Thickening)	B-4 (Thickening) - Sludge and Grease Handling Systems Piping Modifications	2008	TC-0808-C			$ 257,820.00
	B-4 (Thickening)	B-4 (Thickening) - Sludge Screening Unit	2008	P2008-10			$ 154,300.00
	B-4 (Thickening)	B-4 (Thickening) - Solids Handling Upgrade FOG Building	2017	TC-1608-C			$ 5,062,323.00
	B-6 (Blower)	B-6 (Blower) - 4Th Blower Addition	2015	TC-1503-C			$ 1,191,400.00
	B-6 (Blower)	B-6 (Blower) - Building Improvements	2018	TC-1717-C			$ 124,730.00
	B-6 (Blower)	B-6 (Blower) - Induction Motor For Aeration Blower	2009	P2009-04			$ 51,740.00
	B-6 (Blower)	B-6 (Blower) - Original Installation	2003	TC-0307-C			$ 984,590.00
	Bulkhead	Bulkhead - Original Installation	1974	Original plant construction			$ 938,263.00
	Construction of an Alternate Road for WRTP	Construction of an Alternate Road for WRTP - Original Installation	2000	TC-9908-C			$ 206,636.25
	EB-2 & ET-1 to ET-4 (Sludge Storage)	EB-2 & ET-1 to ET-4 (Sludge Storage) - Blowers For Sludge Holding Tank	2007	P2006-23			$ 38,714.00
	EB-2 & ET-1 to ET-4 (Sludge Storage)	EB-2 & ET-1 to ET-4 (Sludge Storage) - Hauled Sludge Screening Unit	2008	P2008-10			$ 154,300.00
	EB-2 & ET-1 to ET-4 (Sludge Storage)	EB-2 & ET-1 to ET-4 (Sludge Storage) - Installation of Primary Sludge Monitoring Level Detectors	2008	TC-0804-C			$ 102,063.00
	EB-2 & ET-1 to ET-4 (Sludge Storage)	EB-2 & ET-1 to ET-4 (Sludge Storage) - MCC For Sludge Blowers	2007	P2007-03			$ 14,200.00
	EB-2 & ET-1 to ET-4 (Sludge Storage)	EB-2 & ET-1 to ET-4 (Sludge Storage) - Original Installation acquired from City of Chester	1939		Converted to sludge storage as part of WRTP construction. Conversion included above. Oct 2006 cost opinion = $2,211,275		$ 66,200.80
	EB-2 & ET-1 to ET-4 (Sludge Storage)	EB-2 & ET-1 to ET-4 (Sludge Storage) - Sludge Mixing And Pumping	2008	DELCORA			$ 369,853.00
	Emergency Paging System	Emergency Paging System - Original Installation	2003	DELCORA			$ 143,700.00
	Energy Conservation	Energy Conservation - Lighting Improvements	2010	TP-1003-C			$ 235,000.00
	Generator	Generator - Original Installation	2015	DELCORA			$ 265,000.00
	Hauled Waste Acceptance Facility	Hauled Waste Acceptance Facility - Original Installation	2013	TC-1311-C			$ 1,083,800.00
	Key Card System at WRTP	Key Card System at WRTP - Original Installation	2000	DELCORA			$ 18,785.00
	Pit 1 (Valve)	Pit 1 (Valve) - Original Installation	1974	Original plant construction			$ 76,840.00
	Pit 2 (Mag Meter)	Pit 2 (Mag Meter) - Original Installation	1974	Original plant construction			$ 77,049.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	Pit 3 (Mag Meter)	Pit 3 (Mag Meter) - Original Installation	1974	Original plant construction			$ 38,214.00
	Pit 4 (Sludge Receiving Station)	Pit 4 (Sludge Receiving Station) - Original Installation	1974	Original plant construction			$ 33,586.00
	Pit 5 (Potable Water)	Pit 5 (Potable Water) - Original Installation	1974	Original plant construction			$ 22,283.00
	Plant Electrical Distribution	Plant Electrical Distribution - Improvements	2018	TC-1717-C	Includes poles & 15kV duct bank		$ 856,766.00
	Plant Electrical Distribution	Plant Electrical Distribution - Original Installation	1974	Original plant construction			$ 573,678.00
	Primary Switchgear	Primary Switchgear - Electrical Improvements	2005	DELCORA			$ 62,849.00
	Primary Switchgear	Primary Switchgear - Original Installation	1974	Original plant construction			$ 131,535.00
	RAS Line	RAS Line - RAS Line Replacement	2003	TC-0312-C			$ 1,102,245.00
	Replace Fencing at WRTP	Replace Fencing at WRTP - N/A	2001	TC&CD-0102-C			$ 163,319.00
	S-2 (Plant Outfall)	S-2 (Plant Outfall) - Installation of Effluent Flow Totalizers	2009	PEW-0909-C			$ 20,597.00
	S-2 (Plant Outfall)	S-2 (Plant Outfall) - Original Installation	1974		Included in Bulkhead above		$ -
	Substation #1	Substation #1 - 480V Distribution/Improvements	2018	TC-1717-C			$ 1,369,482.00
	Substation #2	Substation #1 - Original Installation	1974	Original plant construction			$ 409,494.00
	Substation #3	Substation #1 - Replacement of 480V Underground Cable from Substation #1 to EPS-1	2011	TC-1108-C			$ 126,890.00
	Substation #2 (old sub-2 & sub 3)	Substation #2 (old sub-2 & sub 3) - Improvements	2019	TC-1717-C			$ 130,764.00
	Substation #2 (old sub-2 & sub 3)	Substation #2 (old sub-2 & sub 3) - Original Installation	1974	Original plant construction			$ 331,747.00
	Substation #2 (old sub-2 & sub 3)	Substation #2 (old sub-2 & sub 3) - WRTP Substation No. 2 Replacement	2019	TC-1904-C			$ 1,442,777.00
	Substation #3 (old sub-4)	Substation #3 (old sub-4) - 480V Distribution/Improvements	2018	TC-1717-C			$ 1,039,262.00
	Substation #3 (old sub-4)	Substation #3 (old sub-4) - Original Installation	1974	Original plant construction			$ 316,329.00
	T-1 & T-2 (Grit)	T-1 & T-2 (Grit) - Gate/Valve Improvements	2018	TC-1717-C			$ 299,664.00
	T-1 & T-2 (Grit)	T-1 & T-2 (Grit) - Grit Tank Screens	2017	TC-1608-C			$ 3,266,432.00
	T-1 & T-2 (Grit)	T-1 & T-2 (Grit) - Original Installation	1974	Original plant construction			$ 1,350,598.00
	T-11 to T-14 (Aeration)	T-11 to T-14 (Aeration) - Aeration Panel Replacement	2012	TC-1204-C			$ 1,143,000.00
	T-11 to T-14 (Aeration)	T-11 to T-14 (Aeration) - Aeration Panels	2016	TC-1601-C			$ 3,980,000.00
	T-11 to T-14 (Aeration)	T-11 to T-14 (Aeration) - Aeration System Upgrades	2004	TC-0307-C			$ 4,285,650.00
	T-11 to T-14 (Aeration)	T-11 to T-14 (Aeration) - Install Submersible Aerators	1991	TC-9104-C			$ 92,861.00
	T-11 to T-14 (Aeration)	T-11 to T-14 (Aeration) - Original Installation	1974	Original plant construction			$ 6,247,180.00
	T-11 to T-14 (Aeration)	T-11 to T-14 (Aeration) - Tank Improvements	2018	TC-1717-C			$ 3,047,789.00
	T-15 to T-18 (Secondary Clarifiers)	T-15 to T-18 (Secondary Clarifiers) - Clarifier Pipe Lining	2011	TC-1107-C			$ 986,000.00
	T-15 to T-18 (Secondary Clarifiers)	T-15 to T-18 (Secondary Clarifiers) - Clarifier T-18 Equipment Replacement	2016	TC-1704-C			$ 1,024,500.00
	T-15 to T-18 (Secondary Clarifiers)	T-15 to T-18 (Secondary Clarifiers) - Original Installation	1974	Original plant construction			$ 3,420,075.00
	T-15 to T-18 (Secondary Clarifiers)	T-15 to T-18 (Secondary Clarifiers) - Overhaul Clarifier Tank T-17	1999	TC-9902-C			$ 172,805.00
	T-15 to T-18 (Secondary Clarifiers)	T-15 to T-18 (Secondary Clarifiers) - Overhaul Clarifier Tank T-18	1997	TC-9703-C			$ 173,000.00
	T-15 to T-18 (Secondary Clarifiers)	T-15 to T-18 (Secondary Clarifiers) - Repairs To Clarifier T-15	2000	TC-9910-C			$ 179,071.00
	T-15 to T-18 (Secondary Clarifiers)	T-15 to T-18 (Secondary Clarifiers) - Repairs To Clarifier T-16	2002	TC-0105-C			$ 210,439.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	T-15 to T-18 (Secondary Clarifiers)	T-15 to T-18 (Secondary Clarifiers) - T-15 Thru T-17 Equipment	2018	TC-1717-C			$ 2,453,732.00
	T-19 to T-20 (Post Aeration)	T-19 to T-20 (Post Aeration) - FRP Baffle Walls	2018	TC-1717-C			$ 60,000.00
	T-19 to T-20 (Post Aeration)	T-19 to T-20 (Post Aeration) - Original Installation	1974	Original plant construction			$ 260,705.00
	T-21 to T-22 (Chlorine Contact)	T-21 to T-22 (Chlorine Contact) - Chlorine Equipment: Procure & Install	1992	TC-9204-C			$ 89,980.00
	T-21 to T-22 (Chlorine Contact)	T-21 to T-22 (Chlorine Contact) - Furnish/Install Chlorination Equip.	1991	TC-9112-C			$ 83,940.00
	T-21 to T-22 (Chlorine Contact)	T-21 to T-22 (Chlorine Contact) - Original Installation	1974	Original plant construction			$ 733,940.00
	T-21 to T-22 (Chlorine Contact)	T-21 to T-22 (Chlorine Contact) - Tank Improvements	2018	TC-1717-C			$ 599,197.00
	T-23 to T-26 (Inside B-4)	T-23 to T-26 (Inside B-4) - Original Installation	1974	Original plant construction			$ 2,616,573.00
	T-27 (Secondary Clarifier)	T-27 (Secondary Clarifier) - Original Installation	1994	TC-9309-C	Included in PS-5 above		$ -
	T-27 (Secondary Clarifier)	T-27 (Secondary Clarifier) - T-27 Weir Adjustment	2007	TC-0711-C			$ 19,950.00
	T-3 to T-10 (Primary Clarifiers)	T-3 to T-10 (Primary Clarifiers) - Installation of Primary Sludge Monitoring Level Detectors	2008	TC-0804-C			$ 102,063.00
	T-3 to T-10 (Primary Clarifiers)	T-3 to T-10 (Primary Clarifiers) - Original Installation	1974	Original plant construction			$ 3,445,796.00
	T-3 to T-10 (Primary Clarifiers)	T-3 to T-10 (Primary Clarifiers) - Primary Influent Aeration Channel Upgrade	2014	TC-1404-C			$ 144,500.00
	T-3 to T-10 (Primary Clarifiers)	T-3 to T-10 (Primary Clarifiers) - Tank Improvements	2018	TC-1717-C			$ 2,043,938.00
	Trench Duct Installation	Trench Duct Installation - Trench Duct Installation (Communication Raceway)	2002	TC-0110-C			$ 540,000.00
	Utility Water Distribution System	Utility Water Distribution System - Plant Utility Water System Upgrade	2016	TC-1506-C			$ 5,055,023.00
	Utility Water Distribution System	Utility Water Distribution System - Utility Water Line Replacement	1988	TC-8804-C			$ 129,550.00
	Valve Pit	Valve Pit - Construction Of Concrete Valve Pit & Valve Installation	1984	TC-8403-C			$ 55,834.00
	Yard Piping	Yard Piping - Original Installation	1974	Original plant construction			$ 75,982.00
	SPRINGHILL FARMS WWTP	SPRINGHILL FARMS WWTP WWTP - Initial facility cost including pump station, building, generator, fencing, paving, etc.	1988	Estimate			$ 725,000.00
	Corrine Village aka Pocopson Preserve	Corrine Village aka Pocopson Preserve WWTP - GENERATOR W/ FUEL TANK	2010	2018 appraisel number, backdated to the correct year.			$ 34,546.91
	Corrine Village aka Pocopson Preserve	Corrine Village aka Pocopson Preserve WWTP - MISC ELECTRICAL AND INSTRUMENTATION EQUIPMENT	2010	2018 appraisel number, backdated to the correct year.			$ 30,360.04
	Corrine Village aka Pocopson Preserve	Corrine Village aka Pocopson Preserve WWTP - SPRAY SYSTEM	2010	2018 appraisel number, backdated to the correct year.			$ 7,129.86
	Sheeder Tract aka Riverside	Sheeder Tract aka Riverside WWTP - GENERATOR W/ FUEL TANK	2007	2018 appraisel number, backdated to the correct year.			$ 31,273.18
	Sheeder Tract aka Riverside	Sheeder Tract aka Riverside WWTP - MISC ELECTRICAL AND INSTRUMENTATION EQUIPMENT	2007	2018 appraisel number, backdated to the correct year.			$ 27,483.06
	Sheeder Tract aka Riverside	Sheeder Tract aka Riverside WWTP - SPRAY SYSTEM	2007	2018 appraisel number, backdated to the correct year.			$ 6,454.22
	TOTAL TREATMENT AND DISPOSAL EQUIPMENT						**$ 105,317,582.56**

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
390.70	COMPUTER AND SOFTWARE						
		Backup - Barracuda_Admin	2016	DELCORA	All servers assumed to be 3 years old.		$ 8,000.00
		Backup - Barracuda_Plant	2016	DELCORA	All servers assumed to be 3 years old.		$ 8,000.00
		CISCO Switch - ASA5516X	2016	DELCORA	All servers assumed to be 3 years old.		$ 2,350.00
		CISCO Switch - ASA 5516x	2016	DELCORA	All servers assumed to be 3 years old.		$ 2,350.00
		Email Archiver - Jatheon	2016	DELCORA	All servers assumed to be 3 years old.		$ 6,000.00
		Firewall - AdminASA5512	2016	DELCORA	All servers assumed to be 3 years old.		$ 4,800.00
		Firewall - PlantASA5512	2016	DELCORA	All servers assumed to be 3 years old.		$ 11,000.00
		Meraki Switch - Incin Switch	2016	DELCORA	All servers assumed to be 3 years old.		$ 1,500.00
		Proliant DL 360G7 - Plant_ESX2	2016	DELCORA	All servers assumed to be 3 years old.		$ 4,000.00
		Proliant DL380-G7 - Plant_ESX1	2016	DELCORA	All servers assumed to be 3 years old.		$ 4,000.00
		Router - Plant_Router	2016	DELCORA	All servers assumed to be 3 years old.		$ 1,820.00
		Router Cisco - Admin2610XM.delcora.org	2016	DELCORA	All servers assumed to be 3 years old.		$ 1,820.00
		Router Cisco - Plant1760	2016	DELCORA	All servers assumed to be 3 years old.		$ 1,000.00
		SAN - Admin-emc	2016	DELCORA	All servers assumed to be 3 years old.		$ 8,000.00
		SAN - Plant SAN	2016	DELCORA	All servers assumed to be 3 years old.		$ 16,000.00
		SAN - Plant_San	2016	DELCORA	All servers assumed to be 3 years old.		$ 15,000.00
		SAN - Drobo	2016	DELCORA	All servers assumed to be 3 years old.		$ 10,000.00
		SAN - B2_SAN	2016	DELCORA	All servers assumed to be 3 years old.		$ 20,000.00
		Server - VISION	2016	DELCORA	All servers assumed to be 3 years old.		$ 6,000.00
		Server - LTCP-SERVER	2016	DELCORA	All servers assumed to be 3 years old.		$ 3,000.00
		Server - VIBRATIONSRV-02	2016	DELCORA	All servers assumed to be 3 years old.		$ 2,500.00
		Server - MONITOR	2016	DELCORA	All servers assumed to be 3 years old.		$ 2,500.00
		Server - ESXi-01-1	2016	DELCORA	All servers assumed to be 3 years old.		$ 5,000.00
		Server - ESXi-02-2	2016	DELCORA	All servers assumed to be 3 years old.		$ 5,000.00
		Server - ESXi-03-3	2016	DELCORA	All servers assumed to be 3 years old.		$ 5,000.00
		Server - ESX2-Plant	2016	DELCORA	All servers assumed to be 3 years old.		$ 5,000.00
		Server - ESX-Plant	2016	DELCORA	All servers assumed to be 3 years old.		$ 5,000.00
		Server + VMware - TRITONMNGR	2016	DELCORA	All servers assumed to be 3 years old.		$ 1,100.00
		Server + VMware - ADMINPRINTSRV	2016	DELCORA	All servers assumed to be 3 years old.		$ 1,100.00
		Server + VMware - WEBSENSEDB	2016	DELCORA	All servers assumed to be 3 years old.		$ 1,100.00
		Server + VMware - ADMINSRV	2016	DELCORA	All servers assumed to be 3 years old.		$ 1,100.00
		Server + VMware - APPSERVER2	2016	DELCORA	All servers assumed to be 3 years old.		$ 1,100.00
		Server + VMware - APPSERVER3	2016	DELCORA	All servers assumed to be 3 years old.		$ 1,100.00
		Server + VMware - FILESERVER	2016	DELCORA	All servers assumed to be 3 years old.		$ 1,100.00
		Server + VMware - GISAPP	2016	DELCORA	All servers assumed to be 3 years old.		$ 2,200.00
		Server + VMware - INFORAPP	2016	DELCORA	All servers assumed to be 3 years old.		$ 1,100.00
		Server + VMware - INFORREPORT	2016	DELCORA	All servers assumed to be 3 years old.		$ 1,100.00
		Server + VMware - GISDATA	2016	DELCORA	All servers assumed to be 3 years old.		$ 1,100.00
		Server + VMware - INFORDATA	2016	DELCORA	All servers assumed to be 3 years old.		$ 2,200.00
		Server + VMware - MAILSRV	2016	DELCORA	All servers assumed to be 3 years old.		$ 1,100.00
		Server + VMware - PLANTSRV	2016	DELCORA	All servers assumed to be 3 years old.		$ 1,100.00
		Server + VMware - ADMINPRINT2	2016	DELCORA	All servers assumed to be 3 years old.		$ 1,100.00
		Server + VMware - INFORTEST	2016	DELCORA	All servers assumed to be 3 years old.		$ 2,200.00
		Server + VMware - PLANTR2SRV	2016	DELCORA	All servers assumed to be 3 years old.		$ 1,100.00
		Server + VMware - VCENTER2	2016	DELCORA	All servers assumed to be 3 years old.		$ 1,100.00
		Server + VMware - IMAGEAPP	2016	DELCORA	All servers assumed to be 3 years old.		$ 1,100.00
		Server + VMware - IMAGEDATA	2016	DELCORA	All servers assumed to be 3 years old.		$ 1,100.00
		Server + VMware - CEMS01P20110758	2016	DELCORA	All servers assumed to be 3 years old.		$ 1,100.00
		Server + VMware - CEMS02P20110758	2016	DELCORA	All servers assumed to be 3 years old.		$ 1,100.00
		Server + VMware - Eopsdata18_VM	2016	DELCORA	All servers assumed to be 3 years old.		$ 1,100.00
		Server + VMware - Eopsweb18_VM	2016	DELCORA	All servers assumed to be 3 years old.		$ 1,100.00
		Server + VMware - Historian_VM	2016	DELCORA	All servers assumed to be 3 years old.		$ 1,100.00
		Server + VMware - NewPC1_VM	2016	DELCORA	All servers assumed to be 3 years old.		$ 1,100.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
		Server + VMware - VEEAM Server	2016	DELCORA	All servers assumed to be 3 years old.		$ 1,100.00
		Server - NewPCS2	2016	DELCORA	All servers assumed to be 3 years old.		$ 1,000.00
		ESX Server - HPE PROLIANT SERVER	2016	DELCORA	All servers assumed to be 3 years old.		$ 39,519.68
		STORAGE - HP SAN	2016	DELCORA	All servers assumed to be 3 years old.		$ 46,138.00
		Switch - Admin_MDF_SW2	2016	DELCORA	All servers assumed to be 3 years old.		$ 2,300.00
		Switch - VMware_Switch.delcora2000.org	2016	DELCORA	All servers assumed to be 3 years old.		$ 1,100.00
		Switch - SAN_SWITCH	2016	DELCORA	All servers assumed to be 3 years old.		$ 2,300.00
		Switch - Plant_B2	2016	DELCORA	All servers assumed to be 3 years old.		$ 3,000.00
		Switch - Plant B2	2016	DELCORA	All servers assumed to be 3 years old.		$ 3,000.00
		Switch - Blower Build	2016	DELCORA	All servers assumed to be 3 years old.		$ 1,500.00
		Switch - Plant_B5	2016	DELCORA	All servers assumed to be 3 years old.		$ 3,000.00
		Switch - PlantTrailer	2016	DELCORA	All servers assumed to be 3 years old.		$ 1,500.00
		UCSC-C220-M3SBE - UCS_Server	2016	DELCORA	All servers assumed to be 3 years old.		$ 10,000.00
	TOTAL COMPUTER AND SOFTWARE						**$ 311,997.68**
391.70	TRANSPORTATION EQUIPMENT						
		2004 FORD F550 TEREX TELELECT TL36P (#4001)	2004	DELCORA		1	$ 83,805.00
		2006 FORD TRUCK F-350 (#0502)	2005	DELCORA		1	$ 23,242.00
		2006 FORD TRUCK F-150 (#0601)	2006	DELCORA		1	$ 18,250.00
		2007 FORD TRUCK (#0604)	2006	DELCORA		1	$ 19,300.00
		2008 ESCAPE 4WD (#0702)	2007	DELCORA		1	$ 15,337.00
		2008 ESCAPE 4WD (#0703)	2007	DELCORA		1	$ 15,337.00
		2008 ESCAPE 4WD (#0704)	2007	DELCORA		1	$ 15,337.00
		2008 FORD TRUCK S-DTY F-350 (#0706)	2007	DELCORA		1	$ 15,127.00
		2008 FORD TRUCK S-DTY F-250 (#0707)	2007	DELCORA		1	$ 28,298.00
		2008 FORD TRUCK - F-250 (#0709)	2007	DELCORA		1	$ 18,470.00
		2008 FORD ESCAPE (#0801)	2008	DELCORA		1	$ 24,615.00
		2008 FORD ESCAPE (#0802)	2008	DELCORA		1	$ 16,144.00
		2008 FORD ESCAPE (#0803)	2008	DELCORA		1	$ 16,144.00
		2008 FORD TRUCK - F250 (#0804)	2008	DELCORA		1	$ 18,595.00
		2008 FORD TRUCK - F250 (#0805)	2008	DELCORA		1	$ 18,595.00
		2009 FORD TRUCK (#0902)	2009	DELCORA		1	$ 43,699.00
		2010 INTERNATIONAL TRUCK (#0903)	2009	DELCORA		1	$ 180,492.80
		2008 FREIGHTLINER (#0904)	2008	DELCORA		1	$ 149,689.00
		2010 FORD TRUCK RANGER (#0905)	2009	DELCORA		1	$ 17,511.87
		2010 FORD TRUCK RANGER (#0906)	2009	DELCORA		1	$ 17,511.87
		2010 FORD TRUCK RANGER (#0908)	2009	DELCORA		1	$ 17,511.87
		2010 FORD TRUCK RANGER (#0909)	2009	DELCORA		1	$ 25,182.84
		2011 FORD F350 TRUCK (#1101)	2011	DELCORA		1	$ 21,532.34
		2011 FORD F350 TRUCK (#1102)	2011	DELCORA		1	$ 21,532.34
		2011 FORD F350 TRUCK (#1103)	2011	DELCORA		1	$ 21,532.34
		2011 FORD F350 TRUCK (#1104)	2011	DELCORA		1	$ 25,117.70
		2012 FORD F-250 PICKUP TRUCK (#1201)	2012	DELCORA		1	$ 23,663.00
		2012 FORD F-250 PICKUP TRUCK (#1202)	2012	DELCORA		1	$ 23,663.00
		2012 FORD F-250 PICKUP TRUCK (#1203)	2012	DELCORA		1	$ 23,663.00
		2012 FORD VAN (#1204)	2012	DELCORA		1	$ 21,542.95
		2012 FORD F-450 TRUCK (#1205)	2012	DELCORA		1	$ 53,393.01
		2013 FORD ESCAPE (#1301)	2012	DELCORA		1	$ 23,220.00
		2014 FORD F-250 TRUCK (#1302)	2013	DELCORA		1	$ 24,760.22
		2014 FORD F-350 TRUCK (#1303)	2013	DELCORA		1	$ 28,115.00
		2014 FORD F450 TRUCK (DUMP) (#1401)	2014	DELCORA		1	$ 45,982.00
		2014 FORD ESCAPE (#1402)	2014	DELCORA		1	$ 24,732.00
		2008 CASE BACKHOE (#BH)	2008	DELCORA		1	$ 108,053.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
		2016 INTERNATIONAL (VAC) (#1601)	2016	DELCORA		1	$ 93,050.59
		2016 FORD TRANSIT VAN (#1602)	2016	DELCORA		1	$ 22,271.00
		2016 FORD F-150 CREW CAB (#1603)	2016	DELCORA		1	$ 29,199.00
		2017 FORD ESCAPE (#1604)	2016	DELCORA		1	$ 22,754.00
		2017 FORD ESCAPE (#1605)	2016	DELCORA		1	$ 22,754.00
		2017 FORD ESCAPE (#1606)	2016	DELCORA		1	$ 22,754.00
		2017 FORD ESCAPE (#1607)	2016	DELCORA		1	$ 22,954.00
		2017 FORD ESCAPE (#1608)	2016	DELCORA		1	$ 22,754.00
		2017 FORD ESCAPE (#1609)	2016	DELCORA		1	$ 22,754.00
		2017 FORD EXPLORER (#1610)	2016	DELCORA		1	$ 34,845.00
		2017 FORD F-350 (#1611)	2016	DELCORA		1	$ 25,571.00
		2000 STERLING VAC TRUCK (#9905)	1999	DELCORA		1	$ 263,103.00
		TT MOUNTED GENERATOR (#MOBILGEN2)	2015	DELCORA		1	$ 107,500.00
		2018 FORD F-250 (#1801)	2018	DELCORA		1	$ 26,899.55
		FORD F-350 CREW CAB (#1802)	2018	DELCORA		1	$ 32,236.55
		2018 FORD F-250 (#1803)	2018	DELCORA		1	$ 26,899.55
		2018 FORD F-250 (#1804)	2018	DELCORA		1	$ 26,899.55
		2017 FORD ESCAPE (#1701)	2017	DELCORA		1	$ 23,786.00
		2017 peterbilt PB348 (#1702)	2017	DELCORA		1	$ 245,651.00
		2018 FORD TRANSIT (#1805)	2018	DELCORA		1	$ 214,100.00
		2019 FORD F-250 (#1901)	2019	DELCORA		1	$ 27,179.00
		2019 FORD F-250 (#1902)	2019	DELCORA		1	$ 27,179.00
		2019 FORD F-250 (#1903)	2019	DELCORA		1	$ 27,179.00
		2019 FORD TRANSIT VAN (#1904)	2019	DELCORA		1	$ 28,170.00
		2019 FORD F-550 UTILITY (#1905)	2019	DELCORA		1	$ 48,467.00
		2019 FORD F-150 4x4 SUPERCREW (#1906)	2019	DELCORA		1	$ 42,530.00
		VACTOR (#9905)		DELCORA		1	$ 21,532.34
		Crane/Boom Truck (#2001)		DELCORA		1	$ 92,500.00
		1998 BACKHOE (#0076)	1998	DELCORA		1	$ 54,322.00
		2006 TRUCK (#0605)	2006	DELCORA		1	$ 297,207.00
		CARAVAN (#0701)	2007	DELCORA		1	$ 14,905.00
		2006 TRAILER (#NONE ISSUED)	2009	DELCORA		1	$ 3,985.00
		2012 DUMP TRUCK (#1105)	2011	DELCORA		1	$ 35,146.00
		2012 VACTOR & CHASSIS TRUCK (#1106)	2011	DELCORA		1	$ 85,144.11
		2011 GENERATOR TRAILER (#NONE ISSUED)	2011	DELCORA		1	$ 11,098.00
		2012 TOWMASTER TRAILER (#NONE ISSUED)	2011	DELCORA		1	$ 14,439.00
		2015 F350 4X4 CREW CAB (#1403)	2014	DELCORA		1	$ 32,527.00
		2015 F250 4X4 STD CAB (#1404)	2014	DELCORA		1	$ 25,925.00
		2014 F150 4X4 STD CAB (#1405)	2014	DELCORA		1	$ 23,163.00
		2015 F250 4X4 STD CAB (#1406)	2014	DELCORA		1	$ 33,525.00
		2014 F150 4X4 STD CAB (#1407)	2014	DELCORA		1	$ 29,888.00
		2014 5D CUES DIESEL SPRINTER VAN (#1408)	2014	DELCORA		1	$ 214,905.00
	TOTAL TRANSPORTATION EQUIPMENT					**79**	**$ 3,788,348.39**
396.70	COMMUNICATION EQUIPMENT						
		Antenna's	2016	DELCORA		53	$ 8,350.00
		Cellular RADIO	2016	DELCORA		10	$ 10,000.00
		Ethernet Radio	2016	DELCORA		32	$ 44,655.00
		Licensed Radio's	2016	DELCORA		21	$ 104,050.00
		Spread Spectrum Radio's	2016	DELCORA		9	$ 29,800.00
	TOTAL COMMUNICATION EQUIPMENT					**125**	**$ 196,855.00**
	SYSTEM TOTAL						**$ 263,682,616.27**

APPLICATION EXHIBIT A5 – ROSE VALLEY MAP (PUBLIC VERSION – AMENDED COPY)

Description of Service Area (Segment #, Bearing, Distance in ft.)

#	Bearing	Distance	#	Bearing	Distance
1	S 61°01'59" E	915.18	41	N 83°52'38" W	66.83
2	S 01°42'42" E	305.32	42	N 78°05'42" W	249.09
3	S 59°52'50" E	289.33	43	N 16°21'29" W	126.47
4	S 01°25'41" E	136.10	44	N 24°26'12" W	409.53
5	S 69°38'51" E	455.38	45	S 73°18'24" W	190.64
6	N 19°58'26" E	550.69	46	N 26°00'28" W	482.65
7	S 73°17'48" E	354.67	47	N 55°42'01" E	139.73
8	S 82°43'33" E	76.28	48	N 26°08'16" W	315.29
9	S 21°57'43" W	234.72	49	N 55°44'39" W	495.73
10	S 26°02'10" W	473.04	50	N 75°41'32" W	345.71
11	S 25°35'44" W	185.16	51	N 23°58'35" W	300.26
12	S 28°24'55" W	303.27	52	N 58°13'28" W	267.70
13	S 55°26'35" E	423.14	53	S 44°16'24" W	73.23
14	S 57°45'32" E	427.94	54	N 44°55'49" W	96.44
15	N 25°42'50" E	406.19	55	N 51°05'01" W	1197.73
16	S 61°29'27" E	1165.33	56	N 18°01'37" W	110.81
17	S 26°45'21" W	219.42	57	N 55°00'18" W	278.73
18	S 63°00'36" E	334.11	58	S 35°39'32" W	693.45
19	S 25°51'40" W	1409.01	59	S 79°19'13" W	14.87
20	S 24°04'31" W	918.48	60	N 78°31'59" W	38.79
21	S 04°44'54" W	665.27	61	N 11°28'01" E	30.00
22	S 84°33'54" E	301.74	62	S 78°31'59" E	30.51
23	S 05°02'11" W	30.00	63	N 35°11'59" E	543.50
24	N 85°44'53" W	301.12	64	N 37°31'21" E	144.94
25	S 04°47'10" W	920.34	65	N 41°15'40" E	102.22
26	S 09°47'12" W	300.85	66	N 46°29'01" E	206.10
27	S 17°48'24" W	107.49	67	S 44°31'34" E	23.59
28	S 76°59'08" E	257.38	68	N 45°28'26" E	634.75
29	N 21°34'00" E	144.61	69	N 00°04'41" W	215.44
30	N 81°26'35" E	384.50	70	N 06°16'19" E	688.29
31	S 08°33'25" E	30.00	71	N 07°51'13" E	630.14
32	S 81°26'35" W	367.22	72	N 05°50'21" W	355.97
33	S 21°34'00" W	153.16	73	N 79°46'25" E	1093.90
34	N 76°59'08" W	287.45	74	N 09°37'08" W	955.44
35	S 23°12'48" W	271.85	75	N 45°26'31" W	108.31
36	N 65°05'24" W	321.50	76	N 59°57'52" W	61.03
37	N 77°19'48" W	157.62	77	N 36°36'48" E	355.22
38	S 76°49'52" W	69.87			
39	S 72°34'27" W	174.96			
40	S 80°36'40" W	128.48			

INDEX PLAN

INDEX PLAN

Delaware Co.

SERVICE AREA TERRITORY

ROSE VALLEY SERVICE AREA
20,786,977 square ft.
477.2 acres
0.746 square miles

(1) Beginning Point: PASPC Coordinates: North: 217,3087.88, East: 2,630,968.60'; at a point being the intersection of the southerly R.O.W. of Manchester Rd. with the southerly R.O.W. of Woodward Rd. in Rose Valley Borough, Delaware County, PA and proceeding according to the listed bearings and distances noted in the table above.

AQUA

Note
Bearings, distances, area obtained from municipal boundaries, and parcel shapefiles, obtained from http://www.pasda.psu.edu/, in combination with service territory notes provided by DELCORA. The resultant bearings, distances and area do not result from a physical survey on the ground and are approximate and not intended to represent a legal description of property.

NAD 83 (ft) N

Legend
Requested Territory

REV.	DATE	DESCRIPTION
6.		
5.		
4.		
3.		
2.		
1.	5/7/20	ADDED OLD MILL AND BROOKHAVEN RD. PUMP STATIONS AND ADJUSTED SERVICE AREA BOUNDARY

SCALE IN FEET
0 250 500 1,000

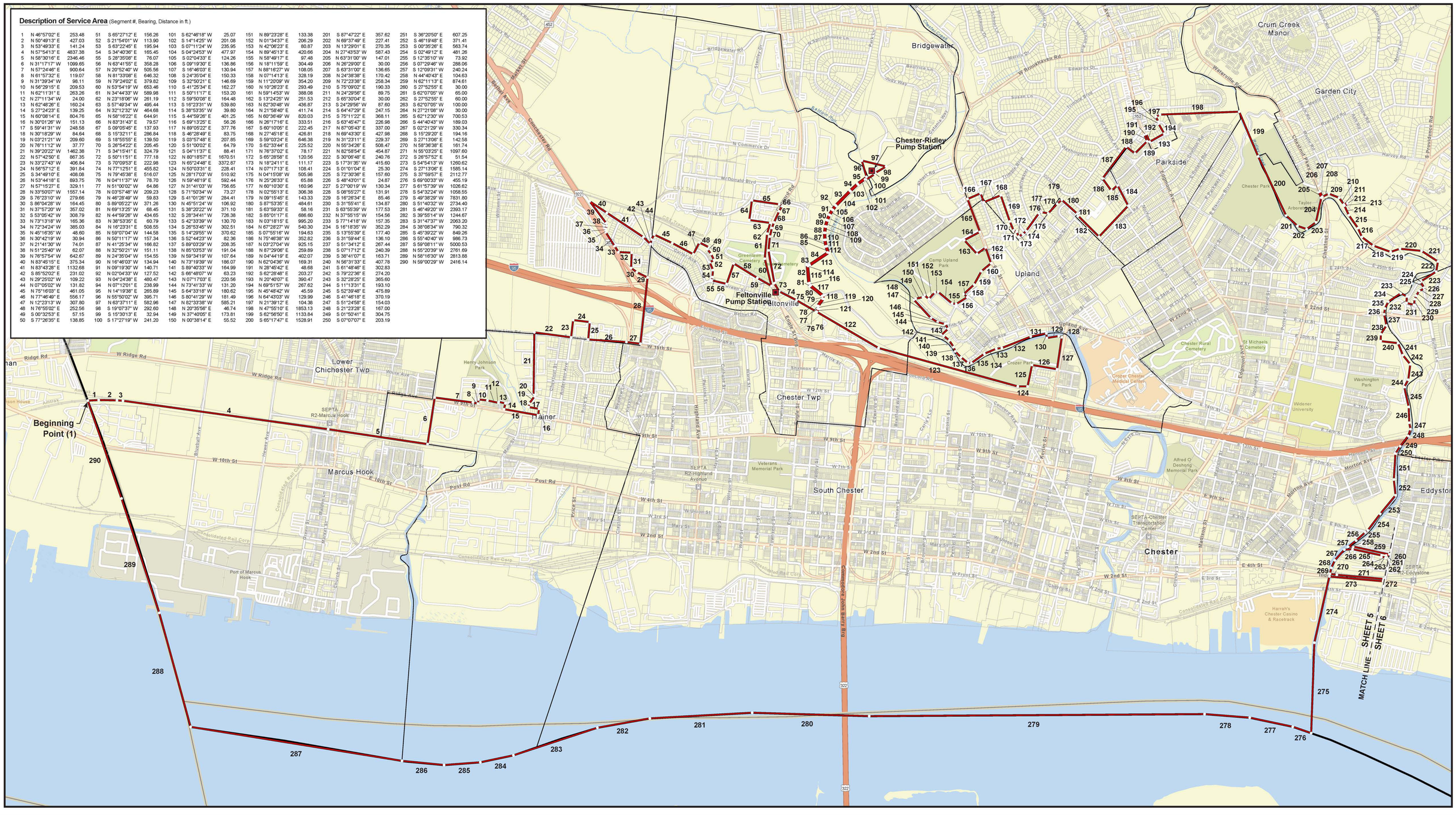
EXHIBIT A
Proposed Service Territory
Aqua Pennsylvania, Inc./DELCORA
Delaware and Chester Counties, Pennsylvania

DATE: 1/31/20 **SCALE: 1" = 500 ft.** SHEET 4

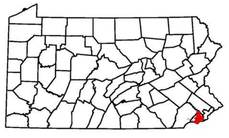
APPLICATION EXHIBIT A6 – CHESTER CITY MAP
(PUBLIC VERSION – AMENDED COPY)

Description of Service Area (Segment #, Bearing, Distance in ft.)

1	N 46°57'02" E	253.48	51	S 85°27'12" E	156.26	101	S 62°46'18" W	25.07	151	N 89°23'28" E	133.38	201	S 87°47'22" E	357.62	251	S 36°20'59" E	607.25
2	N 50°49'13" E	427.03	52	S 21°54'01" W	113.90	102	S 14°14'25" W	201.08	152	N 01°34'37" E	206.29	202	N 69°37'49" E	227.41	252	S 46°19'48" E	371.41
3	N 53°49'33" E	141.24	53	S 63°22'45" E	195.94	103	S 07°11'24" W	235.95	153	N 42°06'23" E	80.87	203	N 13°29'01" E	270.35	253	S 00°35'26" E	563.74
4	N 57°54'13" E	4837.38	54	S 34°40'36" E	165.45	104	S 04°24'53" W	477.97	154	N 89°45'13" E	420.66	204	N 27°43'53" W	587.43	254	S 02°49'12" E	481.26
5	N 58°30'16" E	2346.46	55	S 28°35'08" E	76.07	105	S 02°04'33" E	124.26	155	N 58°49'17" E	97.48	205	N 63°31'00" W	147.01	255	S 12°35'10" W	73.92
6	N 31°17'17" W	1099.65	56	N 63°41'55" E	358.28	106	S 09°19'30" E	136.86	156	N 18°11'59" E	304.49	206	N 26°29'00" E	30.00	256	S 07°29'46" W	288.06
7	N 57°24'46" E	900.64	57	N 20°52'40" W	505.56	107	S 16°46'03" E	130.94	157	N 88°16'27" W	108.05	207	S 63°31'00" E	136.65	257	S 12°09'31" W	240.24
8	N 61°57'32" E	119.07	58	N 81°33'08" E	646.32	108	S 24°35'04" E	150.33	158	N 07°14'13" E	328.19	208	N 24°38'38" E	170.42	258	N 44°40'43" E	104.63
9	N 31°39'34" W	98.11	59	N 79°24'02" E	379.82	109	S 32°50'21" E	146.69	159	N 11°20'09" W	354.20	209	N 72°23'38" E	258.34	259	N 62°11'13" E	874.61
10	N 56°29'15" E	209.53	60	N 53°54'19" W	653.46	110	S 41°25'34" E	162.27	160	N 10°26'23" E	293.49	210	S 75°09'02" E	190.33	260	S 27°52'55" E	30.00
11	N 62°11'31" E	263.26	61	N 34°44'33" W	589.98	111	S 50°11'17" E	153.20	161	N 59°14'53" W	388.08	211	N 24°29'56" E	89.75	261	S 62°07'05" W	65.00
12	N 27°11'34" W	24.06	62	N 23°18'06" E	261.19	112	S 59°50'08" E	164.48	162	S 13°24'25" W	251.53	212	S 65°30'04" E	30.00	262	S 27°52'55" E	60.00
13	N 62°48'26" E	160.24	63	S 57°49'34" W	495.44	113	S 16°23'31" W	539.80	163	N 82°30'48" W	436.87	213	S 24°29'56" W	87.60	263	S 62°07'05" W	100.00
14	S 27°24'23" E	139.25	64	N 32°12'32" W	464.68	114	S 38°53'35" W	39.80	164	N 21°58'40" E	411.74	214	S 64°47'29" E	247.15	264	N 27°21'08" W	30.00
15	N 60°08'14" E	604.76	65	N 58°16'22" E	644.91	115	S 44°59'26" E	401.25	165	N 69°36'49" W	820.03	215	S 75°11'22" E	368.11	265	S 62°12'30" W	700.53
16	N 30°01'26" W	151.13	66	N 83°31'43" E	79.57	116	S 69°13'25" E	56.26	166	N 26°17'16" E	333.51	216	S 63°45'47" E	226.98	266	S 44°40'43" W	189.03
17	S 59°41'31" W	248.58	67	S 09°05'45" E	137.93	117	N 89°05'22" E	377.76	167	S 60°10'05" E	222.45	217	N 87°05'43" E	337.00	267	S 02°21'29" W	330.34
18	N 30°18'29" W	84.64	68	S 15°32'11" E	286.84	118	S 46°28'49" E	83.75	168	N 27°46'18" E	426.81	218	N 69°43'30" E	427.98	268	S 15°29'20" E	194.16
19	N 03°21'31" W	209.60	69	S 18°55'55" E	139.50	119	S 03°57'48" E	207.85	169	S 59°03'24" E	646.38	219	N 31°23'11" E	229.37	269	S 27°13'09" E	142.58
20	N 76°11'12" W	37.77	70	S 26°54'22" E	205.45	120	S 51°00'02" E	64.79	170	S 62°33'44" E	225.52	220	N 55°34'26" E	508.47	270	N 58°36'38" E	161.74
21	N 39°20'22" W	1462.38	71	S 34°15'41" E	324.79	121	S 04°11'37" E	88.41	171	N 76°37'02" E	78.17	221	N 82°58'54" E	454.87	271	N 55°03'25" E	1097.60
22	N 57°47'50" E	867.35	72	S 50°11'51" E	777.18	122	N 80°18'57" E	1670.51	172	S 65°26'58" E	120.56	222	S 30°06'48" E	240.76	272	S 26°57'52" E	51.54
23	N 33°27'43" W	406.84	73	S 70°09'53" E	222.98	123	N 65°24'48" E	3372.87	173	N 18°24'11" E	111.17	223	S 17°31'35" W	415.60	273	S 54°54'13" W	1260.62
24	N 56°57'12" E	391.84	74	N 77°12'51" E	455.82	124	N 50°03'31" E	228.41	174	N 07°17'13" E	108.41	224	S 01°01'04" E	25.30	274	S 27°13'06" E	1585.14
25	S 34°46'10" E	408.08	75	N 79°45'38" E	516.07	125	N 28°17'03" W	510.92	175	N 04°15'08" W	505.98	225	S 72°30'36" E	157.60	275	S 37°59'57" E	2112.77
26	N 53°44'18" E	893.75	76	N 04°11'37" W	78.70	126	N 59°46'19" E	592.44	176	N 25°26'33" E	65.88	226	S 48°43'01" E	24.87	276	S 69°00'33" W	455.19
27	N 57°15'27" E	329.11	77	N 51°00'02" W	64.86	127	N 31°41'03" W	756.65	177	N 60°10'30" E	160.96	227	S 27°00'19" W	130.34	277	S 61°57'39" W	1026.62
28	N 33°50'07" W	1557.14	78	N 03°57'46" W	209.23	128	S 71°50'54" W	306.38	178	N 02°56'13" E	143.33	228	S 08°55'27" E	131.91	278	S 61°43'24" W	1056.55
29	S 76°23'10" W	279.66	79	N 46°28'49" W	59.83	129	S 41°01'26" W	284.41	179	N 09°15'45" E	143.33	229	S 16°26'34" E	85.46	279	S 49°38'29" W	7831.80
30	S 86°04'28" W	164.45	80	S 89°05'22" W	371.26	130	N 45°51'24" W	106.92	180	S 87°53'35" E	484.61	230	S 31°55'41" E	134.87	280	S 51°40'32" W	2734.40
31	N 37°57'20" W	357.02	81	N 69°13'25" W	68.45	131	S 38°20'22" W	371.10	181	S 63°59'33" E	58.16	231	S 63°55'39" W	177.53	281	S 46°49'20" W	2393.17
32	S 53°05'42" W	308.79	82	N 44°59'26" W	434.65	132	S 28°34'41" W	726.38	182	S 85°01'17" E	686.60	232	N 37°55'15" W	154.56	282	S 36°39'14" W	1244.67
33	N 73°13'18" W	165.36	83	N 38°53'35" E	60.79	133	S 42°33'39" W	130.70	183	N 03°18'15" E	995.20	233	S 77°14'18" W	157.35	283	S 31°47'37" W	2063.20
34	N 72°34'24" W	385.03	84	N 16°23'31" E	508.55	134	S 26°53'45" W	302.51	184	N 67°28'27" W	540.30	234	S 16°18'35" W	352.29	284	S 38°06'34" W	790.32
35	N 45°16'35" W	48.60	85	N 59°07'04" W	144.58	135	S 14°29'55" W	370.62	185	S 07°55'16" W	194.63	235	S 13°55'39" E	177.40	285	S 45°39'22" W	849.26
36	N 30°42'19" W	30.94	86	N 50°11'17" W	157.34	136	S 52°44'23" W	82.36	186	N 75°46'38" W	352.82	236	S 31°59'44" E	136.10	286	S 55°40'40" W	986.73
37	N 21°41'30" W	74.01	87	N 41°25'34" W	166.82	137	S 89°03'29" W	208.35	187	N 03°27'04" W	925.15	237	S 51°34'12" E	267.44	287	S 59°08'11" W	5000.53
38	N 51°25'40" W	62.07	88	N 32°50'21" W	151.11	138	N 85°03'53" W	191.04	188	N 87°29'06" E	259.89	238	S 07°17'12" E	240.39	288	N 55°20'39" W	2761.69
39	N 76°57'54" W	642.67	89	N 24°35'04" W	154.55	139	N 59°34'19" W	107.64	189	N 04°44'19" E	402.07	239	S 38°41'07" E	163.71	289	N 58°16'30" W	2813.88
40	N 83°45'15" E	375.34	90	N 16°46'03" W	134.94	140	N 73°19'39" W	186.07	190	N 62°04'36" W	169.31	240	N 56°31'33" E	407.78	290	N 59°00'29" W	2416.14
41	N 83°43'26" E	1132.68	91	N 09°19'30" W	140.71	141	S 89°40'33" W	164.99	191	N 28°46'42" E	48.68	241	S 61°48'46" E	302.83			
42	S 85°52'02" E	231.02	92	N 02°04'33" W	127.52	142	S 66°46'07" W	63.23	192	S 62°28'48" E	203.27	242	S 79°22'36" E	274.20			
43	N 29°25'02" W	109.22	93	N 04°24'38" E	480.47	143	N 07°17'03" E	220.56	193	N 20°40'07" E	390.47	243	S 32°28'25" E	365.60			
44	N 07°05'02" W	131.82	94	N 07°12'01" E	238.99	144	N 73°41'33" W	131.20	194	N 69°51'57" W	267.62	244	S 11°13'31" E	193.10			
45	N 75°16'03" E	461.05	95	N 14°19'38" E	265.89	145	S 64°33'18" W	180.62	195	N 45°48'42" W	45.59	245	S 52°39'48" E	475.89			
46	N 77°46'49" E	556.17	96	N 55°50'02" W	395.71	146	S 80°41'29" W	181.49	196	N 64°43'03" W	129.99	246	S 41°46'18" E	370.19			
47	N 12°23'13" W	307.80	97	N 63°37'11" E	582.96	147	N 82°33'38" W	585.21	197	N 21°39'12" E	104.38	247	S 51°24'58" E	154.03			
48	N 76°55'02" E	262.56	98	S 19°07'37" W	292.60	148	N 20°35'56" E	46.74	198	N 47°56'10" E	1853.13	248	S 21°23'28" E	167.00			
49	S 00°32'53" E	57.15	99	S 15°30'13" E	32.94	149	N 37°40'05" E	173.81	199	S 62°56'50" E	1133.84	249	S 01°50'41" E	304.75			
50	S 77°26'35" E	138.85	100	S 17°27'19" W	241.20	150	N 00°38'14" E	55.52	200	S 65°17'47" E	1528.91	250	S 07°07'07" E	203.19			



INDEX PLAN



SERVICE AREA TERRITORY

SHEET 5 SERVICE AREA
284,321,542 square ft.
6,527.1 Acres
10.199 square miles

(1) Beginning Point: PASPC Coordinates: North: 183,427.99', East: 2,618,280.37'; at a point being the intersection of the approximate centerline of the Amtrak Railroad and the western boundary of Marcus Hook Borough and proceeding according to the listed bearings and distances noted in the table above.

AQUA

Note
Bearings, distances, area obtained from municipal boundaries, and parcel shapefiles, obtained from http://www.pasda.psu.edu/, in combination with service territory notes provided by DELCORA. The resultant bearings, distances and area do not result from a physical survey on the ground and are approximate and not intended to represent a legal description of property.

NAD 83 (ft)

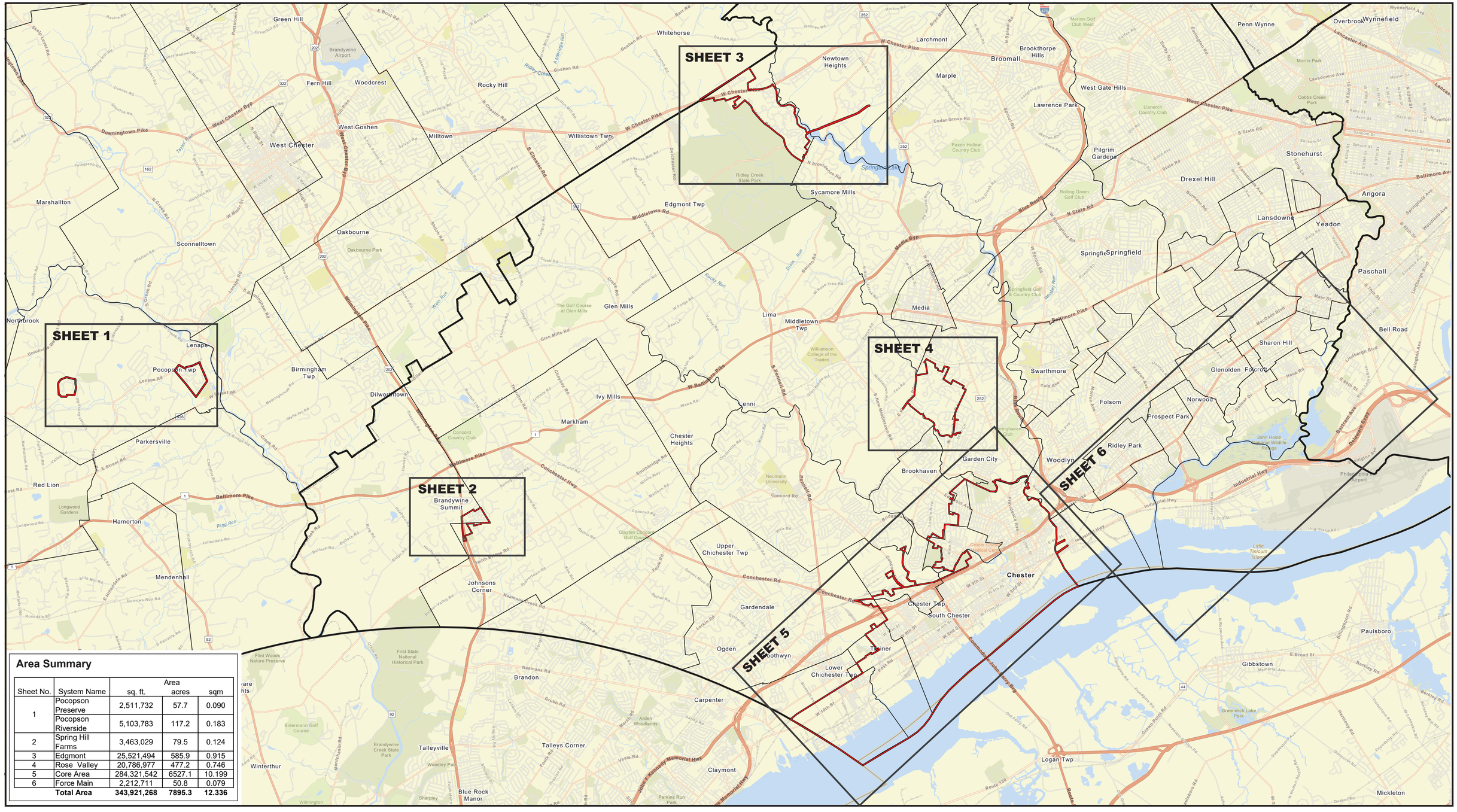
SCALE IN FEET
0 500 1,000 1,500

REV.	DATE	DESCRIPTION
6.		
5.		
4.		
3.		
2.		
1.	5/7/20	ADDED EDDYSTONE PUMP STATION, DELAWARE RIVER INTERCEPTOR BYPASS AND ADJUSTED SERVICE AREA BOUNDARY

EXHIBIT A
Proposed Service Territory
Aqua Pennsylvania, Inc./DELCORA
Delaware and Chester Counties, Pennsylvania

DATE: 1/31/20 | SCALE: 1" = 1,000 ft. | SHEET 5

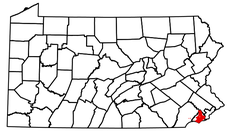
APPLICATION EXHIBIT A1 – INDEX
(PUBLIC VERSION – AMENDED COPY)



Area Summary

Sheet No.	System Name	Area sq. ft.	Area acres	Area sqm
1	Pocopson Preserve	2,511,732	57.7	0.090
	Pocopson Riverside	5,103,783	117.2	0.183
2	Spring Hill Farms	3,463,029	79.5	0.124
3	Edgmont	25,521,494	585.9	0.915
4	Rose Valley	20,786,977	477.2	0.746
5	Core Area	284,321,542	6527.1	10.199
6	Force Main	2,212,711	50.8	0.079
	Total Area	**343,921,268**	**7895.3**	**12.336**

INDEX PLAN



AQUA

Note
Bearings, distances, area obtained from municipal boundaries, and parcel shapefiles, obtained from http://www.pasda.psu.edu/, in combination with service territory notes provided by DELCORA. The resultant bearings, distances and area do not result from a physical survey on the ground and are approximate and not intended to represent a legal description of property.

NAD 83 (ft)

N

Legend

Requested Territory

SCALE IN FEET

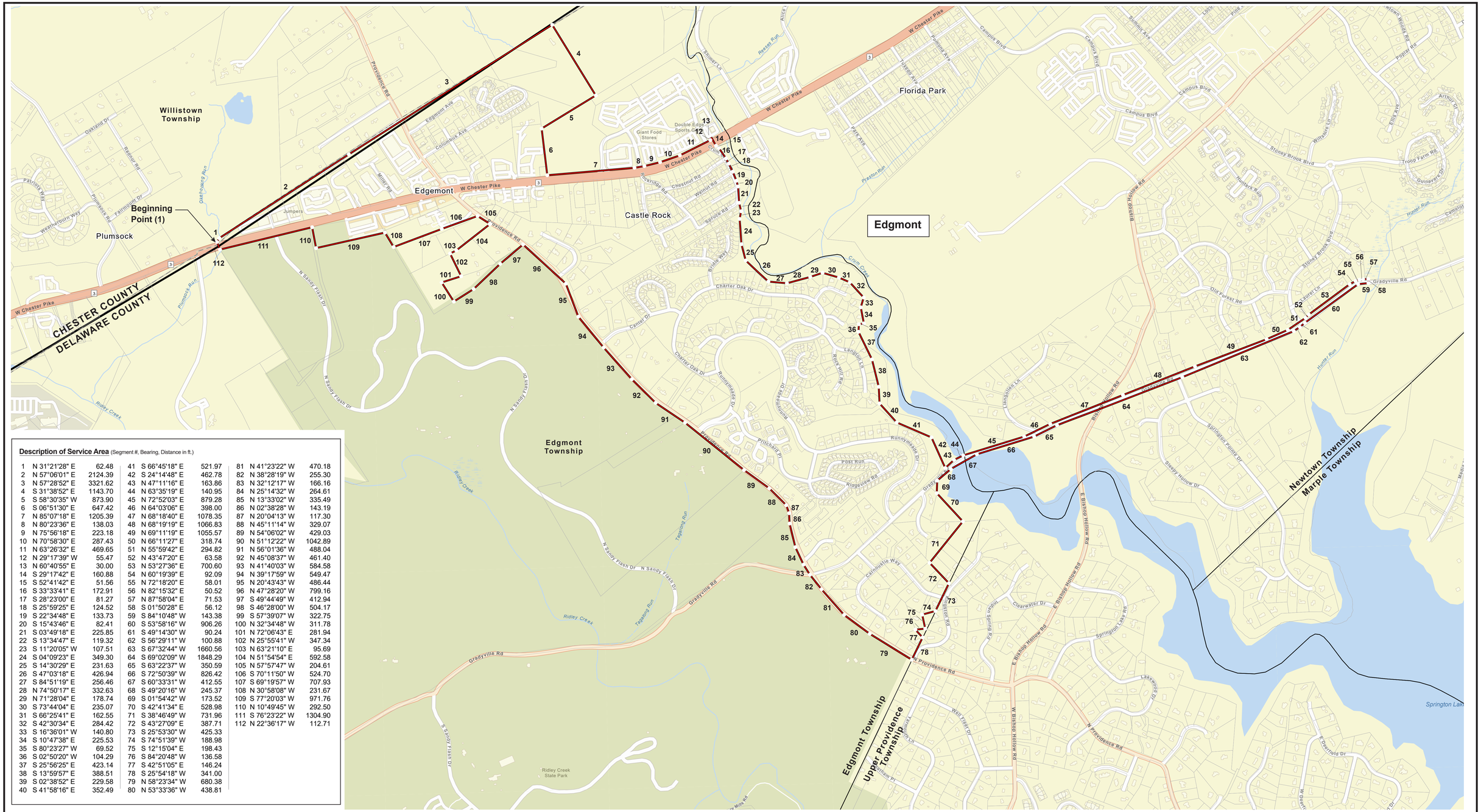
0 2,000 4,000 8,000

REV.	DATE	DESCRIPTION
6.		
5.		
4.		
3.		
2.		
1.	5/8/20	ADJUSTED SERVICE AREA BOUNDARIES AND RESPECTIVE AREAS

EXHIBIT A
Proposed Service Territory
Aqua Pennsylvania, Inc./DELCORA
Delaware and Chester Counties, Pennsylvania

DATE: 1/31/20 | **SCALE: 1" = 4,000 ft.** | INDEX

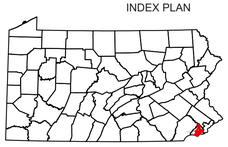
APPLICATION EXHIBIT A4 – EDGEMONT MAP
(PUBLIC VERSION – AMENDED COPY)



Description of Service Area (Segment #, Bearing, Distance in ft.)

1	N 31°21'28" E	62.48	41	S 66°45'18" E	521.97	81	N 41°23'22" W	470.18
2	N 57°06'01" E	2124.39	42	S 24°14'48" E	462.78	82	N 38°28'19" W	255.30
3	N 57°28'52" E	3321.62	43	N 47°11'16" E	163.86	83	N 32°12'17" W	166.16
4	S 31°38'52" E	1143.70	44	N 63°35'19" E	140.95	84	N 25°14'32" W	264.61
5	S 58°30'35" W	873.90	45	N 72°52'03" E	879.28	85	N 13°33'02" W	335.49
6	S 06°51'30" E	647.42	46	N 64°03'06" E	398.00	86	N 02°38'28" W	143.19
7	N 85°07'18" E	1205.39	47	N 68°18'40" E	1078.35	87	N 20°04'13" W	117.30
8	N 80°23'36" E	138.03	48	N 68°19'19" E	1066.83	88	N 45°11'14" W	329.07
9	N 75°56'18" E	223.18	49	N 69°11'19" E	1055.57	89	N 54°06'02" W	429.03
10	N 70°58'30" E	287.43	50	N 66°11'27" E	318.74	90	N 51°12'22" W	1042.89
11	N 63°26'32" E	469.65	51	N 55°59'42" E	294.82	91	N 56°01'36" W	488.04
12	N 29°17'39" W	55.47	52	N 43°47'20" E	63.58	92	N 45°08'37" W	461.40
13	N 60°40'55" E	30.00	53	N 53°27'36" E	700.60	93	N 41°40'03" W	584.58
14	S 29°17'42" E	160.88	54	N 60°19'39" E	92.09	94	N 39°17'59" W	549.47
15	S 52°41'42" E	51.56	55	N 72°18'20" E	58.01	95	N 20°43'43" W	486.44
16	S 33°33'41" E	172.91	56	N 82°15'32" E	50.52	96	N 47°28'20" W	799.16
17	S 28°23'00" E	81.27	57	N 87°58'04" E	71.53	97	S 49°44'49" W	412.94
18	S 25°59'25" E	124.52	58	S 01°50'28" E	56.12	98	S 46°28'00" W	504.17
19	S 22°34'48" E	133.73	59	S 84°10'48" W	143.38	99	S 57°39'07" W	322.75
20	S 15°43'46" E	82.41	60	S 53°58'16" W	906.26	100	N 32°34'48" W	311.78
21	S 03°49'18" E	225.85	61	S 49°14'30" W	90.24	101	N 72°06'43" E	281.94
22	S 13°34'47" E	119.32	62	S 56°29'11" W	100.88	102	N 25°55'41" W	347.34
23	S 11°20'05" W	107.51	63	S 67°32'44" W	1660.56	103	N 63°21'10" E	95.69
24	S 04°09'23" E	349.30	64	S 69°02'09" W	1848.29	104	N 51°54'54" E	592.58
25	S 14°30'29" E	231.63	65	S 63°22'37" W	350.59	105	N 57°57'47" W	204.61
26	S 47°03'18" E	426.94	66	S 72°50'39" W	826.42	106	S 70°11'50" W	524.70
27	S 84°51'19" E	256.46	67	S 60°33'31" W	412.55	107	S 69°19'57" W	707.93
28	N 74°50'17" E	332.63	68	S 49°20'16" W	245.37	108	N 30°58'08" W	231.67
29	N 71°28'04" E	178.74	69	S 01°54'42" W	173.52	109	S 77°20'03" W	971.76
30	S 73°44'04" E	235.07	70	S 42°41'34" E	528.98	110	N 10°49'45" W	292.50
31	S 66°25'41" E	162.55	71	S 38°46'49" W	731.96	111	S 76°23'22" W	1304.90
32	S 42°30'34" E	284.42	72	S 43°27'09" E	387.71	112	N 22°36'17" W	112.71
33	S 16°36'01" W	140.80	73	S 25°53'30" W	425.33			
34	S 10°47'38" E	225.53	74	S 74°51'39" W	188.98			
35	S 80°23'27" W	69.52	75	S 12°15'04" E	198.43			
36	S 02°50'20" W	104.29	76	S 84°20'48" W	136.58			
37	S 25°56'25" E	423.14	77	S 42°51'05" E	146.24			
38	S 13°59'57" E	388.51	78	S 25°54'18" W	341.00			
39	S 02°38'52" E	229.58	79	N 58°23'34" W	680.38			
40	S 41°58'16" E	352.49	80	N 53°33'36" W	438.81			

INDEX PLAN



INDEX PLAN

SERVICE AREA TERRITORY

EDGMONT
SERVICE AREA
25,521,494 square ft.
585.9 Acres
0.915 square miles

(1) Beginning Point: PASPC Coordinates: North: 241,302.60, East: 2,609,784.04'; at a point being the intersection of the northerly R.O.W. of West Chester Pike (Route 3) with Plumsock Run in Willistown Twp, Chester County, PA and proceeding according to the listed bearings and distances noted in the table above.

AQUA

Note
Bearings, distances, area obtained from municipal boundaries, and parcel shapefiles, obtained from http://www.pasda.psu.edu/, in combination with service territory notes provided by DELCORA. The resultant bearings, distances and area do not result from a physical survey on the ground and are approximate and not intended to represent a legal description of property.

NAD 83 (ft)
N

Legend
Requested Territory

SCALE IN FEET
0 300 600 1,200

REV.	DATE	DESCRIPTION
6.		
5.		
4.		
3.		
2.		
1.	5/7/20	ADJUSTED SERVICE AREA BOUNDARY

EXHIBIT A
Proposed Service Territory
Aqua Pennsylvania, Inc./DELCORA
Delaware and Chester Counties, Pennsylvania

DATE: 1/31/20 | SCALE: 1" = 600 ft. | SHEET 3

SEWAGE FACILITIES PLANNING MODULE FOR POCOPSON PRESERVE (CORINNE VILLAGE) REVISED MARCH 15, 2005

SEWAGE FACILITIES PLANNING MODULE

EME No. 1541-00

D. E. P. CODE NO. 1-15946-131-3 KLM

CORINNE VILLAGE

Pocopson Township
Chester County, PA

Prepared for:

CORINNE DEVELOPMENT, LLC
1200 Burning Bush Lane
West Chester, PA 19382

February 2004
Revised: August 2, 2004
Revised: March 15, 2005

Prepared by:

EVANS MILL ENVIRONMENTAL, INC.

PO Box 735 ▸ 101 Fellowship Road
Uwchland, PA 19480-0735
(610) 458-8300 ▸ fax (610) 458-7168 ▸ evansmil@emeinc.com

Revisions

August 2, 2004: The revisions to the Planning Module incorporates the insertion of the following information:

- Insertion of the signed & completed Component 4A by Pocopson Township Planning Commission, Component 4B by the Chester County Planning Commission, and Component 4C by the Chester County Health Department.
- Insertion of the Proof of Publication of the Public Notice and Township letter stating there were no comments from the public notice can be found in the Correspondence Section of this module.
- Site Detail Plans as prepared by Apex Engineering are attached to planning module.

March 15, 2005:

- Revisions in followup to Township review and comments.

TABLE OF CONTENTS

for

CORINNE VILLAGE

Pocopson Township, Chester County, PA

DEP Code # 1-15946-131-3KLM

EVANS MILL ENVIRONMENTAL, INC.
ENVIRONMENTAL ENGINEERS AND CONSULTANTS

EVANS MILL
ENVIRONMENTAL, INC.

SECTION A

TRANSMITTAL LETTER, TOWNSHIP RESOLUTION, & COMPLETENESS CHECKLIST

3800-FM-WSWM0355 Rev. 1/2002

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

TRANSMITTAL LETTER FOR SEWAGE FACILITIES PLANNING MODULE

DEP USE ONLY				
DEP CODE #	APS ID #	CLIENT ID #	SITE ID #	AUTH. ID #

TO: Approving Agency (DEP or delegated local agency)
PADEP - SE Regional Office
2 East Main Street
Norristown, PA 19401-4915

Date _____

Dear Sir

Attached please find a completed Sewage Facilities Planning Module prepared by Evans Mill Environmental, Inc. (Name)
agent _____ (Title) for Corinne Development, LLC / Corinne Village (Name)
a subdivision, commercial ,or industrial facility located in Pocopson Township
Chester _____ (City, Borough, Township) County.

Check one

☒ (i) The Planning Module, as prepared and submitted by the applicant, is approved by the municipality as a proposed ☒ revision ☐ supplement for new land development to its "Official Sewage Facilities Plan", and is ☒ adopted for submission to the Department of Environmental Protection ☐ transmitted to the delegated local agency for approval in accordance with the requirements of Chapter 71 and the Sewage Facilities Act, OR

☐ (ii) The Planning Module will not be approved by the municipality as a proposed revision or supplement for new land development to its "Official Sewage Facilities Plan" because the project described therein is unacceptable for the reason(s) checked below.

Check Boxes

☐ Additional studies are being performed by or on behalf of this municipality which may have an effect on the Planning Module as prepared and submitted by the applicant. Attached hereto is the scope of services to be performed and the time schedule for completion of said studies.

☐ The Planning Module as submitted by the applicant fails to meet limitations imposed by other laws or ordinances, officially adopted comprehensive plans and/or environmental plans (e.g., zoning, land use, Chapter 71). Specific reference or applicable segments of such laws or plans are attached hereto.

☐ Other (attach additional sheet giving specifics)

Municipal Secretary: Indicate below by checking appropriate boxes which components are being transmitted to the Approving Agency.

☐ 2. Individual Onlot Disposal
☒ Adoption Resolution

☒ 3. Sewage Collection/Treatment
☐ 3s Small Flow Treatment Facility

☒ 4.A. Municipal Planning Agency Review
☒ 4.B. County Planning Agency Review
☒ 4.C. Health Department Review

Karen J. Eckard — *Municipal Secretary (print)*
Karen J Eckard — *Signature*
7-20-05 — *Date*

Note: Please remove and recycle the Instructions portion of the Sewage Facilities Planning Module prior to mailing the appropriate completed components and supporting documents to the approving agency.

3800-FM-WSWM0356 2/2002

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

DEP Code No.
1-15946-131-3KLM

RESOLUTION FOR PLAN REVISION FOR NEW LAND DEVELOPMENT

RESOLUTION OF THE (SUPERVISORS) (COMMISSIONERS) (COUNCILMEN) of Pocopson (TOWNSHIP) (BOROUGH) (CITY), Chester COUNTY, PENNSYLVANIA (hereinafter "the municipality").

WHEREAS Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act", as Amended, and the rules and Regulations of the Pennsylvania Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, require the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters of the Commonwealth and/or environmental health hazards from sewage wastes, and to revise said plan whenever it is necessary to determine whether a proposed method of sewage disposal for a new land development conforms to a comprehensive program of pollution control and water quality management, and

WHEREAS Corinne Development, LLC (land developer) has proposed the development of a parcel of land identified as Corinne Village (name of subdivision), and described in the attached Sewage Facilities Planning Module, and proposes that such subdivision be served by: (check all that apply), ☐ sewer tap-ins, ☐ sewer extension, ☒ new treatment facility, ☐ individual onlot systems, ☒ community onlot systems, ☐ spray irrigation, ☐ retaining tanks, ☒ other, (please specify). Drip Irrigation

WHEREAS, Pocopson Township (municipality) finds that the subdivision described in the attached Sewage Facilities Planning Module conforms to applicable sewage related zoning and other sewage related municipal ordinances and plans, and to a comprehensive program of pollution control and water quality management.

NOW, THEREFORE, BE IT RESOLVED that the (Supervisors) (Commissioners) (Councilmen) of the (Township) (Borough) (City) of Pocopson hereby adopt and submit to the Department of Environmental Protection for its approval as a revision to the "Official Sewage Facilities Plan" of the municipality the above referenced Sewage Facilities Planning Module which is attached hereto.

I Karen J Eckard (Signature), Secretary, Pocopson Township Township Board of Supervisors (Borough Council) (City Councilmen), hereby certify that the foregoing is a true copy of the Township (Borough) (City) Resolution # 08, adopted, July 11, 2005.

Municipal Address:

Pocopson Township
P. O. Box 1 (740 Denton Hollow Road)
Pocopson, PA 19366-0001
Telephone (610)793-2151

Seal of Governing Body

3800-FM-WSWM0353 Rev. 6/2002 Checklist

Completeness Checklist

The individual completing the component should use the checklist below to assure that all items are included in the module package. The municipality should confirm that the required items have been included within 10 days of receipt, and if complete, sign and date the checklist.

Sewage Collection and Treatment Facilities

- [x] Name and Address of land development project.
- [x] U.S.G.S. 7.5 minute topographic map with development area plotted.
- [x] Project Narrative.
- [x] Letter from water company (if applicable).
- [x] Alternative Analysis Narrative.
- [ ] Details of chosen financial assurance method.
- [x] Proof of Public Notification (if applicable).
- [ ] Name of existing collection and conveyance facilities.
- [ ] Name and NPDES number of existing treatment facility to serve proposed development.
- [x] Plot plan of project with required information.
- [ ] Total sewage flows to facilities table.
- [ ] Signature of existing collection and/or conveyance Chapter 94 report preparer.
- [ ] Signature of existing treatment facility Chapter 94 report preparer.
- [ ] Letter granting allocation to project (if applicable).
- [x] Signature acknowledging False Swearing Statement.
- [x] Completed Component 4 (Planning Agency Review) for each existing planning agency and health department.
- [x] Information on selected treatment and disposal option.
- [x] Permeability information (if applicable).
- [x] Preliminary hydrogeology (if applicable).
- [ ] Detailed hydrogeology (if applicable).

Municipal Action

- [x] Component 3 (Sewage Collection and Treatment Facilities).
- [x] Component 4 (Planning Agency Comments and Responses).
- [x] Proof of Public Notification.
- [x] Long-term operation and maintenance option selection.
- [ ] Comments, and responses to comments generated by public notification. (NOT APPLICABLE, NO COMMENTS RECEIVED)
- [x] Transmittal Letter

Karen J Eckard

Signature of Municipal Official

7-20-2005

Date submittal determined complete

SECTION B

EVANS MILL ENVIRONMENTAL, INC.

SEWAGE FACILITIES PLANNING MODULE COMPONENT 3

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

Code No.
1-15946-131-3KLM

SEWAGE FACILITIES PLANNING MODULE

Component 3. Sewage Collection and Treatment Facilities

(Return completed module package to appropriate municipality)

DEP USE ONLY				
DEP CODE #	**CLIENT ID #**	**SITE ID #**	**APS ID #**	**AUTH ID #**

This planning module component is used to fulfill the planning requirements of Act 537 for the following types of projects: (1) a subdivision to be served by sewage collection, conveyance or treatment facilities, (2) a tap-in to an existing collection system with flows on a lot of 2 EDU's or more, or (3) the construction of, or modification to, wastewater collection, conveyance or treatment facilities that will require DEP to issue or modify a Clean Streams Law permit. Planning for any project that will require DEP to issue or modify a permit cannot be processed by a delegated agency. Delegated agencies must send their projects to DEP for final planning approval.

This component, along with any other documents specified in the cover letter, must be completed and submitted to the municipality with jurisdiction over the project site for review and approval. All required documentation must be attached for the Sewage Facilities Planning Module to be complete. Refer to the instructions for help in completing this component.

REVIEW FEES: Amendments to the Sewage Facilities Act established fees to be paid by the developer for review of planning modules for land development. These fees may vary depending on the approving agency for the project (DEP or delegated local agency). Please see section R and the instructions for more information on these fees.

NOTE: All projects must complete Sections A through H, and Sections O through R. Complete Sections I, J, K, L, M and/or N if applicable or marked ☒.

A. PROJECT INFORMATION (See Section A of instructions)

1. Project Name CORINNE VILLAGE

2. Brief Project Description PROPOSED 67 SINGLE FAMILY LOT RESIDENTIAL DEVELOPMENT WHICH INCLUDES THREE (3) EXISTING HOUSES

B. CLIENT (MUNICIPALITY) INFORMATION (See Section B of instructions)

Municipality Name	County	City	Boro	Twp
POCOPSON	CHESTER	☐	☐	☒

Municipality Contact Individual - Last Name	First Name	MI	Suffix	Title
ECKARD	KAREN			SEC./TREAS.
Additional Individual Last Name	First Name	MI	Suffix	Title

Municipality Mailing Address Line 1	Mailing Address Line 2
P. O. BOX 1	740 DENTON HOLLOW ROAD

Address Last Line -- City	State	ZIP+4
POCOPSON	PA	19366-0001

Phone + Ext.	FAX (optional)	Email (optional)
(610) 793-2151	(610)793-1944	

C. SITE INFORMATION (See Section C of instructions)

Site (Land Development or Project) Name

CORINNE VILLAGE

Site Location Line 1	Site Location Line 2
NORTH SIDE OF LENAPE-UNIONVILLE ROAD	WEST SIDE OF LOCUST GROVE ROAD

Site Location Last Line -- City	State	ZIP+4	Latitude	Longitude
WEST CHESTER	PA	19382-6959	39.90245	75.67491

Detailed Written Directions to Site FROM WEST CHESTER: TAKE ROUTE 52 SOUTH. AT POCOPSON NURSING HOME, TURN RIGHT ON LENAPE-UNIONVILLE ROAD. SITE IS ON THE NORTHWEST CORNER OF LENAPE-UNIONVILLE ROAD AND LOCUST GROVE ROAD.

Description of Site 123.48 ACRE PARCEL WHICH INCLUDES 3 EXISTING DWELLINGS

Site Contact (Developer/Owner)

Last Name	First Name	MI	Suffix	Phone	Ext.
BRANDOLINI	JAMES			(610)640-9174	

Site Contact Title	Site Contact Firm (if none, leave blank)
DEVELOPER	CORINNE DEVELOPMENT, LLC

FAX	Email
(610)640-9175	

Mailing Address Line 1	Mailing Address Line 2
1200 BURNING BUSH LANE	

Mailing Address Last Line -- City	State	ZIP+4
WEST CHESTER	PA	19380-5888

D. PROJECT CONSULTANT INFORMATION (See Section D of instructions)

Last Name	First Name	MI	Suffix
AHERN	SUSAN		

Title	Consulting Firm Name
PROJECT MANAGER	EVANS MILL ENVIRONMENTAL, INC.

Mailing Address Line 1	Mailing Address Line 2
P. O. BOX 735	101 FELLOWSHIP ROAD

Address Last Line – City	State	ZIP+4	Country
UWCHLAND	PA	19480-0735	USA

Email	Phone	Ext.	FAX
sahern@emeinc.com	(610)458-8300	105	(610)458-7168

E. AVAILABILITY OF DRINKING WATER SUPPLY

The project will be provided with drinking water from the following source: (Check appropriate box)

☐ Individual wells or cisterns.

☐ A proposed public water supply.

☒ An existing public water supply.

If existing public water supply is to be used, provide the name of the water company and attach documentation from the water company stating that it will serve the project.

Name of water company: AQUA PENNSYLVANIA (FORMERLY PHILADELPHIA SUBURBAN WATER CO)

F. PROJECT NARRATIVE (See Section F of instructions)

☒ A narrative has been prepared as described in Section F of the instructions and is attached.

The applicant may choose to include additional information beyond that required by Section F of the instructions.

G. PROPOSED WASTEWATER DISPOSAL FACILITIES (See Section G of instructions)

Check all boxes that apply, and provide information on collection, conveyance and treatment facilities and EDU's served. This information will be used to determine consistency with Chapter 93 (relating to wastewater treatment requirements).

1. **COLLECTION SYSTEM**

a. Check appropriate box concerning collection system

☒ New collection system ☐ Pump Station ☐ Force Main

☐ Grinder pump(s) ☐ Extension to existing collection system ☐ Expansion of existing facility

Clean Streams Law Permit Number _____

b. Answer questions below on collection system

Number of EDU's and proposed connections to be served by collection system. EDU's _____

Connections _____

Name of:

existing collection or conveyance system _____

owner _____

existing interceptor _____

owner _____

2. **WASTEWATER TREATMENT FACILITY**

Check appropriate box and provide requested information concerning the treatment facility

☒ New facility ☐ Existing facility ☐ Upgrade of existing facility ☐ Expansion of existing facility

Name of existing facility _____

NPDES Permit Number for existing facility _____

Clean Streams Law Permit Number _____

Location of discharge point for a new facility. Latitude _____ Longitude _____

3. **SOCIAL ECONOMIC JUSTIFICATION**

Yes	No	
☐	☒	Will the proposed project result in a new or increased discharge into special protection waters as identified in Title 25, Pennsylvania Code, Chapter 93? If yes, attach the Social or Economic Justification (SEJ) required by Section 93.4c.

G. PROPOSED WASTEWATER DISPOSAL FACILITIES (Continued)

4. PLOT PLAN

The following information is to be submitted on a plot plan of the proposed subdivision.

a. Existing and proposed buildings.

b. Lot lines and lot sizes.

c. Adjacent lots.

d. Remainder of tract.

e. Existing and proposed sewerage facilities. Plot location of discharge point, land application field, spray field, COLDS, or LVCOLDS if a new facility is proposed.

f. Show tap-in or extension to the point of connection to existing collection system (if applicable).

g. Existing and proposed water supplies and surface water (wells, springs, ponds, streams, etc.)

h. Existing and proposed rights-of-way.

i. Existing and proposed buildings, streets, roadways, access roads, etc.

j. Any designated recreational or open space area.

k. Wetlands - from National Wetland Inventory Mapping and USGS Hydric Soils Mapping.

l. Flood plains or Floodprone areas, floodways, (Federal Flood Insurance Mapping)

m. Prime Agricultural Land.

n. Any other facilities (pipelines, power lines, etc.)

o. Orientation to north.

p. Locations of all site testing activities (soil profile test pits, slope measurements, permeability test sites, background sampling, etc. (if applicable).

q. Soils types and boundaries when a land based system is proposed.

r. Topographic lines with elevations when a land based system is proposed

5. WETLAND PROTECTION

	YES	NO	
a.	☒	☐	Are there wetlands in the project area? If yes, ensure these areas appear on the plot plan as shown in the mapping or through on-site delineation.
b.	☐	☒	Are there any construction activities (encroachments, or obstructions) proposed in, along, or through the wetlands? If yes, Identify any proposed encroachments on wetlands and identify whether a General Permit or a full encroachment permit will be required. If a full permit is required, address time and cost impacts on the project. Note that wetland encroachments should be avoided where feasible. Also note that a feasible alternative **MUST BE SELECTED** to an identified encroachment on an exceptional value wetland as defined in Chapter 105. Identify any project impacts on streams classified as HQ or EV and address impacts of the permitting requirements of said encroachments on the project.

6. PRIMARY AGRICULTURAL LAND PROTECTION

YES	NO	
☒	☐	Will the project involve the disturbance of prime agricultural lands? If yes, coordinate with local officials to resolve any conflicts with the local prime agricultural land protection program. The project must be consistent with such municipal programs before the sewage facilities planning module package may be submitted to DEP. If no, prime agricultural land protection is not a factor to this project.
☒	☐	Have prime agricultural land protection issues been settled?

7. HISTORIC PRESERVATION ACT

YES	NO	
☒	☐	Sufficient documentation is attached to confirm that this project is consistent with DEP Technical Guidance 012-0700-001 *Implementation of the PA State History Code* (available online at the DEP website at www.dep.state.pa.us, select "subject" then select "technical guidance"). As a minimum this includes copies of the completed Cultural Resources Notice (CRN), a return receipt for its submission to the PHMC and the PHMC review letter.

H. ALTERNATIVE SEWAGE FACILITIES ANALYSIS (See Section H of instructions)

☒ An alternative sewage facilities analysis has been prepared as described in Section H of the attached instructions and is attached to this component.

The applicant may choose to include additional information beyond that required by Section H of the attached instructions.

☐ I. PROTECTION OF RARE, ENDANGERED OR THREATENED SPECIES (See Section I of instructions)

The Pennsylvania Natural Diversity Inventory (PNDI) has identified a protected plant or animal species in the vicinity of the project area. Contact the appropriate protective agency for this specie(s) to determine what options are available to resolve the conflict.

☐ Documentation supporting contact with the appropriate agency having jurisdiction over the rare, threatened, or endangered species of concern and resolution of all potential conflicts is attached.

☐ J. CHAPTER 94 CONSISTENCY DETERMINATION (See Section J of instructions)

Projects that propose the use of existing municipal collection, conveyance or wastewater treatment facilities, or the construction of collection and conveyance facilities to be served by existing municipal wastewater treatment facilities must be consistent with the requirements of Title 25, Chapter 94 (relating to Municipal Wasteload Management). If not previously included in Section F, include a general map showing the path of the sewage to the treatment facility. If more than one municipality or authority will be affected by the project, please obtain the information required in this section for each. Additional sheets may be attached for this purpose.

1. Project Flows _____gpd
2. Total Sewage Flows to Facilities (pathway from point of origin through treatment plant)

   When providing "treatment facilties" sewage flows, use Annual Average Flow for "average" and Maximum Monthly Average Flow for "peak" in all cases. For "peak flows" in "collection" and "conveyance" facilities, indicate whether these flows are "peak hourly flow" or "peak instantaneous flow" and how this figure was derived (i.e., metered, measured, estimated, etc.).

   a. Enter average and peak sewage flows for each proposed or existing facility as designed or permitted.

   b. Enter the average and peak sewage flows for the most restrictive sections of the existing sewage facilities.

   c. Enter the average and peak sewage flows, projected for 5 years (2 years for pump stations) through the most restrictive sections of the existing sewage facilities. Include existing, proposed (this project) and future project (other approved projects) flows.

   To complete the table, refer to the instructions, Section J.

	a. Design and/or Permitted Capacity (gpd)		b. Present Flows (gpd)		c. Projected Flows in 5 years (gpd) (2 years for P.S.)	
	Average	Peak	Average	Peak	Average	Peak
Collection						
Conveyance						
Treatment						

3. Collection and Conveyance Facilities

   The questions below are to be answered by the sewer authority, municipality, or agency responsible for completing the Chapter 94 report for the collection and conveyance facilities. These questions should be answered in coordination with the latest Chapter 94 annual report and the above table. The individual(s) signing below must be legally authorized to make representation for the organization.

	YES	NO	
a.	☐	☐	This project proposes sewer extensions or tap-ins. Will these actions create a hydraulic overload within five years on any existing collection or conveyance facilities that are part of the system?

☐ J. CHAPTER 94 CONSISTENCY DETERMINATION (Continued)

If yes, this sewage facilities planning module will not be accepted for review by the municipality, delegated local agency and/or DEP until all inconsistencies with Chapter 94 are resolved or unless there is an approved Corrective Action Plan (CAP) granting an allocation for this project. A letter granting allocations to this project under the CAP must be attached to the module package.

If no, a representative of the sewer authority, municipality, or agency responsible for completing the Chapter 94 report for the collection and conveyance facilities must sign below to indicate that the collection and conveyance facilities have adequate capacity and are able to provide service to the proposed development in accordance with both §71.53(d)(3) and Chapter 94 requirements and that this proposal will not affect that status.

b. Collection System

Name of Agency, Authority, Municipality _____

Name of Responsible Agent _____

Agent Signature _____

Date _____

c. Conveyance System

Name of Agency, Authority, Municipality _____

Name of Responsible Agent _____

Agent Signature _____

Date _____

4. Treatment Facility

The questions below are to be answered by a representative of the facility permittee in coordination with the information in the table and the latest Chapter 94 report. The individual signing below must be legally authorized to make representation for the organization.

	Yes	No	
a.	☐	☐	This project proposes the use of an existing wastewater treatment plant for the disposal of sewage. Will this action create a hydraulic or organic overload within 5 years at that facility?

If yes, this planning module for sewage facilities will not be reviewed by the municipality, delegated local agency and/or DEP until this inconsistency with Chapter 94 is resolved or unless there is an approved CAP granting an allocation for this project. A letter granting allocations to this project under the CAP must be attached to the planning module.

If no, the treatment facility permittee must sign below to indicate that this facility has adequate treatment capacity and is able to provide wastewater treatment services for the proposed development in accordance with both §71.53(d)(3) and Chapter 94 requirements and that this proposal will not impact that status.

b. Name of Agency, Authority, Municipality _____

Name of Responsible Agent _____

Agent Signature _____

Date _____

☒ K. TREATMENT AND DISPOSAL OPTIONS (See Section K of instructions)

This section is for land development projects that propose construction of wastewater treatment facilities. Please note that, since these projects require permits issued by DEP, these projects may **NOT** receive final planning approval from a delegated local agency. Delegated local agencies must send these projects to DEP for final planning approval.

☒ K.TREATMENT AND DISPOSAL OPTIONS (continued)

Check the appropriate box indicating the selected treatment and disposal option.

☒ 1. Spray irrigation or other land application is proposed, and the information requested in Section K.1. of the planning module instructions are attached.

☐ 2. A discharge to a dry stream channel is proposed, and the information requested in Section K.2. of the planning module instructions are attached.

☐ 3. A discharge to a perennial surface water body is proposed, and the information requested in Section K.3. of the planning module instructions are attached.

☒ L.PERMEABILITY TESTING (See Section L of instructions)

☒ The information required in Section L of the instructions is attached.

☒ M. PRELIMINARY HYDROGEOLOGIC STUDY (See Section M of instructions)

☒ The information required in Section M of the instructions is attached.

☐ N. DETAILED HYDROGEOLOGIC STUDY (See Section N of instructions)

☐ The detailed hydrogeologic information required in Section N. of the instructions is attached.

O. SEWAGE MANAGEMENT (See Section O of instructions)

(1-2 for completion by the developer, 3-4 for completion by the non-municipal facility agent and 5 for completion by the municipality)

	Yes	No	
1.	☒	☐	Connection to, or construction of, a DEP permitted, non-municipal sewage facility or a local agency permitted, community onlot sewage facility is proposed.

If Yes, respond to the following questions, attach the supporting analysis, and an evaluation of the options available to assure long-term proper operation and maintenance of the proposed non-municipal facilities. If No, skip the remainder of Section O.

2. Project Flows 20,213 gpd

(For completion by non-municipal facility agent)

3. Collection and Conveyance Facilities

The questions below are to be answered by the organization/individual responsible for the non-municipal collection and conveyance facilities. The individual(s) signing below must be legally authorized to make representation for the organization.

	Yes	No	
a.	☐	☐	If this project proposes sewer extensions or tap-ins, will these actions create a hydraulic overload on any existing collection or conveyance facilities that are part of the system?

If yes, this sewage facilities planning module will not be accepted for review by the municipality, delegated local agency and/or DEP until this issue is resolved.

If no, a representative of the organization responsible for the collection and conveyance facilities must sign below to indicate that the collection and conveyance facilities have adequate capacity and are able to provide service to the proposed development in accordance with Chapter 71 §71.53(d)(3) and that this proposal will not affect that status.

b. Collection System

Name of Responsible Organization _____

Name of Responsible Agent _____

Agent Signature _____

Date _____

c. Conveyance System

Name of Responsible Organization _____

Name of Responsible Agent _____

Agent Signature _____

Date _____

4. Treatment Facility

The questions below are to be answered by a representative of the facility permittee. The individual signing below must be legally authorized to make representation for the organization.

	Yes	No	
a.	☐	☐	If this project proposes the use of an existing non-municipal wastewater treatment plant for the disposal of sewage, will this action create a hydraulic or organic overload at that facility?

If yes, this planning module for sewage facilities will not be reviewed by the municipality, delegated local agency and/or DEP until this issue is resolved.

If no, the treatment facility permittee must sign below to indicate that this facility has adequate treatment capacity and is able to provide wastewater treatment services for the proposed development in accordance with §71.53(d)(3) and that this proposal will not impact that status.

b. Name of Facility _____

Name of Responsible Agent _____

Agent Signature _____

Date _____

(For completion by the municipality)

5. ☐ The **SELECTED OPTION** necessary to assure long-term proper operation and maintenance of the proposed non-municipal facilities is clearly identified with documentation attached in the planning module package.

P. PUBLIC NOTIFICATION REQUIREMENT (See Section P of Instructions)

This section must be completed to determine if the applicant will be required to publish facts about the project in a newspaper of general circulation to provide a chance for the general public to comment on proposed new land development projects. This notice may be provided by the applicant or the applicant's agent, the municipality or the local agency by publication in a newspaper of general circulation within the municipality affected. Where an applicant or an applicant's agent provides the required notice for publication, the applicant or applicant's agent shall notify the municipality or local agency and the municipality and local agency will be relieved of the obligation to publish. The required content of the publication notice is found in Section P of the instructions.

To complete this section, each of the following questions must be answered with a "yes" or "no". Newspaper publication is required if any of the following are answered "yes".

	Yes	**No**	
1.	☒	☐	Does the project propose the construction of a sewage treatment facility ?
2.	☐	☒	Will the project change the flow at an existing sewage treatment facility by more than 50,000 gallons per day?
3.	☐	☒	Will the project result in a public expenditure for the sewage facilities portion of the project in excess of $100,000?
4.	☐	☒	Will the project lead to a major modification of the existing municipal administrative organizations within the municipal government?
5.	☐	☒	Will the project require the establishment of *new* municipal administrative organizations within the municipal government?
6.	☒	☐	Will the project result in a subdivision of 50 lots or more? (onlot sewage disposal only)

P. PUBLIC NOTIFICATION REQUIREMENT cont'd. (See Section P of instructions)

7. ☐ ☒ Does the project involve a major change in established growth projections?
8. ☐ ☒ Does the project involve a different land use pattern than that established in the municipality's Official Sewage Plan?
9. ☒ ☐ Does the project involve the use of large volume onlot sewage disposal systems (Flow > 10,000 gpd)?
10. ☒ ☐ Does the project require resolution of a conflict between the proposed alternative and consistency requirements contained in §71.21(a)(5)(i), (ii), (iii)?
11. ☐ ☒ Will sewage facilities discharge into high quality or exceptional value waters?

☒ Attached is a copy of:

- ☒ the public notice,
- ☐ all comments received as a result of the notice,
- ☐ the municipal response to these comments.

☒ No comments were received. A copy of the public notice is attached.

Q. FALSE SWEARING STATEMENT (See Section Q of instructions)

I verify that the statements made in this component are true and correct to the best of my knowledge, information and belief. I understand that false statements in this component are made subject to the penalties of 18 PA C.S.A. §4904 relating to unsworn falsification to authorities.

Susan Ahern	
Name (Print)	Signature
Project Manager	2/10/04
Title	Date
P. O. Box 735 Uwchland, PA 19480	6104588300
Address	Telephone Number

R. REVIEW FEE (See Section R of instructions)

The Sewage Facilities Act establishes a fee for the DEP planning module review. DEP will calculate the review fee for the project and invoice the project sponsor **OR** the project sponsor may attach a self-calculated fee payment to the planning module prior to submission of the planning package to DEP. (Since the fee and fee collection procedures may vary if a "delegated local agency" is conducting the review, the project sponsor should contact the "delegated local agency" to determine these details.) Check the appropriate box.

☒ I request DEP calculate the review fee for my project and send me an invoice for the correct amount. I understand DEP's review of my project will not begin until DEP receives the correct review fee from me for the project.

☐ I have calculated the review fee for my project using the formula found below and the review fee guidance in the instructions. I have attached a check or money order in the amount of $_____ payable to "Commonwealth of PA, DEP". Include DEP code number on check. I understand DEP will not begin review of my project unless it receives the fee and determines the fee is correct. If the fee is incorrect, DEP will return my check or money order, send me an invoice for the correct amount. I understand DEP review will NOT begin until I have submitted the correct fee.

☐ I request to be exempt from the DEP planning module review fee because this planning module creates **only** one new lot and is the **only** lot subdivided from a parcel of land as that land existed on December 14, 1995. I realize that subdivision of a second lot from this parcel of land shall disqualify me from this review fee exemption. I am furnishing the following deed reference information in support of my fee exemption.

County Recorder of Deeds for _____ County, Pennsylvania

Deed Volume _____ Book Number _____

Page Number _____ Date Recorded _____

EVANS MILL
ENVIRONMENTAL, INC.

SECTION C

SEWAGE FACILITIES PLANNING MODULE COMPONENT 4

3800-FM-WSWM0362A Rev. 9/2002

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

DEP Code # 1-15946-131

SEWAGE FACILITIES PLANNING MODULE
COMPONENT 4A - MUNICIPAL PLANNING AGENCY REVIEW

Note to Project Sponsor: To expedite the review of your proposal, one copy of your completed planning module package and one copy of this ***Planning Agency Review Component*** should be sent to the existing local municipal planning agency for their comments.

SECTION A. PROJECT NAME (See Section A of instructions)

Project Name
CORINNE VILLAGE / Baily Farm

SECTION B. REVIEW SCHEDULE (See Section B of instructions)

1. Date plan received by municipal planning agency. Feb. 10, 2004
2. Date review completed by agency. Feb. 18, 2004

SECTION C. AGENCY REVIEW (See Section C of instructions)

Yes	No		
■	☐	1.	Is there a municipal comprehensive plan adopted under the Municipalities Planning Code (53 P.S. 10101, *et seq.*)?
■	☐	2.	Is this proposal consistent with the comprehensive plan for land use?
			If no, describe the inconsistencies _____
■	☐	3.	Is this proposal consistent with the use, development, and protection of water resources?
			If no, describe the inconsistencies _____
■	☐	4.	Is this proposal consistent with municipal land use planning relative to Prime Agricultural Land Preservation?
☐	■	5.	Does this project propose encroachments, obstructions, or dams that will affect wetlands?
			If yes, describe impacts _____
☐	■	6.	Will any known historical or archaeological resources be impacted by this project?
			If yes, describe impacts _____
☐	■	7.	Will any known endangered or threatened species of plant or animal be impacted by this project?
			If yes, describe impacts _____
■	☐	8.	Is there a municipal zoning ordinance?
■	☐	9.	Is this proposal consistent with the ordinance?
			If no, describe the inconsistencies _____
☐	■	10.	Does the proposal require a change or variance to an existing comprehensive plan or zoning ordinance?
■	☐	11.	Have all applicable zoning approvals been obtained?
■	☐	12.	Is there a municipal subdivision and land development ordinance?

SECTION C: AGENCY REVIEW (continued)

Yes	No	
■	☐	13. Is this proposal consistent with the ordinance?
		If no, describe the inconsistencies _____
■	☐	14. Is this plan consistent with the municipal Act 537 Official Sewage Facilities Plan?
		If no, describe the inconsistencies _____
☐	■	15. Are there any wastewater disposal needs in the area adjacent to this proposal that should be considered by the municipality?
		If yes, describe _____
☐	■	16. Has a waiver of the sewage facilities planning requirements been requested for the residual tract of this subdivision?
☐	☐	If yes, is the proposed waiver consistent with applicable ordinances?

17. Name, title and signature of planning agency staff member completing this section:

Name: William Waddington

Title: Chairman Planning Commission

Signature: William Waddington Chairman

Date: 4-21-2004

Name of Municipal Planning Agency: Pocopson Township

Address: PO Box 1 Pocopson, PA 19366

Telephone Number: 610-793-2151

SECTION D: ADDITIONAL COMMENTS (See Section D Instructions on Page 4 of this Form)

This Component does not limit municipal planning agencies from making additional comments concerning the relevancy of the proposed plan to other plans or ordinances. If additional comments are desired, attach additional sheets.

The planning agency must complete this Component within 60 days.

This component and any additional comments are to be returned to the project sponsor.

3800-FM-WSWM0362B Rev. 9/2002

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

DEP CODE #1-15946-131-3KLM

SEWAGE FACILITIES PLANNING MODULE
COMPONENT 4B – COUNTY PLANNING AGENCY REVIEW
(or Planning Agency with Areawide Jurisdiction)

Note to Project Sponsor: To expedite the review of your proposal, one copy of your completed planning package and one copy of this ***Planning Agency Review Component*** should be sent to the existing county planning agency or planning agency with areawide jurisdiction for their comments.

SECTION A. PROJECT NAME (See Section A of instructions)

Project Name Corinne Village, Pocopson Township

SECTION B. REVIEW SCHEDULE (See Section B of instructions)

1. Date plan received by county planning agency. February 26, 2004
2. Date plan received by planning agency with areawide jurisdiction _____
   Agency name _____
3. Date review completed by agency April 19, 2004

SECTION C. AGENCY REVIEW (See Section C of instructions)

Yes	No		
X		1.	Is there a county or areawide comprehensive plan adopted under the Municipalities Planning Code (53 P.S. 10101 *et seq.*)?
X		2.	Is this proposal consistent with the comprehensive plan for land use?
X*		3.	Does this proposal meet the goals and objectives of the plan?
			If no, describe goals and objectives that are not met *The 1996 Chester County Comprehensive Plan, **Landscapes**, designates the area of the proposed subdivision as a **Rural Landscape**. The **Rural Landscape** is characterized by farms, farm-related businesses, villages and scattered housing sites. Development proposed within the **Rural Landscape** is encouraged to occur in Rural Centers in order to preserve agriculture and the rural character typified within this landscape. The location of this subdivision is consistent with the **Rural Landscape** as shown on the Livable Landscapes Map as last revised on October 14, 2003 because a significant amount of the tract is designated as open space.An area near Lenape-Unionville Road is designated as a **Natural Landscape Overlay** area. **Natural Landscapes** are typified by woodlands, stream corridors, steep hillsides, ridge tops, wetlands and marshes. These resources are permanent and essential elements of the physical environment, and are the foundation of all landscapes. **Landscapes** encourages the preservation of these sensitive natural areas and discourages development from occurring in natural areas. The location of this subdivision is consistent with the **Natural Landscape** as shown on the Livable Landscapes Map as last revised on October 14, 2003 because this **Natural Landscape Overlay** area is not disturbed.*
X		4.	Is this proposal consistent with the use, development, and protection of water resources?
			If no, describe inconsistency _____
X		5.	Is this proposal consistent with the county or areawide comprehensive land use planning relative to Prime Agricultural Land Preservation?
			If no, describe inconsistencies: _____
	X*	6.	Does this project propose encroachments, obstructions, or dams that will affect wetlands?
			If yes, describe impact *The site contains delineated wetlands. Although it does not appear that any proposed development activity will encroach into the delineated wetland areas, the applicant should be aware that placement of fill in wetlands is regulated by the Corps of Engineers in accordance with Section 404 of the Clean Water Act (1977) and the Department of Environmental Protection under Chapter 105 Rules and Regulations for the Bureau of Dams and Waterway Management.
		7.	Will any known historical or archeological resources be impacted by this project? **Not Known**
			If yes, describe impacts _____
	X	8.	Will any known endangered or threatened species of plant or animal be impacted by the development project?
	X	9.	Is there a county or areawide zoning ordinance?
		10.	Does this proposal meet the zoning requirements of the ordinance? N/A
			If no, describe inconsistencies _____

SECTION C. AGENCY REVIEW (continued)

Yes	No		
		11.	Have all applicable zoning approvals been obtained? **N/A**
	X	12.	Is there a county or areawide subdivision and land development ordinance?
		13.	Does this proposal meet the requirements of the ordinance? **N/A**
			If no, describe which requirements are not met _____
X		14.	Is this proposal consistent with the municipal Act 537 Official Sewage Facilities Plan?
			If no, describe inconsistency _____
		15.	Are there any wastewater disposal needs in the area adjacent to this proposal that should be considered by the municipality? **Not known**
			If yes, describe _____
		16.	Has a waiver of the sewage facilities planning requirements been requested for the residual tract of this subdivision?
			If yes, is the proposed waiver consistent with applicable ordinances. **Not Known**
			If no, describe inconsistencies _____
	X	17.	Does the county have a stormwater management plan as required by the Stormwater Management Act?
			If yes, will this project plan require the implementation of storm water management measures?
		18.	Name, Title and signature of person completing this section:

Name: William H. Fulton, AICP
Title: Executive Director Signature:
Date: April 19, 2004
Name of County or Areawide Planning Agency: Chester County Planning Commission
Address: Government Services Center, Suite 270
601 Westtown Road
P.O. Box 2747
West Chester, PA 19380-0990
Telephone Number: (610) 344-6285

SECTION D. ADDITIONAL COMMENTS (See Section D of instructions)

The county planning agency must complete this Component within 60 days.
This Component and any additional comments are to be returned to the applicant.

cc: Clinton Cleaver, PaDEP
Ralph DeFazio, Chester County Health Department
James Brandolini, Corinne Development, LLC
Susan Ahern, Evans Mill Environmental, Inc.
Karen Eckard, Pocopson Township

R. REVIEW FEE (continued)

Formula:

1. For a new collection system (with or without a Clean Streams Law Permit), a collection system extension, or individual tap-ins to an existing collection system use this formula.

   #_____ Lots (or EDUs) X $50.00 = $ _____

   The fee is based upon:

   - The number of lots created or number of EDUs whichever is higher.
   - For community sewer system projects, one EDU is equal to a sewage flow of 400 gallons per day.

2. For a surface or subsurface discharge system, use the appropriate one of these formulae.

   A. A new surface discharge greater than 2000 gpd will use a flat fee:

   $ 1,500 per submittal (non-municipal)
   $ 500 per submittal (municipal)

   B. An increase in an existing surface discharge will use:

   #_____ Lots (or EDUs) X $35.00 = $ _____

   to a maximum of $ 1,500 per submittal (non-municipal) or $ 500 per submittal (municipal)

   The fee is based upon:

   - The number of lots created or number of EDUs whichever is higher.
   - For community sewage system projects one EDU is equal to a sewage flow of 400 gallons per day.
   - For non-single family residential projects, EDUs are calculated using projected population figures

   C. A sub-surface discharge system that requires a permit under The Clean Streams Law will use a flat fee:

   $ 1,500 per submittal (non-municipal)
   $ 500 per submittal (municipal)

3800-FM-WSWM0382C Rev. 3/2001

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

DEP Code # 1-15946-131-3

SEWAGE FACILITIES PLANNING MODULE
COMPONENT 4C - COUNTY OR JOINT HEALTH DEPARTMENT REVIEW

Note to Project Sponsor: To expedite the review of your proposal, one copy of your completed planning module package and one copy of this *Planning Agency Review Component* should be sent to the county or joint county health department for their comments.

SECTION A. PROJECT NAME (See Section A of instructions)

Project Name
CORINNE VILLAGE

SECTION B. REVIEW SCHEDULE (See Section B of instructions)

1. Date plan received by county or joint-county health department. [redacted] 2-26-04
   Agency name CHESTER COUNTY HEALTH DEPT.
2. Date review completed by agency 3-17-04

SECTION C. AGENCY REVIEW (See Section C of instructions)

Yes	No		
☒	☐	1.	Is the proposed plan consistent with the municipality's Official Sewage Facilities Plan? If no, what are the inconsistencies? YES
☐	☒	2.	Are there any waste water disposal needs in the area adjacent to the new land development that should be considered by the municipality? If yes, describe NONE KNOWN
☐	☒	3.	Is there any known groundwater degradation in the area of the proposed subdivision? If yes, describe NONE KNOWN
☒	☐	4.	The county or joint county health department recommendation concerning this proposed plan is as follows: APPROVAL AFTER MEETING TOWNSHIP REQUIREMENT

5. Name, title and signature of person completing this section:

Name: BRUCE FOCHT
Title: ENVIRONMENTAL Health Specalist
Signature: Bruce Focht
Date: 3-17-04
Name of County Health Department: Chester County Health Department
Address: 601 - WESTTOWN RD West Chester PA 19382-4543
Telephone Number: 610 - 344-6693

SECTION D. ADDITIONAL COMMENTS (See Section D of instructions)

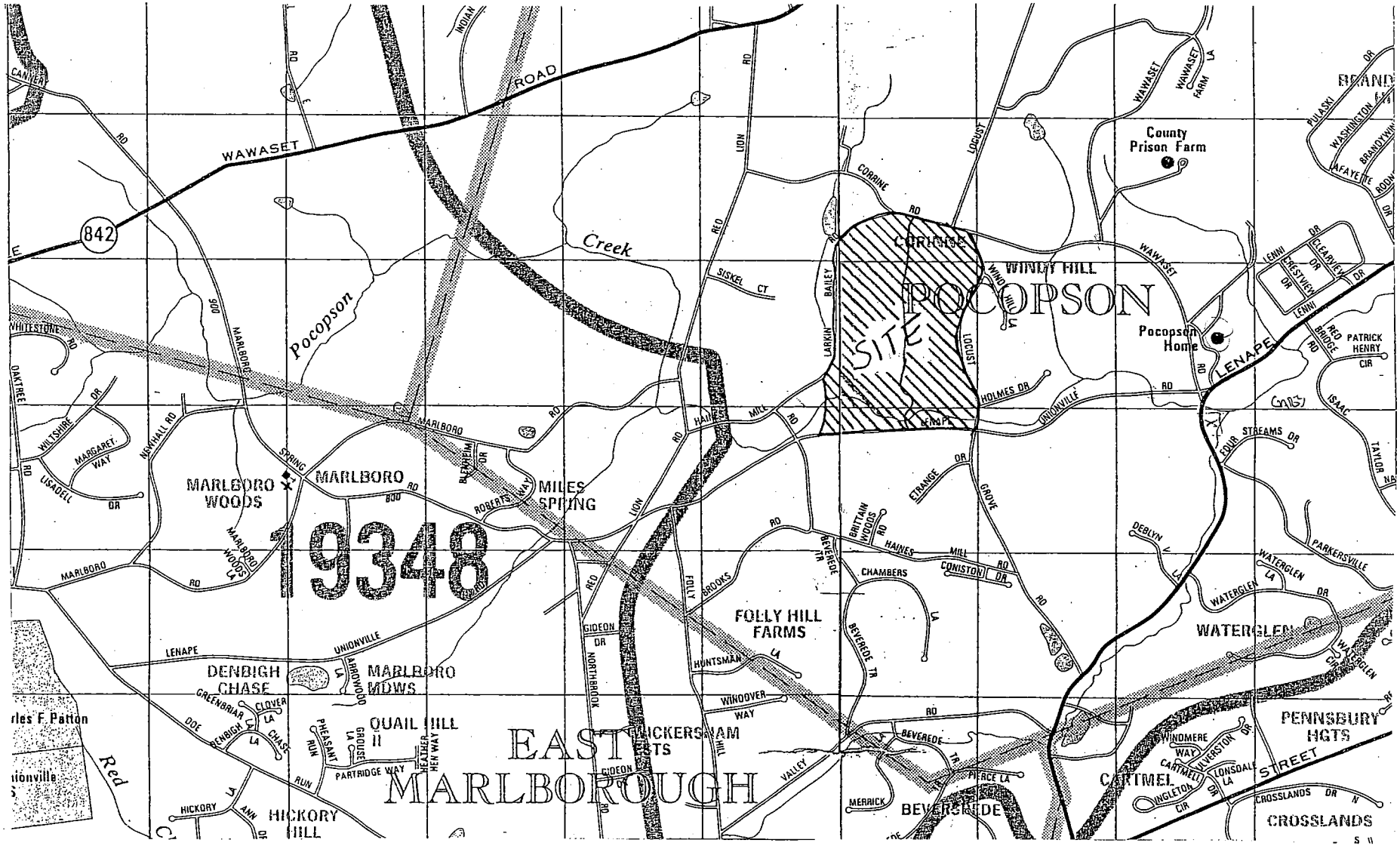
This Component does not limit county planning agencies from making additional comments concerning the relevancy of the proposed plan to other plans or ordinances. If additional comments are needed, attach additional sheets.

The county planning agency must complete this Component within 60 days.
This Component and any additional comments are to be returned to the applicant.

EVANS MILL
ENVIRONMENTAL, INC.

SECTION D

SITE LOCATION & USGS MAPS



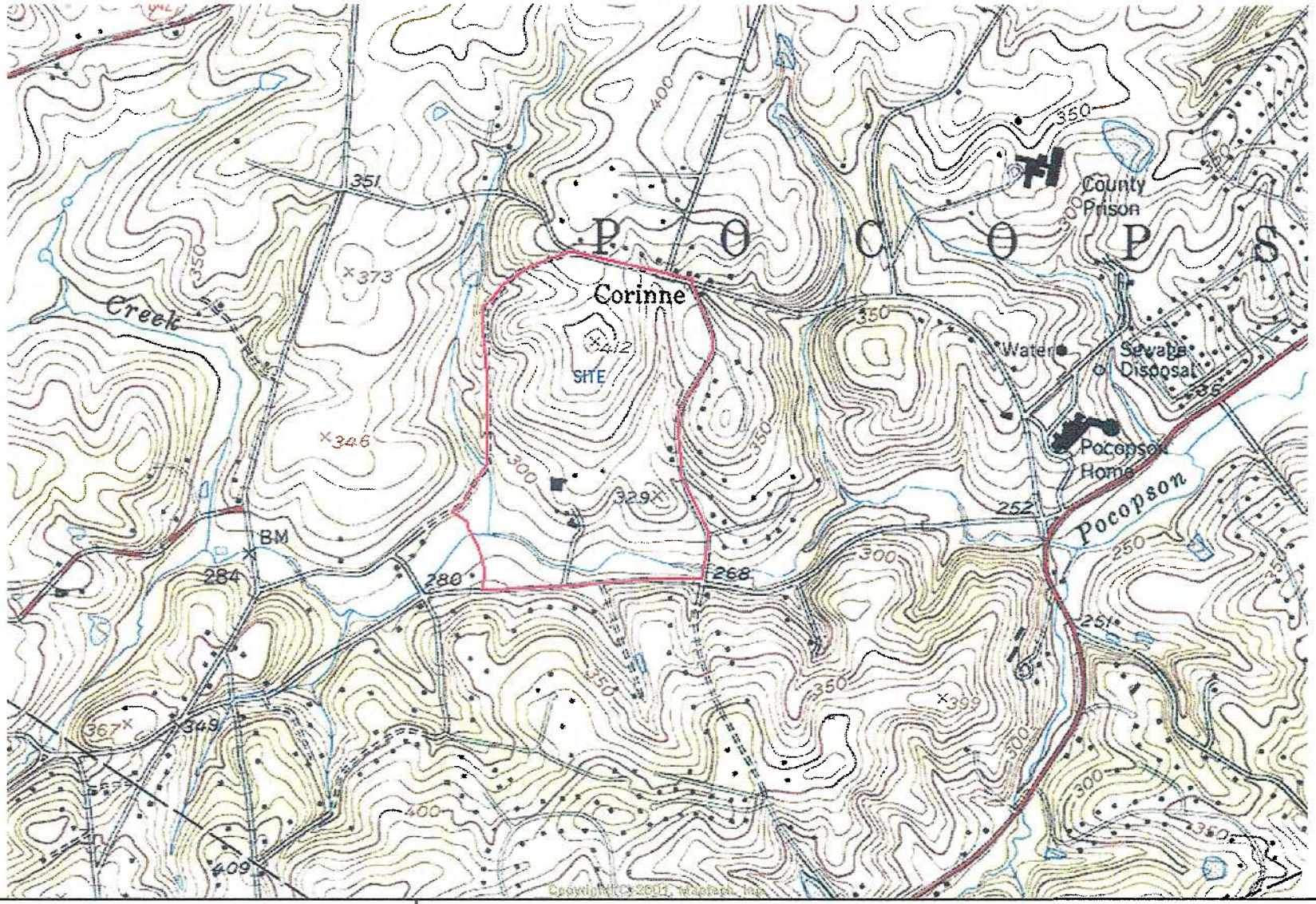
EVANS MILL ENVIRONMENTAL, INC.
P.O. Box 735
101 Fellowship Road
Uwchland, PA 19480
(610) 458-8300
(610) 458-7168 FAX

BAILEY FARM

Lenape-Unionville & Locust Grove Roads; Pocopson Township; Chester County, PA

SITE LOCATION MAP

Scale: 1" = 2,000'	Date: October 30, 2003	By: Aml	EME No: 1541-00



EVANS MILL ENVIRONMENTAL, INC.
P.O. Box 735
101 Fellowship Road
Uwchland, PA 19480
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(610) 458-7168 FAX

FIGURE 2 - BAILY FARM

Lenape-Unionville & Locust Grove Roads; Pocopson Township; Chester County, PA

U. S. G. S. QUADRANGLE - UNIONVILLE, PA

Scale: 1" = 2,000'	Date: October 30, 2003	By: Aml	EME No: 1541-00

EVANS MILL ENVIRONMENTAL, INC.

SECTION E

PROJECT NARRATIVE, ALTERNATIVE ANALYSIS, & PROPOSED WASTEWATER DISPOSAL FACILITIES

EVANS MILL ENVIRONMENTAL, INC.

Corinne Village Subdivision
Pocopson Township, Chester County, PA
D.E.P. Code No. 1-15946-131-3KLM

Component 3, Section F. Project Narrative

(Numbering corresponds to "Instructions for Completing Component 3")

1. The applicant, Corinne Development, LLC, is proposing the development of Corinne Village, a single family residential subdivision located on the northwest corner of Lenape-Unionville Road and Locust Grove Road in Pocopson Township, Chester County, Pennsylvania. The project proposes the construction of 64 new single-family homes and 3 existing dwellings.

2. The number of equivalent dwelling units (EDU's) for this project is estimated to be 51 and was calculated as follows:

3 existing dwellings (@262.5 gal/house)	787.5 gpd
64 new proposed lots (@262.5 gal/house)	16,800.0 gpd
10 additional lots as per Township (@262.5 gal/house	2,625.0 gpd
Total Anticipated Daily Sewage Flow:	20,212.5 gpd
Estimated EDU's (400 gpd per EDU):	51 EDU's

3. The proposed wastewater system will consist of an on-site treatment and storage facility followed by land application of treated wastewater. The system will be permitted by the DEP. A gravity sewer will collect raw wastewater and convey it to the treatment facility. A plan of the collection system is included on the project site plans by Apex Engineering.

   The determination and location of the disposal area was based on information documented in the Soil Investigation Report. The disposal capacity of the disposal area was determined based on data provided in the Soil Investigation Report and the Hydrogeological Assessment Report which is further discussed in Section G of this Planning Module.

4. The daily wastewater flow for the project is estimated to be 20,213 gpd assuming the new residential units will generate 262.5 gpd per house. This flow is consistent with the Township Act 537 planning flows for such systems.

5. Both the treatment and disposal systems will be located on the subject property. The disposal area is located in the open space area in the central portion of the site along the highpoint of the project site.

6. Total acreage of the project is 123.48 acres.

7. There are no adjacent parcels under the same ownership. Approximately 69.08 acres in the western portion of the site will be retained by the property owner for continued agricultural use.

8. No response required.

EVANS MILL ENVIRONMENTAL, INC.

Corinne Village Subdivision
Pocopson Township, Chester County, PA
D.E.P. Code No. 1-15946-131-3KLM

Component 3, Section I. Alternative Analysis

(Numbering corresponds to "Instructions for Completing Component 3)"

1. The chosen long-term disposal method will be a community on-lot drip irrigation sewage disposal system that will be permitted by DEP. The number of equivalent dwelling units (EDU) for this project is estimated to be 51, which includes 64 proposed lots, 3 existing houses on the site, and the provision for 10 future connections as requested by the Township. The total number of EDU's was calculated assuming the residential units will generate 262.5 gpd. See Section F. for additional information regarding the calculation of the project wastewater flow.

2. The project is located in a residential/agricultural land use area. The areas surrounding the project consist of large lot, single-family properties which are served by individual on-lot sewage disposal systems.

3. There are no known areas near the subject site that are in need of improvement due to high rates of on-lot malfunctioning systems.

4. Pocopson Township's Act 537 Plan does provide for the proposed use of community sewage disposal system for this project.

5. There will be an agreement between Pocopson Township, the Aqua Pennsylvania, Inc., and the project developer, which will define the duties regarding the ownership and maintenance of the disposal system based on the Clean Streams Law, and regulations promulgated thereunder. Aqua Pennsyvania, Inc. will be the owner and operator of the system. Pocopson Township shall have the right to oversee the operation and maintenance of the system, and shall at all times, have access to the sewage system for inspection or to assist with, evaluate, or remedy any emergency situation occurring in or to the sewage disposal system.

6. Due to the nature of the development (ie: the small lot sizes) individual on-lot disposal systems are not feasible. Spray irrigation was considered a technically feasible alternative but was eliminated due to space requirements stemming from increased buffer distances for the spray field over what is required for drip irrigation. In addition, the topographic position of the site is very susceptible to windy conditions which would require further buffering considerations if spray irrigation was used. In light of the overall site suitability for drip irrigation, the use of spray irrigation is not considered to be the most feasible alternative. A stream discharge was not considered in light of the more environmentally sensitive land-based systems. There is not public sewer available to the subject site.

7. The use of land application was the chosen method of wastewater disposal. The soils and geology at the site will support the proposed method of sewage disposal and the space requirements of the proposed sewage disposal will be consistent with the open space design of the community. The proposed system is consistent with the requirements of the Pocopson Township's Act 537 Plan and the Stipulation Agreement executed with the Township for the project site. The treatment and disposal system will be designed to accommodate the onsite flows plus an additional ten (10) units as requested by the Township for possible future connections. As per the Stipulation Agreement, the sewage treatment system will also be designed to allow for future expansion.

8. Aqua Pennsylvania, Inc. (formerly Philadelphia Suburban Water Company) will be the owner and operator of the facility. The operation and maintenance of the proposed wastewater treatment and disposal facility was discussed in item 5 above.

9. No response required.

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Corinne Village Subdivision
Pocopson Township, Chester County, PA
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Component 3, Section G. Proposed Wastewater Disposal Facilities

(Numbering corresponds to "Instructions for Completing Component 3)"

1. Collection System

The proposed sixty-four (64) lots will be connected to a gravity sewer collection system that will collect and convey wastewater to the treatment plant location. The collection system is shown on the site development plans prepared by Apex.

2. Wastewater Treatment Facility

The proposed treatment facility will consist of a wastewater treatment pond followed by pressure sand filters. The preliminary design calculations for the wastewater treatment and storage ponds are included in this section of the Planning Module report. The system design is based upon the flow of 20,213 gpd.

The treated effluent will be conveyed to the drip irrigation disposal field as shown on the site plan. The drip irrigation system equipment is anticipated to be American Manufacturing Company or approved equal. The design hydraulic loading to the drip field will not exceed 6,000 gpd/acre. The extent of drip field depicted on the Sewage Facilities Plan included with this module shows approximately 3.9 acres of disposal area, which is more than adequate to meet the maximum hydraulic loading rate of 6,000 gpd.

Based upon the information provided in the Soil Report, this loading rate to the disposal field is only 77% of the accepted soil loading rate (7,841 gpd/acre) as per PADEP Surface Applied Loading Rate for deep, well-drained soils, and is only 46% of the maximum loading rate recommended by the American Manufacturing drip guidance.

The maximum loading rate of 6,000 gpd/acre is within the acceptable limits documented in Hydrogeologic Report. The hydrogeologic report documents that groundwater mounding will not be a concern, and that the distance between the projected mound height and the infiltration depth will be much greater than the minimum four (4) foot separation required by PADEP. As documented, nitrogen from the disposal field will disperse to an onsite stream, or to an offsite stream on to deed restricted lands where the plume will stop.

3. The project does not propose any wastewater discharge to high quality waters.

4. See attached plot plans.

5. The extent of wetlands is shown on the attached site plan. There are no proposed impacts to the wetlands or stream channel areas.

6. The site does contain prime agricultural soils. Approximately 69 acres of the site will be retained by the property owner for continued agricultural use. The proposed project is consistent with the Township ordinances as they relate to the protection of prime agricultural lands.

7. The Cultural Resource Notification was submitted to the PHMC. The notice and the PHMC response is included in this Planning Module Report.

CORINNE VILLAGE
DRIP FIELD DESIGN
3/11/2005

Hydraulic Unit Sizing

Flow,GPD	20,213	Unit Design Flow, gpm	56	Hydraulic Unit	ASD 60	Linear Feet/Zone	5,400			
Area Loading	6,800	Minimum Drip Area, acres	2.97	No. of Zones	12	at 2' spacing	Maximum Linear Ft	64,800	Min. Linear Loading	0.312 gpd/lf
	0.34 gal/lf									
				No. of Zones	16	at 1.5' spacing	Maximum Linear Ft	86,400	Min. Linear Loading	0.234 gpd/lf
Available Acreage	3.7	3.89 acre gross								
Losses, %	20									

No. of Zones 12 at 2' spacing
No. of Zones 16 at 1.5' spacing

DRIP FIELD DESIGN

Total Area:	161,119 sf
	3.70 acres
Area Loading	5,453 gal/acre
Total Tubing:	64,800 lf
Zones:	12 Zones
LF/Zone	5,400 lf
Tubing Loading	0.312 gal/lf

TABLE 1
LOADING RATE SUMMARY
Corinne Development, LLC
WASTEWATER APPLICATION SCHEDULE
3/16/2005

Project:	Corinne Development, LLC	
Disposal System:	Drip	
Disposal Field Size:	3.70 acres	**No "Nitrogen" Uptake**
Flowrate:	20,213	
Influent BOD_5:	300 mg/l	
Influent Nitrogen (N_o):	45 mg/l	

Lagoon Volume's

	Sludge Volume (gal)	Free Board Volume (gal)	Effective Volume (gal)	Total Volume (gal)	Total Cum. Storage (gal)	Top of Berm Area, SF
Treatment Lagoon	75,291	256,442	629,669	961,402	629,669	18,655
Storage Lagoon	75,291	256,442	629,669	961,402	629,669	18,655
Totals	*150,582*	*512,884*	*1,259,338*	*1,922,804*		

Net Wastewater Generation	**7,377,745**	**gal/yr**
Net Rainfall Capture	**114,136**	**gal/yr**
Total Disposal Requirements	**7,491,881**	**gal/yr**
Total Disposal Allowance	**7,491,881**	**gal/yr**

Permeability tests

K-1	1.12	ft/day	
K-2	0.15	ft/day	
K-4	0.084	ft/day	
K-5	0.042	ft/day	
K-6	0.112	ft/day	
Average	0.302	ft/day	3.62 in/day

Evans Mill Environmental, Inc.
101 Fellowship Road
Uwchland, PA 19480
610-458-8300

Project: Corinne Development, LLC
By: RDD Date: 3/16/2005
CK By: Date:

Application Rates Comparison

Disposal System: Drip
Disposal Field Size: 3.70 acres

	Hydraulic Loading $L_{w(p)}$ in/month	*EPA* Nitrogen Loading $L_{w(n)}$ in/month	*CRREL* Nitrogen Loading $L_{w(n)}$ in/month	Spray Schedule Loading $L_{w(s)}$ in/month	MINIMUM* Design Loading $L_{w(d)}$ in/month	Monthly* Loading in/month
January	8.39	1.40	1.45	N/A	1.40	6.89
February	7.43	3.51	3.71	N/A	3.51	6.26
March	7.44	6.22	7.11	N/A	6.22	7.11
April	12.14	8.09	10.54	N/A	8.09	5.74
May	12.89	7.90	12.08	N/A	7.90	5.65
June	13.44	7.45	13.72	N/A	7.45	5.64
July	13.34	7.67	16.02	N/A	7.67	5.75
August	12.56	8.06	16.01	N/A	8.06	5.93
September	11.60	8.35	13.96	N/A	8.35	5.86
October	11.22	4.36	5.99	N/A	4.36	6.24
November	9.14	3.03	3.63	N/A	3.03	6.43
December	7.60	1.78	1.91	N/A	1.78	7.07
Year Total	127.19	67.80	106.13	N/A	67.80	74.56

	Hydraulic Loading $L_{w(p)}$ gal/month	*EPA* Nitrogen Loading $L_{w(n)}$ gal/month	*CRREL* Nitrogen Loading $L_{w(n)}$ gal/month	Spray Schedule Loading $L_{w(s)}$ gal/month	Design* Loading $L_{w(d)}$ gal/month	Monthly* Influent gal/month
January	842,844	140,190	145,381	N/A	692,419	692,419
February	746,824	352,704	372,615	N/A	628,757	628,757
March	747,403	625,157	714,446	N/A	714,513	714,513
April	1,219,511	812,348	1,058,843	N/A	576,594	576,594
May	1,294,744	793,180	1,213,870	N/A	567,595	567,595
June	1,350,025	747,994	1,378,010	N/A	566,594	566,594
July	1,340,203	770,765	1,609,884	N/A	577,284	577,284
August	1,262,159	809,247	1,608,640	N/A	595,351	595,351
September	1,165,695	838,883	1,402,760	N/A	589,052	589,052
October	1,127,431	437,772	601,524	N/A	626,540	626,540
November	917,999	304,157	364,708	N/A	646,391	646,391
December	763,477	179,324	191,970		710,792	710,792
Year Total	12,778,315	6,811,722	10,662,652	N/A	7,491,881	7,491,881

***Diposal Field Based on Hydraulic Loading Only**

Note: The CRREL Nitrogen Loading is not currently considered in the decision to select the Design Loading.

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610-458-8300

Project: Corinne Development, LLC
By: RDD Date: 3/16/2005
Rev By: _____ Date: _____

Basis

Disposal System	Drip	
Flow	20,213	gpd
Influent BOD_5	300	mg/l
Influent Nitrogen (N_o)	45	mg/l
Treatment Lagoon Effective Volume	629,669	gals

Storage Volume Requirements

Where:
- Flow/EDU = Design flowrate used for calculations
- Daily Influent = Flow/EDU * No of EDU's
- Monthly Influent = Design flow rate (gpd) * No. of days in month
- Monthly Rainfall = Net rainfall on lagoon area (from Rainfall Worksheet)
- Monthly Irrigation = Monthly total (from Application Worksheet)
- Storage Requirements = (Previous Months Requirement + (Monthly Influent + Monthly Rainfall - Monthly Irrigation)
- Cumulative Volume = Storage Requirements (gal) + Cumulative Volume (gal)
- Storage Time (days) = Cumulative Volume (gal) / Influent flow rate (gpd)

Nitrogen Concentration in Lagoon Effluent

$N_t = N_o * e^{(-0.0075t)}$ *EPA Process Design Manual for Land Treatement of Municipal Wastewater EPA 625/1-81-013 pg 4-26*

N_t = nitrogen concentration in lagoon effluent, (mg/l)
t = detention time, days (from Storage Volume Requirements)

BOD Concentration in Lagoon Effluent

$BOD_t = (\text{Influent } BOD_5)*(1+(k_{cT}*t))^{-1}$ *Natural systems for Wastewater Treatment, Manual of Practice FD-16, p. 168*

$k_{cT} = k_{c20}*\Theta^{(T-20)}$

where

k_{c20} = complete mix 1st order reaction rate constant, 0.28 $days^{-1}$ at 20°C
T = Lagoon Temperature, °C
Θ = 1.036
Influent BOD_5, mg/l = 300
t = treatment time, days

Month	No. days	Daily Influent (gpd)	Monthly Influent (gal)	Monthly Rainfall (gal)	Monthly Design Loading(gal)	Storage Requirement	Cumulative Volume	Storage Time (days)	Treatment Time (days)	Detention Time (days)	EPA N_t mg/l	Lagoon Temp, T °C	*CRREL* Nitrogen Removal Rate Constant k_T	N_e mg/l	*Partial-Mix Aerated Pond* BOD Reaction Rate Constant k_{cT}	BOD_t mg/l
November	30	20,213	606,390	40,001	646,391	0	0	0	31.2	31	35.62	7.29	3.94E-03	31.66	0.18	45.70
December	31	20,213	626,603	84,189	710,792	0	0	0	31.2	31	35.62	1.23	3.12E-03	34.05	0.14	54.64
January	31	20,213	626,603	65,816	692,419	0	0	0	31.2	31	35.62	-0.81	2.89E-03	34.77	0.13	57.94
February	28	20,213	565,964	62,793	628,757	0	0	0	31.2	31	35.62	0.40	3.02E-03	34.35	0.14	55.96
March	31	20,213	626,603	87,910	714,513	0	0	0	31.2	31	35.62	4.92	3.59E-03	32.64	0.16	49.05
April	30	20,213	606,390	-29,796	576,594	0	0	0	31.2	31	35.62	10.87	4.51E-03	30.07	0.20	41.01
May	30	20,213	606,390	-38,795	567,595	0	0	0	31.2	31	35.62	16.38	5.57E-03	27.36	0.25	34.59
June	31	20,213	626,603	-60,009	566,594	0	0	0	31.2	31	35.62	21.23	6.71E-03	24.72	0.29	29.67
July	31	20,213	626,603	-49,319	577,284	0	0	0	31.2	31	35.62	23.87	7.42E-03	23.19	0.32	27.26
August	31	20,213	626,603	-31,252	595,351	0	0	0	31.2	31	35.62	22.88	7.15E-03	23.77	0.31	28.15
September	30	20,213	606,390	-17,338	589,052	0	0	0	31.2	31	35.62	18.86	6.13E-03	26.03	0.27	31.99
October	31	20,213	626,603	-63	626,540	0	0	0	31.2	31	35.62	12.85	4.87E-03	29.13	0.22	38.59
Annual total	*365*	*242,556*	*7,377,745*	*114,136*	*7,491,881*											
										Average	*35.62*	*11.66*	*4.91E-03*	*29.31*	*0.22*	*41.21*

Nitrogen Concentration in Lagoon Effluent - after S.C. Reed, CRREL, June 1984

$Ne = N_o e^{-k_T[t+60.6(pH-6.6)]}$

where

N_e = Nitrogen concentration in effluent, mg/l
N_o = Nitrogen concentration in influent, mg/l
$k_T = k_{20}(\Theta)^{(T-20)}$
$T = (0.5AT_a + QT_i)/(0.5A + Q)$
$pH = 7.3e^{0.0003ALK}$

assumptions

T_i	22	influent wastewater temperature, °C
Q	77	influent flowrate, m3/d
ALK	70	expected influent alkalinity, mg/l
k_{20}	0.0064	rate constant @ 20°C
Θ	1.039	

calculations

pH= 7.56

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Project: Corinne Development, LLC
By: RDD Date:
Rev: Date:

Hydraulic Loading Rate

$Lw(p) = ET - Pr + Pw$

EPA Process Design Manual for Land Treatment of Municipal Wastewater EPA 625/1-81-013 pg. 4-28

where:

Lw(p) = Wastewater Hydraulic Loading (in)
ET = Evapotranspiration rate, based on EPA Information
Pr = Precipitation rate, based on NOAA Weather Information
Pw = Percolation Rate, in/day *number of operating days per month* .10
Percolation Rate, based Hydrogeologic Analysis performed by Evans Mills [1]

	Application days per month	ET (1) (in/mo.)	Pr (2) (in/mo.)	Net ET (3)=(1)-(2) (in/mo.)	Pw (4) (in/mo.)	Lw (p) (5)=(3)+(4) (in/mo.)	Lw (p) gal/ac/month	Loading gal/mo
January	31	0.00	2.83	-2.83	11.22	8.39	227,796	842,844
February	28	0.00	2.70	-2.70	10.13	7.43	201,844	746,824
March	31	0.00	3.78	-3.78	11.22	7.44	202,001	747,403
April	30	4.70	3.42	1.28	10.86	12.14	329,598	1,219,511
May	31	5.61	3.94	1.67	11.22	12.89	349,931	1,294,744
June	30	6.55	3.97	2.58	10.86	13.44	364,872	1,350,025
July	31	6.38	4.26	2.12	11.22	13.34	362,217	1,340,203
August	31	5.60	4.26	1.34	11.22	12.56	341,124	1,262,159
September	30	4.21	3.46	0.75	10.86	11.60	315,053	1,165,695
October	31	2.89	2.89	0.00	11.22	11.22	304,711	1,127,431
November	30	1.93	3.65	-1.72	10.86	9.14	248,108	917,999
December	31	0.00	3.62	-3.62	11.22	7.60	206,345	763,477
Annual	365	37.87	42.78	-4.91	132.10	127	3,453,599	12,778,315

[1] Adjusted potential rate employs 10 % of measure rate following methodology of EPA Process Design Manual for Land Treatment of Municipal Wastewater.

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Project: Corinne De
By: RDD
Rev:

Basis

Disposal System	Drip
Flow	20,213 gpd
Influent BOD_5	300 mg/l
Influent Nitrogen (N_o)	45 mg/l
Treatment Lagoon Effective Volume	629,669 gals

Wastewater Nitrogen Loading

$$L_{w(n)} = \frac{Cp*(Pr-ET) + U*4.42}{(1-f)(C_n) - C_p}$$

based on Manual for Land Application of Municipal Wastewater
Chapter 4 paragraph 4.5.2 Nitrogen Loading Rates

Where:

$L_{w(n)}$ = Wastewater Nitrogen Loading (in/mo)
U = Crop Nitrogen Uptake (lb./ac/mo.) for orchard grass
f = 0.15 Fraction denitrification and volatilization (lb/ac/mo) 15% of applied nitrogen
Pr = Precipitation rate , in./mo.
ET = Evapotranspiration rate, in./mo.
C_p = 10 mg/l Nitrogen concentration in percolating water
C_n = Nitrogen concentration in applied wastewater, mg/l
4.42= Conversion factor going from lb/ac-mo to (mg/l)(in/mo)
Area = 3.70 ac

					EPA based N removal		*CRREL based N removal*	
	ET in./mo.	**Pr in./mo.**	**Pr - ET in./mo.**	**U lb./ac/Mo.**	**$L_{w(n)}$ in./mo.**	**$L_{w(n)}$ gal./mo.**	**$L_{w(n)}$ in./mo.**	**$L_{w(n)}$ gal./mo.**
January	0.00	2.83	2.83	0.0	1.40	140,190	1.45	145,381
February	0.00	2.70	2.7	10.0	3.51	352,704	3.71	372,615
March	0.00	3.78	3.78	20.0	6.22	625,157	7.11	714,446
April	4.70	3.42	-1.2812	40.0	8.09	812,348	10.54	1,058,843
May	5.61	3.94	-1.668133	40.0	7.90	793,180	12.08	1,213,870
June	6.55	3.97	-2.580316	40.0	7.45	747,994	13.72	1,378,010
July	6.38	4.26	-2.120632	40.0	7.67	770,765	16.02	1,609,884
August	5.60	4.26	-1.343789	40.0	8.06	809,247	16.01	1,608,640
September	4.21	3.46	-0.745529	40.0	8.35	838,883	13.96	1,402,760
October	2.89	2.89	-0.002727	20.0	4.36	437,772	5.99	601,524
November	1.93	3.65	1.72	10.0	3.03	304,157	3.63	364,708
December	0.00	3.62	3.62	0.0	1.78	179,324	1.91	191,970
Annual				300.00	67.80	6,811,722	106.13	10,662,652

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Project: Corinne Development, LLC
By: RDD Date: 3/16/2005
Rev By: _____ Date: _____

Rainfall Volumes on Lagoons

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Total Precipitation Data	1	2.83	2.70	3.78	3.42	3.94	3.97	4.26	4.26	3.46	2.89	3.65	3.62	42.78
Total Evaporation Data	2	0.00	0.00	0.00	4.70	5.61	6.55	6.38	5.60	4.21	2.89	1.93	0.00	37.87
Difference (in)		2.83	2.70	3.78	-1.28	-1.67	-2.58	-2.12	-1.34	-0.75	0.00	1.72	3.62	4.91
Difference (ft)		0.24	0.23	0.32	-0.11	-0.14	-0.22	-0.18	-0.11	-0.06	0.00	0.14	0.30	

	Surface Area	Jan (Gallons)	Feb (Gallons)	Mar (Gallons)	Apr (Gallons)	May (Gallons)	Jun (Gallons)	Jul (Gallons)	Aug (Gallons)	Sep (Gallons)	Oct (Gallons)	Nov (Gallons)	Dec (Gallons)
Treatment Lagoon	18,655	32,908	31,396	43,955	(14,898)	(19,398)	(30,005)	(24,659)	(15,626)	(8,669)	(32)	20,001	42,094
Storage Lagoon	18,655	32,908	31,396	43,955	(14,898)	(19,398)	(30,005)	(24,659)	(15,626)	(8,669)	(32)	20,001	42,094
Totals		65,816	62,793	87,910	(29,796)	(38,795)	(60,009)	(49,319)	(31,252)	(17,338)	(63)	40,001	84,189

1. See Attached Evaporation Data

Net Rain Fall Capture = **114,136** gallons

Note: This spreadsheet is currently using the University of Delaware precipitaion and evapotranspiration data. However, we do have data from West Chester, PA available to use.

Evans Mill Environmental, Inc.
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Project: Corinne Development, LLC
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CK By: _____ Date: _____

Total Evaporation Data
Station: University of Delaware

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	*Avg*
1975	-	-	-	-	-	6.74	5.85	5.83	-	-	-	-	18.42
1976	-	-	-	5.11	5.58	6.52	6.50	6.12	3.91	-	-	-	33.73
1977	-	-	-	6.06	6.29	7.24	6.07	3.65	-	-	-	-	29.30
1978	-	-	-	-	4.51	6.39	6.40	4.55	4.09	-	-	-	25.93
1979	-	-	-	-	4.78	4.81	5.37	5.15	4.12	-	-	-	24.22
1980	-	-	-	-	5.81	7.00	7.55	6.59	5.15	-	-	-	32.09
1981	-	-	-	-	5.48	6.17	6.91	5.60	4.08	-	-	-	28.24
1982	-	-	-	-	5.43	5.39	6.09	5.61	3.61	3.30	-	-	29.43
1983	-	-	-	-	-	-	-	-	-	-	-	-	0.00
1984	-	-	-	-	-	7.47	7.42	5.40	3.54	2.28	-	-	26.11
1985	-	-	-	-	6.67	5.47	6.30	4.95	4.40	-	-	-	27.79
1986	-	-	-	-	-	5.79	7.21	5.46	3.47	3.54	-	-	25.47
1987	-	-	-	-	5.46	7.39	6.76	6.34	4.34	2.55	-	-	32.84
1988	-	-	-	4.22	5.58	6.90	7.64	5.88	3.92	2.81	-	-	36.95
1989	-	-	-	-	4.88	7.82	6.74	4.79	3.89	2.79	-	-	30.91
1990	-	-	-	-	5.70	5.92	6.38	5.10	4.06	2.98	2.41	-	32.55
1991	-	-	-	-	6.86	6.65	0.00	6.71	4.91	2.89	1.47	-	29.49
1992	-	-	-	3.52	5.40	7.16	7.30	7.45	5.50	3.64	-	-	39.97
1993	-	-	-	-	-	6.70	7.32	6.44	4.46	2.79	1.59	-	29.30
1994	-	-	-	4.60	5.70	6.93	7.43	4.86	4.05	2.25	2.25	-	38.07
Average	0.00	0.00	0.00	4.70	5.61	6.55	6.38	5.60	4.21	2.89	1.93	0.00	37.87

Weather Data
West Chester, PA

Month	Precipitation	Evapotranspiration	Difference	Ave. Temp., °F
Jan	3.37	0.0000	3.3700	30.2
Feb	3.1	0.0064	3.0936	32.4
Mar	3.74	0.5528	3.1872	40.6
Apr	3.74	1.7599	1.9801	51.4
May	4.26	3.4302	0.8298	61.4
Jun	3.9	4.8144	-0.9144	70.2
Jul	4.56	5.511	-0.9510	75.0
Aug	4.19	4.7574	-0.5674	73.2
Sep	4.1	3.2427	0.8573	65.9
Oct	3.13	1.8828	1.2472	55.0
Nov	3.97	0.7582	3.2118	44.9
Dec	3.62	0.0583	3.5617	33.9
Total	*45.68*	*26.7741*	18.9059	

TABLE 2

CORINNE VILLAGE WWTF

Treatment Pond Volume

March 10, 2005

Elevation	Average Area	delta ele. (ft.)	A1+A2+SQR(A1*A2)	incremental vol cf	incremental vol gal	total vol c.f.	total vol gal
318	4,126	0		0	0	0	0
319	5,026	1	13,706	4,569	34,173	4,569	34,173
320	5,982	1	16,491	5,497	41,118	10,066	75,291
321	6,995	1	19,446	6,482	48,485	16,548	123,776
322	8,064	1	22,570	7,523	56,273	24,071	180,049
323	9,190	1	25,863	8,621	64,484	32,692	244,533
324	10,372	1	29,325	9,775	73,117	42,467	317,651
325	11,616	1	32,964	10,988	82,191	53,455	399,842
326	12,907	1	36,767	12,256	91,674	65,711	491,515
327	14,259	1	40,732	13,577	101,559	79,288	593,074
328	15,668	1	44,874	14,958	111,886	94,246	704,960
329	17,133	1	49,185	16,395	122,635	110,641	827,595
330	18,655	1	53,666	17,889	133,807	128,530	961,402

606,390 Required volume (gallons) based on 30 days detention time

629,669 Effective storage volume (gallons) in pond (with 2' freeboard and 2' min. WL).

31 Days Hydraulic Detention Time

75,291 Gallons, Sludge Volume

256,442 Gallons, Freeboard Volume

961,402 Gallons, Total Volume

TABLE 2B

CORINNE VILLAGE WWTF

Storage Pond Volume

March 10, 2005

Elevation	Average Area	delta ele. (ft.)	A1+A2+SQR(A1*A2)	incremental vol cf	incremental vol gal	total vol c.f.	total vol gal
314	4,126	0		0	0	0	0
315	5,026	1	13,706	4,569	34,173	4,569	34,173
316	5,982	1	16,491	5,497	41,118	10,066	75,291
317	6,995	1	19,446	6,482	48,485	16,548	123,776
318	8,064	1	22,570	7,523	56,273	24,071	180,049
319	9,190	1	25,863	8,621	64,484	32,692	244,533
320	10,372	1	29,325	9,775	73,117	42,467	317,651
321	11,616	1	32,964	10,988	82,191	53,455	399,842
322	12,907	1	36,767	12,256	91,674	65,711	491,515
323	14,259	1	40,732	13,577	101,559	79,288	593,074
324	15,668	1	44,874	14,958	111,886	94,246	704,960
325	17,133	1	49,185	16,395	122,635	110,641	827,595
326	18,655	1	53,666	17,889	133,807	128,530	961,402

606,390 Required volume (gallons) based on 30 days of stroage

629,669 Effective storage volume (gallons) in pond (with 2' freeboard and 2' min. WL).

31 Effective storage in pond (days)

75,291 Gallons, Sludge Volume

256,442 Gallons, Freeboard Volume

961,402 Gallons, Total Volume

EVANS MILL
ENVIRONMENTAL, INC.

SECTION F

OPERATIONS & MAINTENANCE AGREEMENT

DECLARATION OF COVENANTS, EASEMENTS AND RESTRICTIONS OF OSBORNE PLACE

THIS Declaration of Covenants, Restrictions and Easements (hereinafter called "Declaration") is made as of March 24, 2000, by OSBORNE PLACE ASSOCIATES, INC. and SUZANNE L. WILLIAMSON (hereinafter collectively called the "Declarant").

RECITALS

A. Declarant is the Owner of a certain parcel of land situate in Pocopson Township (the "Township"), Chester County, Pennsylvania, containing approximately 72.6055 acres of land, more or less, which is described by metes and bounds on Exhibit "A", which is attached hereto and made a part hereof (hereinafter called the "Property") and which is shown on a certain Plan of Subdivision of "Osborne Place" prepared by Crossan-Raimato, Inc., dated July 7, 1998, last revised January 28, 2000, and recorded in the Office of the Recorder of Deeds in and for Chester County, Pennsylvania, as Plan No. 9015320 (which Plan, together with all approved and/or recorded amendments, final plans, additions, revisions or deletions therefrom or thereto is hereinafter called the "Plan").

B. Declarant has subdivided the Property into twenty-two (22) separate lots (hereinafter individually called a "Lot" and collectively called the "Lots") of which twenty-one (21) lots are Building Lots owned by the Declarant, Osborne Place Associates, Inc. or its assignee and one (1) lot is owned by the Declarant, Suzanne L. Williamson. Declarant desires in accordance with this Declaration to provide for the preservation, use and occupancy of the Lots and the Property in a manner which will be beneficial to the Owners and occupants of the Lots and dwellings to be constructed thereon, and to create, grant and reserve certain

easements over and across the Property for the benefit of Declarant, the Township and the Owners of the Lots, and to provide for the maintenance and repair of certain stormwater management facilities constructed or to be constructed on the Property for the common benefit of the Lots and the Owners and occupants thereof.

NOW, THEREFORE, Declarant hereby declares and covenants for itself and its successors and assigns, that the Property described on Exhibit "A", and shown on the Plan is and shall be held, transferred, sold, conveyed, used and occupied under and subject to all the covenants, restrictions, easements and conditions hereinafter set forth in this Declaration, and further as to the Building Lots (hereafter defined) subject to the provisions of the Pennsylvania Uniform Planned Community Act (68 Pa. C.S.A. §5101 et seq.) all of which shall be easements, covenants, restrictions and conditions running with the Property and the Lots, and which shall be binding upon all parties having or acquiring any interest in the Property or any of the Lots, in perpetuity.

ARTICLE I - DEFINITIONS

In addition to the terms defined in the Recitals to this Declaration, the following words, when used in this Declaration or any supplement or amendment hereto, shall have the meanings ascribed to them in this Article I.

"Association" - the Homeowners or Unit Association (hereafter "the Association") is formed in compliance with the Uniform Planned Community Act, 68 Pa. C.S.A. §5101 et seq. as a nonprofit corporation. All owners of Lots 1 through 20 shall become members of the Association upon acquiring fee simple title to the subject lot. (The owners of Lots 21 and 22 shall not be members of the Association.)

"Building Lots" - means those twenty-one (21) lots that are identified on the subdivision plan as Lots 1 through 20 and Lot 22 that have or will be

conveyed from Declarant, Suzanne L. Williamson, to Declarant, Osborne Place Associates, Inc. (The Building Lots, with the exception of Lot 22, shall also form the Planned Community and/or Association as set forth in Article X below.)

"Common Expense" - the expenses incurred by the Association as set forth below in Article X.

"Common Facilities" - the stormwater management facilities and the Restricted Open Space which are the responsibility of the Association to maintain.

"Declarant" - the Declarant has been identified above collectively as Osborne Place Associates, Inc. and Suzanne L. Williamson. However, to the extent that reference is made in this Declaration to the Building Lots, it is understood that the reference to Declarant is to Osborne Place Associates, Inc. The references to Lot 21 shall mean the Declarant, Suzanne L. Williamson.

"Dwelling" - means a single family, detached, residential dwelling house (with attached garage) constructed or to be constructed on any Building Lot.

"Lot 21" - means the parcel of land retained by the Declarant, Suzanne L. Williamson, consisting of 10.1 acres more or less. Lot 21 is not a Building Lot.

"Member" - a fee simple or record owner of Lots 1 through 20 who as a result of their ownership shall be accorded membership status in the Association.

"Owner" or "Unit Owner" - means the then record owner (at any given time), whether one or more persons, of the fee simple title to any Lot.

"Restricted Open Space" - the area consisting of approximately 12.5398 acres surrounding the twenty (20) building lots located on Osborne Circle which area is defined by metes and bounds in Exhibit "B" as attached hereto and incorporated by reference herein. The Restricted Open Space is for the benefit and use of the Association as well as the Township as open space, easements for

stormwater management areas as well as recreation including, but not limited to, the existence of a walking trail commencing from a point on Larkin-Baily Road a/k/a Larkin-Bailey Road and proceeding in a northerly direction to the lands of Samuel A. and Judith Cousins as recorded in Deed Book O-37, page 506, et seq.

"Township" - means the Township of Pocopson, Chester County, Pennsylvania or any successor municipality.

ARTICLE II - BUILDING AND USE RESTRICTIONS

1. USE PROHIBITIONS. No industrial, manufacturing or commercial activity, trade or business (except Home Occupations as permitted by the Township's Zoning Ordinance) shall be conducted on any of the Building Lots, or in any Dwellings or other buildings or improvements now or hereafter constructed on any of the Building Lots, nor shall any commercial, industrial or manufacturing structure, building or facility be constructed on any of the Building Lots. No mining, quarrying or removal of gravel, soil, rock or other materials shall be conducted on any of the Building Lots, except for excavation and removal of soil necessary in connection with the normal construction and maintenance of buildings, driveways and appurtenant residential improvements. No structure upon a Building Lot shall be used for manufacturing, business trade or for activities or any use other than a residential use. (This use prohibition shall not apply to Lots 21 and 22 which Lots may be used for those uses permitted under the Township Zoning Ordinance including, but not limited to, agricultural uses.)

2. FURTHER SUBDIVISION PROHIBITION OF BUILDING LOTS. Once a Building Lot has been conveyed by the Declarant, such Building Lot may not be further subdivided or partitioned, directly or indirectly (excluding therefrom minor lot

line changes which do not create additional Lots). Declarant may, from time to time, relocate boundaries between the Building Lots and Lot 21 owned by the Declarant Williamson by an appropriate amendment to or revision of the Plan, which revision is approved by the Township, as Declarant deems appropriate, in Declarant's sole discretion.

3. RESIDENTIAL USE. Except as otherwise expressly provided herein, the Building Lots shall be used solely and exclusively for single family residential purposes. No more than one Dwelling shall be located or constructed on any Lot, and such Dwelling shall be occupied solely by a single family as defined in the Township Zoning Ordinance. No other building, including any garage or other outbuilding, may be used or occupied, temporarily or permanently, as a residence. Each Dwelling on a Building Lot shall have a minimum living area of Two Thousand Eight Hundred (2,800) square feet (exclusive of finished or unfinished basements, attic, storage and garage areas). Each Dwelling on a Building Lot shall have an attached two-car (minimum) garage. The garage shall be constructed above-grade and shall not be located beneath the Dwelling.

4. APPROVAL OF PLANS AND SPECIFICATIONS. Except as otherwise provided in Section 14 (swimming pools) and Section 16 (fences), no construction activity of any nature shall be commenced upon the Building Lots located therein until Declarant has, in writing, and at Declarant's sole discretion, approved the original site plan and building plans and specifications (collectively the "Plans and Specs") applicable to the single family dwelling and any other structures to be built on any one or more of the Lots. Although Declarant hereby specifically reserves the right to withhold approval for any reason whatever, and at Declarant's sole discretion to be exercised by Declarant on a subjective ground, compliance with the following criteria shall be a pre-requisite to approval of

the Plans and Specs by the Declarant. All plans and specifications pertaining to construction activity (such as excavation and soil removal) shall be submitted in accordance with Township requirements pertaining to erosion control.

(a) A site plan must be submitted for each Building Lot and must show the location and first floor elevation of the Dwelling, and

(b) The Plans and Specs must specify the colors of the shutters, exterior doors, exterior trim and all exterior materials to be used including the brick, stone, stucco, wood and stain or paint areas, and

All Plans and Specifications for Dwellings on or other improvements to the Building Lots shall be submitted to Declarant for Declarant's review and approval. The builder and the Owner of the Building Lot on which a Dwelling or other improvement is to be constructed shall have the Declarant's signature on such Plans and Specs evidencing Declarant's approval thereof before a building permit is obtained. The Declarant shall review such Plans and Specs and provide the Owner of the Building Lot and the builder with approval or disapproval of such plans by a statement in writing. All construction of Dwellings shall be completed in all material respects within one (1) year after the commencement of construction. All Dwellings shall be served by paved driveways, which shall either be concrete or asphalt (macadam). Once the Declarant has conveyed all the Building Lots, and reviewed and approved the original site plan, building plan and specifications for the single family dwellings to be built on the Building Lot, this Section 4 shall terminate automatically and be of no further force or effect.

5. SATELLITE DISH. No above-ground conduits, pipelines, electric, telephone, cable television, radio and other utility transmission lines shall be installed on any Building Lot or Dwelling. No shortwave, radio, microwave,

satellite or similar type antennae dish or other transmission or reception apparatus shall be installed on any Building Lot or Dwelling in excess of two feet (24 inches) in diameter. Any antennae dish or disc installed which is larger than two feet (24 inches) in diameter shall be in violation of this Declaration and subject to removal pursuant to the enforcement remedies set forth herein. Any validly installed antennae dish shall be landscaped to minimize its appearance.

6. DOMESTIC ANIMALS. No Building Lot or any building or improvement located on a Building Lot shall be used for stabling, housing, raising, breeding, boarding or keeping one or more horses, cattle, hogs, goats, sheep, fowl or other animals or livestock of any nature for personal or commercial purposes. Domestic household pets, such as dogs and cats, that are the personal pets of the Owner or occupant of such Dwelling are acceptable. However, no more than four (4) such domestic household pets may be kept at or on any one Lot. This number shall include no more than two (2) cats and no more than two (2) dogs. (This restriction shall not apply to Lots 21 and 22 which Lots may be used for agricultural purposes in accordance with the Township Zoning Ordinance.)

7. OUTDOOR STORAGE. Outdoor storage of appliances, lumber, wood or building materials shall be forbidden upon any Building Lot, except during the construction of any Dwelling or other permitted structure on any Lot. The foregoing shall not be deemed to prohibit the outdoor storage of firewood provided that such firewood is neatly stacked to a height not more than four (4) feet from the ground level, and such firewood is located to the rear of a Dwelling so as to screen it as much as possible from view.

8. FUEL TANKS. All fuel storage tanks (including, but not limited to, propane, fuel oil and other cooking and heating fuels) on any Building Lots shall

either be located solely in accordance with Township and/or State regulations relative to location of the tank and proper ventilation of the tank.

9. RECREATIONAL VEHICLES. No trailer tent, camper, travel trailer, recreational vehicle, all terrain vehicle, boat, boat trailer or other similar vehicles or equipment shall be kept, parked or stored on any Building Lot, unless completely enclosed within a garage or other out building permitted hereunder except that such recreational type vehicles or boats may be stored on a Building Lot outside an enclosure for temporary periods not exceeding seven (7) consecutive days or seven (7) days in any period of ninety (90) consecutive days. No unlicensed, uninspected or inoperable vehicle named above may be stored on any Building Lot (other than within an enclosed garage) for more than thirty (30) consecutive days or for more than thirty (30) days in any period of three hundred sixty-five (365) consecutive days. No motor bikes, snow mobiles, mini-bikes, all terrain vehicles, trail bikes or similar vehicles shall be used or operated on or about any Building Lot, except for vehicles licensed for use on public roads and used for transportation, and not recreational purposes.

10. MOBILE HOMES. No mobile home, camper, travel trailer, recreational vehicle, all terrain vehicle, boat trailer, tent or other similar temporary and/or moveable structure (whether or not attached to any foundation), shall be used temporarily or permanently as a residence on any Building Lot. No mobile home shall be kept, parked or stored on any Building Lot. No unlicensed, uninspected or inoperable vehicle identified herein may be stored on any Building Lot (other than within an enclosed garage). No commercial vehicles of any size shall be parked or stored on any Building Lot or along any public street adjacent to any Building Lots within the Property.

11. STORAGE OF TRASH/REFUSE. No storage, depositing, dumping, burial, burning or abandonment of a solid waste, debris, trash or refuse of any nature shall be permitted, except when such trash or debris is left outdoors for not more than twenty-four (24) hours for trash collection purposes, in which case such trash or refuse shall be kept in enclosed containers or approved recycling bins. Such containers shall be removed promptly after the contents thereof have been collected.

12. CLOTHES LINES. Temporary clothes lines, clothes drying racks or similar structures shall be permitted only in the rear yard area, but no such clothes lines, clothes drying racks or similar items shall be temporarily located in the side yard or front yard areas of any Building Lot.

13. OUTBUILDINGS. No outbuildings, storage sheds or other enclosures shall be constructed on any Building Lot.

14. SWIMMING POOLS. Above-ground swimming pools are expressly prohibited on any Building Lot (including Lot 22). Any in-ground pool must be designed and installed in accordance with the Township's ordinances and regulations.

15. EROSION CONTROL. No activities, uses or improvements, shall be conducted, constructed or maintained on any Lot which would be detrimental or adverse to, or that may interfere with, any erosion control, stormwater control or soil conservation facilities or improvements located on such Building Lot (including, but not limited to, stormwater management basins, drainage swales and the like). No Owner or occupant of any Lot shall disturb or construct or maintain any improvements, or conduct any activities, on any area which constitutes "wetlands" under applicable federal and state laws and regulations which may be in violation of applicable restrictions on such disturbance, construction or use.

16. FENCES. No fencing shall be permitted on any Building Lot except fencing which satisfies all of the following requirements:

(a) Such fencing shall be in the rear yard area only;

(b) Such fencing shall be not more than five (5) feet in height;

(c) Such fencing shall be constructed of wood post and rail, split rail or post and board and/or wood picket; and

(d) Such fencing shall not interfere with or impair any easement created or reserved pursuant to this Declaration or the Plan.

The fencing may include painted wire or mesh fencing which is affixed to and located inside such wooden fencing.

Nothing contained herein shall be construed to prohibit a fence of the type required by the Township or other applicable authority for the installation, maintenance and use of a swimming pool on a Building Lot.

17. ADDITIONS TO STRUCTURES. No new structure and no exterior additions, modifications or alterations of any Dwelling, garage, or other existing structure permitted hereunder shall be constructed on a Building Lot unless the exterior materials and colors to be used in connection therewith are consistent with the exterior materials and colors used in connection with the original construction of the Dwelling on such Building Lot, or otherwise meet the requirements of this Declaration.

18. SIGNS. No signs, notices, advertisements, billboards, or similar signage shall be kept or displayed on any Building Lot or on the exterior of any Dwelling, except for signs not exceeding one (1) square foot identifying the name and/or address of the Owner or occupant of the Dwelling, and provided further that real estate "For Sale" or "Sold" signs and signs identifying the name, address and/or phone number of one or more contractors performing work on a

Building Lot may be erected for temporary periods provided that they conform with applicable laws and ordinances, and provided that no more than one (1) builder or contractor sign may be erected at any one time. Until the Declarant has conveyed all of the Building Lots to residential home buyers, the posting of real estate signs will be permitted only with the written approval of the Declarant.

19. FIRE DAMAGE. If any Dwelling, garage or other permitted outbuilding on a Building Lot is partially or entirely destroyed by fire, storm or other casualty, any Dwelling, garage or outbuilding on a Building Lot, as the case may be, partially or completely reconstructed as a result of such damage or destruction, shall be constructed or reconstructed utilizing the same exterior materials and colors as were used in the original structure. Any new structure on a Building Lot to be constructed as a replacement to a structure which has been damaged, destroyed or razed shall be substantially the same architectural style and design as the structure which it is replacing.

20. MODEL HOME. Notwithstanding any provision of this Declaration to the contrary, while Declarant Osborne owns any part of the Property, Declarant Osborne shall be entitled to maintain one or more model homes, sales offices and construction offices (including mobile offices) and to maintain and keep on portions of the Property owned by Declarant Osborne construction equipment, vehicles, lumber and other building materials as may be necessary from time to time in Declarant Osborne's sole discretion in connection with the development of the Property, the construction of Dwellings and appurtenant improvement, and the installation of stormwater management and erosion control facilities, utilities and the like. Furthermore, while Declarant Osborne owns any part of the Property, Declarant Osborne shall be permitted to place and maintain on one or more Lots (including Lots that have been sold or conveyed by Declarant

Osborne) signs for the purpose of advertising the availability of homes for sale, indicating the location of any model home or sales office and otherwise promoting the sale of homes constructed or to be constructed by Declarant Osborne on any Building Lot or Building Lots owned by the Declarant Osborne. No Owner of any Building Lot on which such sign is placed shall remove, alter or obstruct any such sign. Declarant Osborne reserves for itself an easement over any Building Lots sold or conveyed by the Declarant Osborne for the purpose of maintaining such signs pursuant to this paragraph.

21. NUISANCE. No portion of any Dwelling or Building Lot shall be used in whole or in part for the storage of any property or thing that will cause it to appear to be in an unclean or untidy condition or is a public nuisance according to the laws of the Commonwealth of Pennsylvania. No noxious or offensive activity shall be carried on upon any portion of the Property, nor shall anything be done thereon tending to cause annoyance or nuisance to any person using any portion of the Property. It shall be the responsibility of each Owner to prevent the development of any unclean, unhealthy, unsightly or unkempt condition on his Lot and Dwelling and Owner shall make no use of any Lot which creates a nuisance or which is dangerous or offensive to the neighborhood.

22. LOT/GRASS MAINTENANCE. The Owner of each Building Lot shall maintain his/her Building Lot including any buildings, swimming pools, fences, landscaping and groundcover or other improvements or structures from time to time located thereon in a good state of preservation, repair and cleanliness. All Building Lot Owners shall maintain the grass height below a maximum of six (6) inches in height. (This restriction does not apply to Lots 21 and 22.)

ARTICLE III - FURTHER SUBDIVISION PROHIBITION OF LOT 22

Declarant Osborne hereby restricts and prohibits further subdivision of Lot 22 which lot, consisting of 16.2 acres, shall be used as a single family dwelling and other uses permitted by the Township Zoning Ordinance. This lot shall not be subdivided in the future and this covenant shall be placed in the first deed of conveyance from Declarant Osborne to any third party. (Lot 22 is further described in accordance with the attached metes and bounds description that has been attached hereto as Exhibit "C".)

ARTICLE IV - NATURAL LANDSCAPE BUFFER ON BUILDING LOTS 3 THROUGH 11 AND THAT AREA OF THE RESTRICTED OPEN SPACE BORDERING THE PROPERTY OF SAMUEL AND JUDITH COUSINS

The Declarant hereby establishes a natural landscape buffer which buffer shall consist of the tree and brush line that is currently in place on the northern portion of the property. The buffer, for identification purposes, commences at a starting point at the northwestern corner of the lot to be identified as Lot 3 and traverses across the rear (or northern boundaries) of Lots 3, 4, 5, 6, 7, 8, 9, 10, 11 as well as a portion of that area identified as Restricted Open Space. The Declarant, in establishing this buffer, hereby directs that the buffer is to remain in its natural vegetative state and that neither the Declarant nor any of the subsequent owners of Lots 3 through 11 nor the Association as the owner of the Restricted Open Space shall diminish, damage or alter the natural vegetative cover which forms the border between the property and the property of Samuel and Judith Cousins, with the exception that the Declarant, the owners of Lots 3 through 11, and the Association shall be permitted to remove diseased and/or dead trees from the natural buffer. All diseased and/or dead trees so removed must be replaced by either the Owner or the Association with a like (native) tree having a DBH (Diameter at Breast Height)

of at least 2 1/2 inches. (The buffer is further described in accordance with the metes and bounds description attached as Exhibit "D".)

ARTICLE V - STORMWATER MANAGEMENT AND OTHER IMPROVEMENTS

1. GENERAL. Declarant on behalf of itself and its successors and assigns reserves the right to enter upon the Property and any Building Lot as may be necessary from time to time in connection with the constructions, completion, monitoring, grading, seeding, maintenance or repair of any facilities required or permitted to be constructed by Declarant pursuant to the Plan or applicable Township ordinances and requirements including, but not limited to, stormwater management basins, culverts, subsurface pipes or conduits for the conveyance of stormwater runoff, drainage swales, soil and surface runoff control devices, whether permanent or temporary, and similar improvements.

2. RESPONSIBILITIES OF OWNER. The Owner of any Lot on which any permanent stormwater management basin or similar facility is located (in whole or in part) shall be individually responsible for the maintenance, repair, cleaning, mowing and general maintenance of such basin or other facilities (to the extent located on his/her Lot) after conveyance of such Lot to the Owner, as may be necessary from time to time to ensure the proper functioning thereof, and as otherwise may be required by the township from time to time. After approval of any stormwater management basin or any similar facilities by the Township, and conveyance of the Lot on which such facilities are located by the Declarant, Declarant shall have no further liability or responsibility for the maintenance, repair, cleaning, mowing or other actions which may be necessary from time to time with respect to such stormwater management basins or facilities.

Specifically, the Owners of Lots 20 and 21 shall not alter nor change the stormwater management area that is located primarily on Lot 20 and partially on

Lot 21. The Owners of Lots 20 and 21 shall be responsible in their proportionate share for the cleaning, mowing and general maintenance of the stormwater management area (basin). However, in the event that any structural improvements or repairs are needed to the permanent retention basin that is located on Lots 20 and 21, then the Association solely shall be responsible for the cost of the structural improvements or repairs which are also known and defined as a Common Expense. Each member of the Association will be required to contribute their pro rata share of the cost of any structural improvements or repairs in that regard. The Township shall have the right to inspect the permanent retention basin and appurtenant structures at any time. Moreover, in the event of the Lot Owners' and/or Association's default pertaining to maintenance and/or installation of structural improvements or repairs, the Township shall have the right, but not the obligation, to enter upon Building Lot 20 and Lot 21 to correct said default. The Township shall further be entitled to assess the then record Owners of Building Lots 1 to 20 as the defaulting party for the cost of said maintenance, structural improvements or repairs which cost the Lot Owners agree herein to be responsible for, jointly and severally, which assessment shall become a municipal lien pursuant to the Municipal Lien Law of Pennsylvania. (The owner of Lot 21 shall not be responsible for any structural improvements or repairs and cannot be assessed for the costs of the same by either the Association or the Township. The legal description for the stormwater management basin located partially on Lot 20 and partially on Lot 21 is attached hereto as Exhibit "E".)

3. RESTRICTED OPEN SPACE. The plan contains a tract or parcel of land consisting of 12.5 acres of "Restricted Open Space". The Plan, as well as this Declaration, calls for the installation of a stormwater management facilities including, but not limited to, stormwater management areas or basins as well as

drainage easements. The Association shall be responsible for the mowing, maintenance and the structural repairs (if any) of the stormwater facilities that are located within the Restricted Open Space. Moreover, in the event of the Association's default pertaining to maintenance and/or installation of structural improvements or repairs, the Township shall have the right (but not the obligation) to enter upon the Restricted Open Space to correct said default and the Township shall be entitled to assess the then record owners of Building Lots 1 through 20 (who are also identified as members of the Association) as the defaulting party for the cost of said maintenance, structural improvements and/or repairs which cost the owners of the Building Lots and (members of the Association/the Association) agree herein to be responsible for, jointly and severally.

4. ROOF SEEPAGE BEDS ON BUILDING LOTS 1 THROUGH 20. The plan requires the installation of roof seepage beds on Building Lots 1 through 20, therefore, the Owners of Building Lots 1 through 20 shall be prohibited from disturbing and/or removing the roof seepage beds installed by the Declarant on their respective lot. Additionally, it is recommended that the Owners of the Building Lots keep their roof gutters, downspouts, pipes and causeways directing water flow to the roof seepage beds free of any and all sediment, debris and leaves.

5. DEDICATION TO TOWNSHIP. If requested or required by the Township, the Owner of any Lot or the Association on which any stormwater management basin, culvert, pipes or similar facilities are located agrees to dedicate to the Township (and/or join with Declarant in dedicating to the Township) an easement over and across such portion of such Lot on which such drainage basin or other facilities are located, and to convey to the Township (or join with Declarant in

the conveyance to the Township of) any subsurface pipes, conduits or culverts as may be located on such Lot. Such dedication shall be no cost to the Township.

6. DECORATIVE LANDSCAPING BY DECLARANT. In the event that the Declarant installs on any Building Lot decorative landscaping designed as a permanent part of the development at the Property as required by the subdivision plan, after conveyance of such Building Lot by the Declarant the Owner of such Building Lot shall be responsible, at such Owner's sole cost and expense, for maintaining in good condition and repair such landscaping and plant materials, and shall from time to time plant trees, shrubbery or other plants or other parts of such landscape areas necessary to replace diseased or dead shrubs, trees or other plant materials.

7. TOWNSHIP'S RIGHTS. As per the Plan, the Township shall have the right, but not the obligation, to enter upon any Lot containing stormwater retention facilities to inspect the same and maintain the same in the event that the Owner or the Association fails to maintain or repair and/or if an emergency exists as determined by the Township. Moreover, no dwelling, construction obstructions, outbuilding, tennis court, recreational field or facility, swimming pool, paving or any common area use or utilization other than the approved stormwater management facility shall be placed upon, constructed or utilized within the restricted areas as shown on the Plan.

8. LOT 22 STORMWATER MANAGEMENT. The Owner of Lot 22, not the Association nor the Owner of Lot 21, shall be solely responsible for any and all maintenance, mowing and repairs to any stormwater management facilities located on Lot 22.

ARTICLE VI - EASEMENTS

1. GENERAL. Declarant reserves for itself, and its successors and assigns, any and all easements shown on the Plan, and reserves for itself and its successors and assigns an easement over and across each of the Building Lots and Lot 21 and Lot 22 as may be necessary from time to time in connection with the construction, installation, repair and maintenance of utilities and utility facilities, including electrical, telephone, cable television and similar facilities. Declarant shall have the right to grant easements over and across the Property and any of the Building Lots and Lot 21 and Lot 22 to public or private entities furnishing or providing facilities for the transmission of utility services, including electrical, telephone, cable television and, if applicable, natural gas, services. Declarant hereby further reserves for itself, and its successors and assigns, and reserves the right to transfer and dedicate to the Township, all stormwater drainage and basin easements shown on the Plan, and with reference to such stormwater management basin or drainage easements, Declarant reserves the right to alter the location thereof in a manner which will reflect the actual as-built location of any facilities such as pipes, culverts of basins constructed or to be constructed within such easement areas, and to amend this Declaration, or record one or more other easement agreements, setting forth specific rights and obligations of the Owners of the Lots affected thereby and setting forth metes and bounds descriptions of such easement areas. If requested by Declarant, the Owner of any Lot affected by any such basin or drainage easement shall join the Declarant in executing and delivering to the Township one or more documents dedicating to the Township easements over and across such easement areas as the Township may require from time to time.

2. TRAIL SYSTEM. The Declarant shall install a trail system in accordance with the plan within the Restricted Open Space which Restricted Open Space will be ultimately conveyed and/or dedicated to the Association. The trail system shall be maintained by the Declarant until the Restricted Open Space is transferred to the Association at which time it shall become the responsibility of the Association to maintain. The Declarant hereby grants an easement over and across the trail system in favor of the Township, its successors and assigns to have access and use the trail system for the benefit of Township's residents as well as the Association. Moreover, the Declarant hereby further reserves for itself, its successors and assigns, the right to transfer and dedicate the trail system in the Restricted Open Space to the Township if so requested by the Township. Any such dedication by the Declarant and/or the Association shall be at no cost to the Township.

3. ASSOCIATION'S INSURANCE FOR TRAIL SYSTEM. The Association shall procure liability insurance and shall name the Township as an "additional insured" to protect the Township from liability relative to the Restricted Open Space, particularly the trail system located within the Restricted Open Space. In the event the Association fails to procure said insurance and/or name the Township as an additional insured, the Township shall have the right but not the obligation to procure liability insurance and the right to lien the Association and/or the individual Owners for the cost of the insurance.

4. TRAIL SYSTEM ADJACENT TO RED LION ROAD. As per the plan, the Declarant Osborne and the Declarant Williamson hereby grant a trail, within the right-of-way of Red Lion Road, that will traverse Lots 3, 2, 1, 20 and 21 is a southerly direction on Red Lion Road. This trail system shall be for the benefit and use of the Township who shall be responsible for the care and maintenance of

this portion of the trail system. To the extent required by the Township, the Declarant Osborne and the Declarant Williamson hereby agree to dedicate the trail system to the Township if so required while the Declarants are in ownership of the lots through which the trail passes. Any such dedication shall be at no cost to the Township.

5. RELINQUISHMENT OF DECLARANT'S RIGHTS IN LARKIN-BAILY ROAD. The Declarant hereby relinquishes any rights for itself, its successors and assigns, including the Association, in that portion of the Restricted Open Space that abuts Larkin-Baily Road to the extent that the Declarant, for itself, its successors and assigns, agrees that in the event the Township either vacates or abandons Larkin-Baily Road that such vacation will not result in the Declarant, its successors and/or assigns, acquiring, by law, that portion of Larkin-Baily Road that would otherwise be conveyed to the Declarant, its successors and/or assigns in an abandonment and or vacation of the street, highway or roadway. The Declarant, for itself, as well as its successors or assigns, including the Association, waives any claim of damages which might otherwise accrue to it as a result of the vacation/abandonment.

6. NON-LIABILITY OF DECLARANT. Declarant shall not be liable for any property damage or personal injury, or the consequences thereof, as a result of exercise by Declarant or its successors or assigns of any of the rights or easements reserved herein or on the Plan.

ARTICLE VII - RESTRICTIONS AFFECTING LOT 21 BY DECLARANT, SUZANNE L. WILLIAMSON

1. RESTRICTION AGAINST FUTURE SUBDIVISION. Declarant, Suzanne L. Williamson, hereby grants, creates and declares that Lot 21 consisting of

approximately 10.1 acres identified on the Plan shall remain intact as a single tract or parcel of land.

2. NON-APPLICABILITY OF RESTRICTION. This Declaration shall be construed to prevent or prohibit the Declarant from future subdivision of Lot 21 only. However, it shall not be construed to prohibit nor prevent Declarant, Suzanne L. Williamson, her heirs, successors and assigns from residing or living in the buildings that are a part of Lot 21 and/or repairing and/or modifying those buildings or adding additional structures in accordance with the Township Subdivision and Zoning Ordinances.

3. BINDING NATURE. This Declaration shall be a covenant that runs with the land and shall be binding upon all of the heirs, beneficiaries or successors and assigns of the Declarant and shall inure to the benefit of the heirs, successors and assigns of the Owners of the Building Lots and the Township.

4. STORMWATER BASIN. Moreover and in addition to the other restrictions herein, the Declarant agrees that the portion of the permanent stormwater basin located partially on Lot 21 (which also exists on Building Lot 20) shall not be removed nor altered in any way or manner without the approval of the Township.

5. CONSERVATION EASEMENT. In accordance with the plan, a conservation easement shall be placed on Lot 21 as per Section 303 of the Pocopson Township Zoning Ordinance.

ARTICLE VIII - ENFORCEMENT OF DECLARATION

1. ENFORCEMENT. While the Declarants Osborne and Williamson own any part of the Property, the provisions of this Declaration shall be enforceable solely and exclusively by the Declarants Osborne and Williamson and/or the Township. Enforcement of this Declaration may be by any action at law or in equity, and Declarant Osborne reserves the right, after notice to the Owner of

the Lot, to enter upon any Lot to abate any violation of the provisions of this Declaration if deemed necessary by Declarants Osborne and Williamson, without being liable for any trespass or any other violation of law. Once the Declarant Osborne conveys all of the Building Lots, the easements, restrictions and other provisions of this Declaration (exclusive of those provisions hereof granting Declarant the right of approval or disapproval) shall be enforceable by one or more of the Owners of the Building Lots, or the Association as herein defined, as well as the Owner of Lot 21 who are or may be affected by any violation or threatened violation of such provisions. In the event any of the Owners default in the performance of their obligations under this Declaration, including the Owner's obligations to maintain the stormwater management basins in accordance with the provisions contained herein, the Township shall have an easement and the right, but not the obligation, to enter any one or more of the Lots for the purpose of performing the Owner's obligations hereunder. The Township shall thereupon have the right to assess the cost of any such action by it against the defaulting Lot Owner and file a lien pursuant to the Municipal Lien Law against the Lot Owner until the assessment is paid.

2. EQUITABLE RELIEF. The covenants and restrictions contained in this Declaration may be enforced by appropriate equitable relief requiring the removal or modification of any building, structure or other improvement (including, but not limited to, the removal of any satellite dishes or discs in excess of two feet (24 inches) in diameter) to the extent necessary to comply with this Declaration or to prevent the construction or demolition of any Dwelling, building or other structure to the extent necessary to enforce the covenants and restrictions contained herein. The failure of the Declarant or any Owners to

enforce any covenant or restriction herein contained shall in no event be deemed a waiver or the right to do so thereafter.

3. PLAN APPROVAL. No suit or proceeding may be brought by or on behalf of any Owner or group of Owners for the purpose of compelling Declarant to approve or disapprove any plans or proposals submitted to Declarant by the Owner of any Lot within the scope of Declarant's authority hereunder, or to compel Declarant to enforce by any means any of the covenants or restrictions contained herein with respect to any Dwelling, structure or other improvement existing on the Property on the date hereof or hereafter constructed or proposed to be constructed.

4. VIOLATIONS/PENALTIES. In the event that any action is brought to enforce any of the covenants, conditions, restrictions or easements set forth in this Declaration against the Owner of any Lot, the Owner of such Lot who has violated any provision of this Declaration shall be liable to the Declarant or to the Owner or Owners, and/or the Association seeking to enforce this Declaration for all costs and expenses incurred by the Declarant, the Association or such Owners in connection with the enforcement or attempted enforcement or abatement of any violation of this Declaration, and all attorneys' fees and court costs incurred in connection with any legal or equitable proceedings brought to enforce this Declaration. Such amounts shall constitute a lien upon the Lot of the Owner or Owners against whom such enforcement is sought. Declarant and/or the Association shall have the right to execute and file in the Office of the Recorder of Deeds one or more notices or memoranda of assessment setting forth the amount due and describing the Lot against which such assessment constitutes a lien. Such assessment shall bear interest at the rate of twelve (12%) percent per annum from the date of recording of such assessment, but, shall not have

priority over any previously recorded mortgage. The Declarant and/or Association shall send notice of the recording of such instrument to the Owner or Owners of the Lot affected thereby.

ARTICLE IX - RIGHTS OF ELIGIBLE MORTGAGEES

1. ELIGIBILITY. A holder, insurer or guarantor of a first mortgage on a Building Lot shall be required to provide to the Association a statement of its name, address and the Building Lot against which it is the Eligible Mortgagee as such term is used in this Declaration and thereby entitled to the rights set forth for its benefit in this Article and elsewhere in this Declaration.

2. NOTICES TO ELIGIBLE MORTGAGEE. Upon written request to the Association, identifying the name and address of the Eligible Mortgagee of the particular Building Lot, any Eligible Mortgagee shall be entitled to timely notice of:

(a) Any condemnation loss or any casualty loss which affects a material portion of the Common Elements.

(b) Any delinquency in the payment of Assessments or charges owed by a Building Lot Owner or any other default in the performance by a Building Lot Owner against which the Eligible Mortgagee lien applies or any obligation under this Declaration, the By-Laws of any Rules and Regulations of the Association which delinquency or other default continues for a period of sixty (60) days.

(c) Any lapse, cancellation or material modification of any insurance policy or fidelity bond maintained by the Association;

(d) Any proposed action which would require the consent of a specified percentage of Eligible Mortgagees as specified in Section 3 below.

3. ELIGIBLE MORTGAGEE APPROVAL.

(a) Any restoration or repair of the Common Facility, after a partial condemnation or damage due to an insurable hazard, shall be performed substantially in accordance with the Plan unless other action is approved by at least fifty-one percent (51%) of all Eligible Mortgagees.

(b) Any election to terminate the legal status of the Community as to any of the Common Facility after substantial destruction or a substantial taking in condemnation of the Common Facility shall require the approval of at least fifty-one percent (51%) of all Eligible Mortgagees. Any other abandonment or termination of the Community by act or omission shall require the prior written approval of at least sixty-seven percent (67%) of all Eligible Mortgagees.

(c) Any abandonment, partition, subdivision, encumbrance, sale or transfer of any of the Common Facility (except for granting easements for utilities or other public purposes consistent with the intended use of the Common Facility) by act or omission shall require the prior written approval of at least sixty-seven percent (67%) of the Eligible Mortgagees.

4. MORTGAGE FORECLOSURE. If a mortgagee of a "First Mortgage of Record", (whether an Eligible Mortgagee or otherwise) or other purchaser of one of the Building Lots acquires title to such Building Lot as a result of a foreclosure of the first mortgage, or by deed in lieu of foreclosure, such acquirer of title, its successors and assigns, shall not be liable for the share of common expenses or other charges by the Association that pertain to such Building Lot which would have been chargeable to the former owner prior to the acquisition of title as a result of such foreclosure. The former owner shall remain personally liable for such common expense or other charge. Their unpaid

share of the common expense or charges shall be deemed collectable from all of the remaining owners as assessed by the Association in pro rata shares. The purpose of this paragraph is to insure that any first mortgagee shall be able to convey clear and marketable title to any such acquirer of title, its successors and assigns.

5. CORRECTING ERRORS. If any amendment to this Declaration or the By-Laws of the Association during the Declarant's period of control or thereafter during the Association's period of control to change, correct or supplement anything appearing or failing to appear therein which is necessary to conform to the requirements of FNMA (Fannie Mae), FHLMC (Freddie Mac), HUD or the VA (Veterans Administration) with respect to the Property or any of the Building Lots as it pertains to the availability to obtain financing for a Building Lot, the Declarant or the Association as the case may be may, at any time, affect such appropriate corrective amendment upon receipt of an opinion from independent counsel to the effect that the proposed amendment is permitted by the terms of this paragraph and by the Uniform Planned Community Act, Title 68 Pa. C.S.A. §5101, et seq.

ARTICLE X - COMPLIANCE WITH UNIFORM PLANNED COMMUNITY ACT

This Declaration is subject to the provisions of the Uniform Planned Community Act, 68 Pa. C.S.A. §5101 et seq. because an Owner of a Building Lot (excepting the Owner of Lot 22) may become obligated by this Declaration to pay an amount or sum of money for maintenance, repair and/or structural improvement of any stormwater basin or facility located in the Restricted Open Space as well as for the repair and/or structural improvement of the stormwater basin or facility located partially on Lot 20 in addition to any and all fees required to be paid to maintain the Restricted Open Space and the trail system within the

Restricted Open Space including, but not limited to, those fees required for mowing or cutting grass, mulching the trail system from time to time, insuring the Association from liability within the Restricted Open Space area and/or for insuring the Directors/Officers of the Association. The mandates required by the Uniform Planned Community Act shall be restricted to those applicable provisions set forth in 68 Pa. C.S.A. §5102(a)(2) as amended and to the Owners of the twenty (20) Building Lots (Lot Nos. 21 and 22 are excluded from compliance with 68 Pa. C.S.A. §5101 et seq.) who shall form the Association.

The Declarant shall establish an Owners Association for the twenty (20) Building Lots ("the Association") which Association shall be a non-profit corporation with by-laws as permitted by Title 68 Pa. C.S.A. §5301 and shall manage the Planned Community (the twenty [20] Building Lots) in accordance with Title 68 Pa. C.S.A. §5101 et seq. generally, and specifically for the purpose of providing a mechanism to collect the costs or amounts required for maintenance, repair and/or structural improvement of any stormwater basin or facilities located in the Restricted Open Space as well as for the repair and/or structural improvement of the stormwater basin or facility located partially on Lot 20 in addition to any and all fees required to be paid to maintain the Restricted Open Space and the trail system within the Restricted Open Space including, but not limited to, those fees required for mowing or cutting grass, mulching the trail system from time to time, insuring the Association from liability within the Restricted Open Space area and/or for insuring the directors/officers of the Association.

Declarant shall control the Association, appoint and remove officers and members of the executive board, if any, from the date of the first conveyance of the lots subject to this Declaration until a date sixty (60) days after

conveyance of seventy-five percent (75%) of the lots subject to this Declaration. However, sixty (60) days after conveyance of twenty-five percent (25%) of the Building Lots to Owners other than the Declarant, at least one member and not less than twenty-five percent (25%) of the members of the Executive Board shall be elected by Unit owners other than the Declarant. sixty (60) days after conveyance of fifty percent (50%) of the Building Lots to the Owners other than the Declarant, not less than thirty-three percent (33%) of the members of the Executive Board shall be elected by the Owners other than the Declarant.

Upon the termination of the Period of Declarant Control, the Owners shall elect the Executive Board of at least three (3) members, at least a majority of whom shall be Owners. The Association shall have the ability to lien for assessments pursuant to Section 68 Pa. C.S.A. §5315 and lien any lot for failure of the owner to pay the assessment levied for maintenance, repair and/or structural improvement of any stormwater basin or facility located in the Restricted Open Space as well as for the repair and/or structural improvement of the stormwater basin or facility located partially on Lot 20 in addition to any and all fees required to be paid to maintain the Restricted Open Space and the trail system within the restricted open space including, but not limited to, those fees required for mowing or cutting grass, mulching the trail system from time to time, insuring the Association from liability within the Restricted Open Space area and for insuring the directors/officers of the Association.

This Declaration may be amended, modified and altered in any manner by the Declarant only, by a written instrument executed by the Declarant and recorded in the Office of the Recorder of Deeds in and for Chester County, Pennsylvania and any such amendment hereto shall be binding upon each and all of the Lots until the Declarant's Period of Control has terminated. The Declarant's Period

of Control shall terminate upon the earlier of: (i) sixty days after conveyance of 75% of the Building Lots to Owners (other than the Declarant); (ii) two years after Declarant has ceased to offer their units for sale in the ordinary course of business; or (iii) two years after any development right to add new units was last exercised. After the Period of Declarant Control terminates, any amendments, modifications or alterations to the Declaration can only be made in accordance with Section 5219 of the Uniform Planned Community Act, 68 Pa. C.S.A. §5219 and Article IX above as it pertains to correcting errors on behalf of Mortgagees.

ARTICLE XI -
BUILDING LOT SEWAGE DISPOSAL REQUIREMENTS

Each Owner of a Building Lot on which an on-lot sewage disposal system is located hereby authorizes the Chester County Health Department or the code enforcement officer of the Township (the "Authorized Agent") to inspect the on-lot sewage disposal system at any reasonable time which may include a physical tour of the Lot on which an on-lot sewage disposal system is located. The Authorized Agent may establish a schedule for routine inspections to insure the proper functioning of all on-lot sewage disposal systems known to be malfunctioning or which the Authorized Agent has reason to believe, based on information provided to him, may be malfunctioning. Should any such inspections by the Authorized Agent reveal that an on-lot sewage disposal system is indeed malfunctioning, the Authorized Agent shall order action to be taken to correct the malfunction. The Owner of the Building Lot in question shall correct the malfunction, unless the correction cannot be done in accordance with the regulations of the Pennsylvania Department of Environmental Protection ("DEP"), including, but not limited to those outlined in Chapter 73 of Title 25 of the

Pennsylvania Code or is not technically or financially feasible in the opinion of the Authorized Agent and a representative of DEP, in which event, the Owner of the on-lot sewage disposal system shall take action to mitigate the malfunction. The Authorized Agent may order immediate corrective action to be taken whenever a malfunction, as determined by the Township and/or DEP, represents a serious public health or environmental threat.

Only normal domestic wastes shall be discharged into any on-lot sewage disposal system. The following shall not be discharged into such systems: (a) industrial waste; (b) automobile oil and other non-domestic oil; (c) toxic or hazardous substances or chemicals, including but not limited to, pesticides, disinfectants (excluding household cleaners), acids, paints, paint thinners, herbicides, gasoline and other solvents; and (d) clean surface or ground water including water from roof or cellar drains, springs, basement sump pumps and French drains.

Each Owner of a Building Lot on which there is a building erected served by an on-lot sewage disposal system which contains a septic tank shall have the septic tank pumped by a qualified pumper/hauler within one year of the occupancy of the building served by such septic tank. Thereafter, such Owner shall have the tank pumped at least once every three years or whenever an inspection reveals that the septic tank is filled with solids or with scum in excess of one-third (1/3rd) of the liquid depth of the tank. Receipts from the pumper/hauler shall be submitted, upon request, to the Township within the prescribed one (1) year and three (3) year pumping periods. The required pumping frequency may be increased at the discretion of the Township if the septic tank is undersized, if solids built up in the tank are above average, if the hydraulic load on the system increases significantly above average, if a garbage grinder is used in the

building, if the system malfunctions, or for other good cause shown. Upon completion of the pumping of any septic tank, the entire of the tank, if accessible, shall be inspected to determine if the baffles in the septic tank are in good working order. Any person whose septic tank baffles are determined to require repair or replacement shall first contact the Township's code enforcement officer for approval of the necessary repair.

Any person on whose Lot there is located a building served by an on-lot sewage disposal system which contains an aerobic treatment tank shall follow the operation and maintenance recommendations of the equipment manufacturer. A copy of the manufacturer's recommendations and a copy of the service agreement shall be submitted to the Township within six (6) months after installation of such system. Thereafter service receipts shall be submitted to the Township at the intervals specified by the manufacturer's recommendations. In no case may the service or pumping intervals for aerobic treatment tanks exceed those required for septic tanks.

The Township shall have the right to require additional maintenance activity which it determines may be needed, including, but not necessarily limited to, cleaning and unclogging of piping, servicing and repair of the mechanical equipment, leveling of distribution boxes, tanks and lines, removal of roots or trees, the diversion of surface water away from disposal area, and similar matters.

No person shall operate or maintain an on-lot sewage disposal system in such a manner that it malfunctions. All sewage waste shall be discharged to a treatment tank. No sewage system shall discharge untreated or partially treated sewage to the surface of the ground or into the waters of the Commonwealth of Pennsylvania, unless a permit for such discharge has been obtained from DEP.

Discharge into the surface waters of the Commonwealth will not be permitted, except for replacement of malfunctioning systems and only then if all alternative disposal systems are found to be unfeasible.

An Authorized Agent may issue written notice of violation to any Building Lot which is found to be served by a malfunctioning on-lot sewage disposal system or which is discharging sewage without a permit. Within thirty (30) days following notification by the Authorized Agent that a malfunction has been identified, the Owner of a Building Lot on which a malfunction has been identified shall make application to the Authorized Agent for a permit to repair or replace the malfunctioning system. Within ninety (90) days after initial notification by the Authorized Agent, construction of the permitted repair or replacement shall commence. Within one (1) year of the original notification by the Authorized Agent the construction shall be completed, unless seasonally or unique conditions mandate a longer period in which case the Authorized Agent shall set an extended completion date. The Authorized Agent shall have the authority to require the repair of any malfunction by the following methods: cleaning, repair or replacement of components of the existing system, adding capacity or otherwise altering or replacing the system's treatment tank, expanding the disposal area, replacing the existing disposal area, replacing a gravity distribution system with a pressurized system, replacing the system with a holding tank, or any other alternatives appropriate for the specific site.

In the event that the rehabilitation measures described above are not feasible or effective, the Owner may be required to apply to DEP for a permit to install an individual spray irrigation treatment system, or a single residence treatment and discharge system. Upon receipt of said permit, the Owner shall complete construction of the alternative system within six (6) months.

Should none of the remedies in this Section be totally effective in eliminating the malfunction of an existing on-lot sewage disposal system, the Owner shall not be absolved of responsibility for that malfunction, and shall take whatever action the Township may require as necessary to lessen or mitigate the malfunction to the extent necessary.

The provisions of this Section shall be null and void and of no further force and effect as of the effective date of the Township's enactment of an ordinance governing municipal management of on-lot subsurface sewage disposal facilities, it being intended that such ordinance shall supersede in its entirety the provisions of this Section.

This provision shall not apply to Lot 21.

ARTICLE XII - CONSERVATION EASEMENTS

The plan requires the placing of conservation easements on the restricted open space as well as Lot 21 which conservation easements are to prevent development within the restricted open space and Lot 21. To that extent, Declarants herein agree that no development, buildings, structures or improvements of any nature whatsoever shall be located within the area identified as restricted open space (Exhibit "B" attached hereto) except for those structures or improvements as required by the plan including, but not limited to, the stormwater management areas and the trail system.

Declarants further agree that that portion of Lot 21 identified on the plan as the Conservation/Flood Plain Easement shall be restricted from any further development. This restriction shall prohibit the owner of Lot 21 from placing any buildings, structures or improvements within that portion of Lot 21 that is defined as the Conservation/Flood Plain Easement area, except those improvements or structures required by the plan. Moreover, the owner of Lot 21 shall keep the

easement area in its natural vegetative state. This restriction shall not be construed as prohibiting the owner of Lot 21 from rebuilding any structures which are damaged or destroyed on Lot 21 as a result of fire, casualty, Act of God or other means. Moreover, this prohibition shall not be construed as restricting the owner of Lot 21 from building any additional accessory uses or outbuildings as permitted by the Township ordinances on that portion of Lot 21 which is located outside the Conservation/Flood Plain Easement area.

ARTICLE XIII - MISCELLANEOUS

1. SEVERABILITY. Invalidation of any one of these covenants or restrictions by judgment or court order shall in no way affect the validity of any other provisions hereof, and they shall remain in full force and effect.

2. BINDING NATURE. The provisions of this Declaration, shall, pursuant to its terms, inure to the benefit of, and bind, the Property, each Lot, (except where specifically excluded), the Declarants, all Owners and their respective heirs, administrators, executors, successors and assigns. The provisions of this Declaration shall be binding upon all occupants, tenants and subtenants of any Lot or Dwelling located within the Property. The easements, covenants and restrictions contained in this Declaration shall run with the Property and the Lots, in perpetuity.

3. SUCCESSORS AND ASSIGNS. The rights of Declarant contained herein shall inure to its benefit and bind it in its capacity as developer of the Property. All rights and easements reserved unto Declarant pursuant to this Declaration shall inure to the benefit of any successor developer of the Property who acquires the Property or a portion thereof from Declarant, provided that Declarant shall have executed a written assignment of its rights as the Declarant

hereunder, specifically referring to this Declaration and specifically assigning its rights and easements as the Declarant hereunder to such successor.

4. EXTENT OF DECLARATION. This Declaration shall apply solely to the Property and the Lots resulting from the subdivision thereof, and none of the easements, restrictions or covenants herein contained shall apply to or be binding upon or enforceable against or with respect to any other lands or real property owned by Declarant, whether contiguous or non-contiguous to the Property. Declarant shall not be liable to any person as a result of any determination by any court, board of arbitration or other judicial body that any of the restrictions or covenants contained herein are not or may not be enforceable.

5. RECORDING. This Declaration shall be recorded in the Office of the Recorder of Deeds in and for Chester County, Pennsylvania simultaneously with the recording of the Plan.

IN WITNESS WHEREOF, the Declarants, intending to be legally bound, have set their individual and/or corporate seals the day and year set forth above.

DECLARANT:

OSBORNE PLACE ASSOCIATES, INC.

Wayne C. Megill (PRES.)

By: Wayne C. Megill, President

Barbara A. Megill

Attest: Barbara A. Megill, Secretary

WITNESS:

Arthur L. Vogrin III

DECLARANT:

Suzanne L. Williamson

SUZANNE L. WILLIAMSON

COMMONWEALTH OF PENNSYLVANIA :
: SS
COUNTY OF CHESTER :

On this 24th day of March, 2000, before me, the undersigned officer, personally appeared WAYNE C. MEGILL and BARBARA A. MEGILL who acknowledged themselves to be the President and Secretary, respectively, of OSBORNE PLACE ASSOCIATES, INC. and that the seal affixed to said instrument is the corporate seal of said corporation; that they did sign and seal the instrument as such officers and by the authority of its Board of Directors and that said instrument is the free act and deed of said officers and corporation.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Notarial Seal
Donna M. Speirone, Notary Public
Birmingham Twp., Delaware County
My Commission Expires June 5, 2000
Member, Pennsylvania Association of Notaries

Notary Public

COMMONWEALTH OF PENNSYLVANIA :
: SS
COUNTY OF CHESTER :

On this 24th day of March, 2000, before me, the undersigned officer, personally appeared SUZANNE L. WILLIAMSON, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that she executed the same for the purposes herein contained.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Notarial Seal
Donna M. Speirone, Notary Public
Birmingham Twp., Delaware County
My Commission Expires June 5, 2000

Notary Public

EXHIBIT "A"

All that certain parcel of land, situate in Pocopson Township, Chester County, Pennsylvania, as shown on the Final Subdivision Plan of Osborne Place, prepared by Crossan-Raimato, Inc., Professional Land Surveyors, dated July 7, 1998, last revised January 28, 2000 and recorded in Chester County, Pennsylvania as Plan No. _____, bounded and described as follows:

Beginning at a point at or near the centerline of Lenape-Unionville Road (S.R. 3025), being the southeasterly corner of the herein described tract and a corner of lands now or formerly of Sally E. Flynn; thence leaving the said point of beginning, along or near the centerline of the said Lenape-Unionville Road the following three courses and distances: 1.) South 67° 59′ 22″ West 332.25′ to a point; 2.) South 65° 38′ 51″ West, crossing an unnamed tributary to Pocopson Creek, 161.58′ to a point; 3.) South 60° 43′ 57″ West 732.61′ to a point being a corner of lands now or formerly of Barrie Hazzard; thence leaving Lenape-Unionville Road, along the said lands now or formerly of Barrie Hazzard, North 02° 08′ 41″ West, crossing over an iron pin (found) at 26.79′ distant, a total distance of 162.80′ to a stone (found) marking a corner of lands now or formerly of M. Cloud and Alice Y. Reynolds, Co-Trustees for Reynolds Trust; thence partly along the said lands now or formerly of M. Cloud and Alice Y. Reynolds, Co-Trustees for Reynolds Trust, and partly along Red Lion Road (S.R. 3027), North 03° 25′ 43″ West, crossing over Pocopson Creek, 1488.19′ to a point at or near the intersection of the centerline of Marlboro Road with the centerline of Red Lion Road; thence continuing along or near the centerline of the said Red Lion Road the following three courses and distances: 1.) North 00° 49′ 33″ West 137.36′ to a point of curvature; 2.) by a curve to the right having a radius of 400.00′, through a central angle of 23° 13′ 57″, an arc distance of 162.19′ to a point of tangency; 3.) North 22° 24′ 25″ East 187.80′ to a point being a

corner of lands now or formerly of Samuel A. and Judith F. Cousins; thence leaving Red Lion Road, along the said lands now or formerly of Samuel A. and Judith F. Cousins North 80° 30′ 00″ East, crossing over an iron pipe (found) at 18.11′ distant, crossing over an unnamed tributary to Pocopson Creek, and also crossing over an iron pipe (found) at 2175.44′ distant, a total distance of 2193.44′ to a point at or near the centerline of Larkin Baily Road (T-432); thence along the said Larkin Baily Road the following four courses and distances: 1.) South 04° 37′ 32″ West, crossing and recrossing the westerly cartway edge of the said Larkin Baily Road, 559.35′ to a point; 2.) South 36° 40′ 14″ West, recrossing an unnamed tributary to Pocopson Creek, also crossing and recrossing the northwesterly cartway edge of Larkin Baily Road, 429.00′ to a point; 3.) South 60° 35′ 45″ West, crossing and recrossing the southeasterly cartway edge, and the southeasterly right-of-way line of Larkin Baily Road, 429.00′ to a point; 4.) South 52° 09′ 36″ West 165.00′ to a point; thence partly along the same Larkin Baily Road and partly along Haines Mill Road (T-440), passing through an intersection, South 58° 05′ 55″ West 396.39′ to a point at or near the centerline of Haines Mill Road, being a corner of the aforementioned lands now or formerly of Sally E. Flynn; thence leaving the said Haines Mill Road, along the said lands now or formerly of Sally E. Flynn, South 07° 39′ 18″ East, crossing over an iron pin (found) at 18.00′ distant, recrossing Pocopson Creek, and crossing over an iron pin (found) at 498.64′ distant, a total distance of 511.75′ to the first mentioned point and place of beginning.

Containing within the said described metes and bounds: 72.6055 Acres of land, be the same, more or less.

Subject to any easements, rights-of-way, notes, or restrictions, of record, and/or as shown on the recorded Subdivision Plan.

EXHIBIT "B"

All that certain parcel of land, situate in Pocopson Township, Chester County, Pennsylvania, being Restricted Open Space as shown on the Final Subdivision Plan of Osborne Place, prepared by Crossan-Raimato, Inc., Professional Land Surveyors, dated July 7, 1998, last revised January 28, 2000, and recorded in Chester County, Pennsylvania as Plan No. _____, bounded and described as follows:

Beginning at a point on the westerly side of Larkin Baily Road (T-432), 25' from the centerline thereof, being the northeasterly corner of the herein described parcel, the said point of beginning being further located South 80° 30' 00" West 25.90' from a point at or near the centerline of the said Larkin Baily Road, being a corner of lands now or formerly of Samuel A. and Judith F. Cousins and the original northeasterly corner of the subdivision of Osborne Place; thence leaving the said point of beginning, along the northwesterly side of Larkin Baily Road the following eleven courses and distances: 1.) South 05° 38' 46" West 117.91' to a point; 2.) South 02° 10' 14" West 332.40' to a point of curvature; 3.) crossing an unnamed tributary to Pocopson Creek by a curve to the right having a radius of 225.00', through a central angle of 34° 11' 42", an arc distance of 134.28' to a point of tangency; 4.) South 36° 21' 56" West, crossing a 20' wide access easement for a stormwater management area, 222.79' to a point; 5.) South 33° 52' 59" West 102.31' to a point of curvature; 6.) by a curve to the right having a radius of 175.00', through a central angle of 36° 01' 39", an arc distance of 110.04' to a point of tangency; 7.) South 69° 54' 38" West 95.15' to a point of curvature; 8.) by a curve to the left having a radius of 575.00', through a central angle of 17° 54' 46", an arc distance of 179.77' to a point of tangency; 9.) South 51° 59' 52" West, crossing a 20' wide access easement for a stormwater management area, 337.80' to a point; 10.) South 63° 04' 00" West

78.07' to a point; 11.) South 59° 07' 01" West 161.74' to a point being the southwesterly corner of the herein described parcel and the southeasterly corner of Lot No. 21 on the above referenced plan; thence leaving the said Larkin Baily Road, along the said Lot No. 21 North 01° 36' 01" West 365.15' to a point being the southwesterly corner of Lot No. 15 on the above referenced plan; thence partly along the said Lot No. 15 and partly along Lot No. 14 South 88° 28' 20" East 202.00' to a point being a corner of Lot No. 14 and a corner of an easement for a stormwater management area; thence continuing along the said Lot No. 14 and along the northwesterly side of the said easement for a stormwater management area North 56° 18' 39" East 137.81' to a point being the southwesterly corner of Lot No. 13; thence partly along Lot No. 13, partly along Lot No. 12, and partly along the northwesterly side of the said easement for a stormwater management area, North 40° 27' 15" East 529.45' to a point being a corner of Lot No. 12 and in line with an easement for a stormwater management area; thence partly along the said Lot No. 12, partly along Lot No. 11, and partly along the said easement for a stormwater management area North 35° 33' 22" West, crossing a 20' wide drainage easement, 486.89' to a point in line with the aforementioned lands now or formerly of Samuel A. and Judith F. Cousins; thence along the said lands now or formerly of Samuel A. and Judith F. Cousins North 80° 30' 00' East, recrossing an unnamed tributary to Pocopson Creek, 705.50' to the first mentioned point and place of beginning.

Containing within the said described metes and bounds: 12.5398 Acres of land, be the same, more or less.

EXHIBIT "C"

All that certain parcel of land, situate in Pocopson Township, Chester County, Pennsylvania, being Lot No. 22 as shown on the Final Subdivision Plan of Osborne Place, prepared by Crossan-Raimato, Inc., Professional Land Surveyors, dated July 7, 1998, last revised January 28, 2000 and recorded in Chester County, Pennsylvania as Plan No. _____, bounded and described as follows:

Beginning at a point on the northerly side of Lenape-Unionville Road (S.R. 3025), 37.5' from the centerline thereof, being in line of lands now or formerly of Sally E. Flynn, the said point of beginning being further located North 07° 39' 18" West 38.71' from a point at or near the centerline of Lenape-Unionville Road, being the southwesterly corner of the said lands now or formerly of Sally E. Flynn; thence leaving the said point of beginning, along the northerly side of the said Lenape-Unionville Road the following three courses and distances: 1.) South 67° 59' 22" West 342.61' to a point; 2.) South 65° 38' 51" West, crossing a tributary to Pocopson Creek, 163.96' to a point; 3.) South 60° 43' 57" West 715.01' to a point in line of lands now or formerly of Barrie Hazzard; thence along the said lands now or formerly of Barrie Hazzard North 02° 08' 41" West 120.67' to a stone (found) marking a corner of lands now or formerly of M. Cloud and Alice Y. Reynolds, Co-Trustees for Reynolds Trust; thence along the said lands now or formerly of M. Cloud and Alice Y. Reynolds, Co-Trustees for Reynolds Trust, North 03° 25' 43" West 675.74' to a point on the southeasterly side of Red Lion Road (S.R. 3027), 37.5' from the centerline thereof; thence along the southerly side of the said Red Lion Road North 31° 58' 09" East 57.63' to the southwesterly end of a junction curve joining the southeasterly side of the said Red Lion Road, with the southerly side of Haines Mill Road (T-440), at 50' wide; thence by a curve to the right having a radius of 25.00', through a central angle

of 45° 04′ 42″, an arc distance of 19.67′ to a point of tangency on the southerly side of the said Haines Mill Road; thence along the said southerly side of the said Haines Mill Road the following seven courses and distances: 1.) North 77° 02′ 51″ East 285.94′ to a point; 2.) North 74° 14′ 32″ East, crossing Pocopson Creek, 125.72′ to a point of curvature; 3.) by a curve to the right having a radius of 375.00′, through a central angle of 20° 07′ 18″, an arc distance of 131.70′ to a point of tangency; 4.) South 85° 38′ 11″ East 113.31′ to a point; 5.) South 79° 04′ 58″ East 136.21′ to a point of curvature; 6.) by a curve to the left having a radius of 325.00′, through a central angle of 44° 29′ 22″, an arc distance of 252.36′ to a point of tangency; 7.) North 56° 25′ 41″ East 14.43′ to a point in line of the aforementioned lands now or formerly of Sally E. Flynn; thence along the said lands now or formerly of Sally E. Flynn South 07° 39′ 18″ East, recrossing Pocopson Creek, 446.67′ to the first mentioned point and place of beginning.

Containing within the said described metes and bounds: 16.2008 Acres of land, be the same, more or less.

Subject to any easements, rights-of-way, notes, or restrictions, of record, and/or as shown on the recorded Subdivision Plan.

EXHIBIT "D"

All that certain parcel of land, situate in Pocopson township, Chester County, Pennsylvania, as shown on the Final Subdivision Plan of Osborne Place, prepared by Crossan-Raimato, Inc., Professional Land Surveyors, dated July 7, 1998, last revised January 28, 2000, and recorded in Chester County, Pennsylvania as Plan No. _____, bounded and described as follows:

Beginning at a point in line of the northern property line of the subdivision of Osborne Place, in line of lands now or formerly of Samuel A. and Judith F. Cousins, the said point of beginning being further located North 80° 30' 00" East 64.18' from a point at or near the centerline of Red Lion Road, being a corner of the subdivision of Osborne Place and a corner of lands now or formerly of Samuel A. and Judith F. Cousins; thence along the said lands now or formerly of Samuel A. and Judith F. Cousins, along the line of Lots 3 through 11 on the above referenced plan, and along Restricted Open Space on the above referenced plan, North 80° 30' 00" East 1643.05' to a point; thence South 09° 30' 00" East, through the said Restricted Open Space, 20.00' to a point; thence passing partly through the said Restricted Open Space, passing through Lot 11, Lot 10, Lot 9, Lot 8, Lot 7, Lot 6, Lot 5, Lot 4, and partly through Lot 3 on the above referenced plan South 80° 30' 00" West 1633.91' to a point; thence through Lot 3 North 34° 03' 55" West 21.99' to the first mentioned point and place of beginning.

Containing within the said described metes and bounds: 0.7523 Acre of land, be the same, more or less.

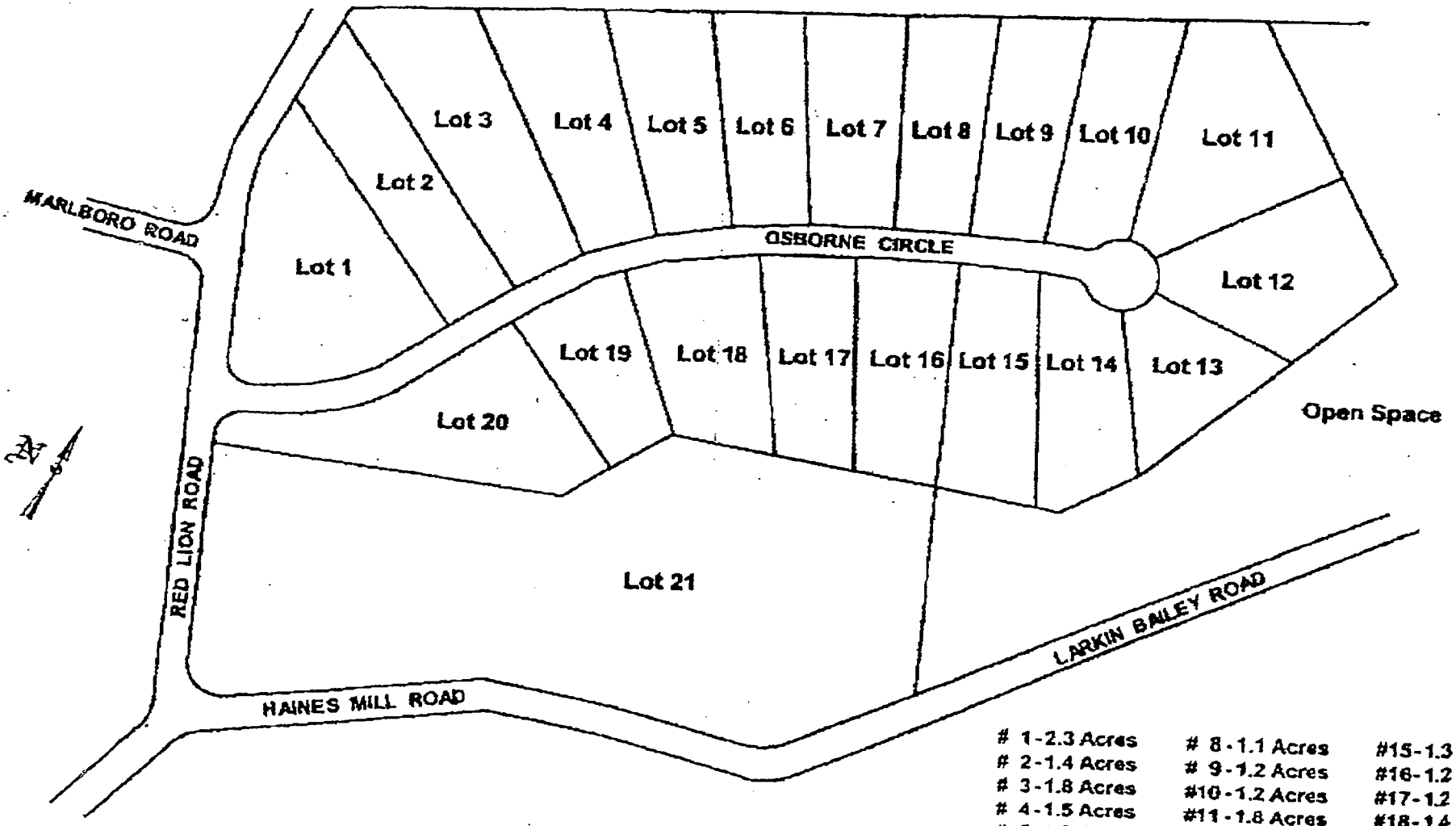
EXHIBIT "E"

All that certain parcel of land, situate in Pocopson Township, Chester County, Pennsylvania, being an easement for stormwater management area #2 on Lot 20 and Lot 21, as shown on the Final Subdivision Plan of Osborne Place, prepared by Crossan-Raimato, Inc., Professional Land Surveyors, dated July 7, 1998, last revised Jan. 28,2000, and recorded in Chester County, Pennsylvania as Plan-No. _____, bounded and described as follows:

Beginning at a point on the easterly side of Red Lion Road (S.R. 3027), being the southerly end of a junction curve joining the easterly side of the said Red Lion Road with the southerly side of Osborne Circle, also a corner of Lot 20 as shown on the above referenced plan; thence leaving the said point of beginning, along the said junction curve by a curve to the right having a radius of 25.00', through a central angle of 89° 04' 26", an arc distance of 38.87' to a point of tangency on the southerly side of the said Osborne Circle; thence along the southerly side of the said Osborne Circle the following two courses and distances: 1.) North 86° 34' 17" East 38.66' to a point of curvature; 2.) by a curve to the left having a radius of 375.00', through a central angle of 37° 30' 00", an arc distance of 245.44' to a point; thence leaving the said Osborne Circle, through Lot 20 the following three courses and distances: 1.) North 74° 55' 23" East 35.58' to a point; 2.) South 51° 30' 32" East 105.82' to a point; 3.) South 17° 58' 59" East 80.00' to a point; thence partly through Lot 20 and partly through Lot 21 on the above referenced plan, South 26° 00' 37" West 46.08' to a point; thence through the said Lot 21 the following two courses and distances: 1.) South 89° 30' 01" West 86.94' to a point; 2.) South 08° 32' 48" West 77.85' to a point on the limit of the flood plain conservation district (approximate) and drainage easement; thence continuing along the said limit of the flood plain conservation district (approximate) and drainage easement the following two courses and distances: 1.) North 52° 00' 49" West, through Lot 21, 125.09' to a point; 2.) North 78° 41' 32" West, partly through Lot 21 and partly through the aforementioned Lot 20, 212.56' to a point on the easterly side of the aforementioned Red Lion Road; thence along the easterly side of Red Lion Road, North 04° 22' 12" West 13.48' to the first mentioned point and place of beginning.

Containing within the said described metes and bounds: 1.1629 Acres of land, be the same, more or less.

OSBORNE PLACE



# 1 - 2.3 Acres	# 8 - 1.1 Acres	#15 - 1.3 Acres
# 2 - 1.4 Acres	# 9 - 1.2 Acres	#16 - 1.2 Acres
# 3 - 1.8 Acres	#10 - 1.2 Acres	#17 - 1.2 Acres
# 4 - 1.5 Acres	#11 - 1.8 Acres	#18 - 1.4 Acres
# 5 - 1.2 Acres	#12 - 1.6 Acres	#19 - 1.0 Acres
# 6 - 1.1 Acres	#13 - 1.0 Acres	#20 - 2.0 Acres
# 7 - 1.1 Acres	#14 - 1.2 Acres	#21 - 10 Acres

AGREEMENT

THIS AGREEMENT dated this day of , 2004, by and between *Pocopson Township,* of Chester County, Pennsylvania ("Township") and ***Little Washington Wastewater Company, dba Suburban Wastewater Company,*** a Pennsylvania corporation with a business address at 762 Lancaster Avenue, Bryn Mawr, Pennsylvania 19010 (the "Company").

WHEREAS, the ***Corrine Village Wastewater Treatment Facility*** ("System") is located in Pocopson Township, Chester County, Pennsylvania;

WHEREAS, the company, a public utility authorized under the laws of Pennsylvania, wishes to acquire and operate the System and has or will execute an Agreement of Sale to that effect;

WHEREAS, the Township pursuant to that Agreement of Sale intends to prepare and submit to the Pennsylvania Department of Environmental Protection ("PaDEP") an amendment to its sewage facilities plan ("Act 537 Plan") pursuant to the Sewage Facilities Act that provides for operation of the System by the Company;

NOW, THEREFORE, in order to allow the Township to assess the effectiveness of and carry out its responsibilities under its Act 537 Plan the parties hereto agree as follows:

1. The Company shall provide and/or make available to the Township on a schedule to be agreed upon, copies of all discharge reports and operations reports required by PaDEP or the Chester County Department of Health including, but not limited to Daily Monitoring Reports, Monthly Discharge Monitoring Reports (DMR's, Quarterly Operations Reports, and Quarterly Groundwater Monitoring Reports. The Company shall also provide and/or make available to the Township such other existing reports and data relating to compliance of the System with the. Sewage Facilities Act and the Clean Streams Law as the Township may, from time to time, request.

2. The Company shall provide to the Township access to the Sewage Treatment System at reasonable times and on reasonable notice for the purpose of allowing the Township to inspect the facilities and assess operations and compliance with applicable requirements and the Township's Act 537 Plan.

3. The Company agrees that if it should seek to expand or alter the capacity of the System or its service territory, it shall confer with the Township with respect to such request and only do so consistent with the Township's Act 537 Plan.

4. In the event that the Township determines that operation and maintenance of the system is not in accordance with the Township's Act 537 Plan, the Township, following notice to the Company and good-faith discussions, may take such action as is authorized under the Township Municipal Code, the Clean Streams Law and/or Act 537.

5. The parties recognize that Section 203 of the Clean Streams Law, 35 P.S. § 691.203, authorizes PaDEP to order certain steps provided PaDEP makes a finding that such steps are necessary to properly provide for the prevention of pollution or prevention of a public health nuisance.

The foregoing is without waiver by any party hereto of any defense or right to challenge or appeal any finding or order.

IN WITNESS WHEREOF, and intending to be legally bound, the parties have executed this Agreement as of the day and year first above written.

LITTLE WASHINGTON WASTEWATER COMPANY D/B/A SUBURBAN WATER COMPANY	POCOPSON TOWNSHIP
By: Anthony J. Donatoni President	By: Board of Supervisors Pocopson Township

SECTION G

EVANS MILL ENVIRONMENTAL, INC.

CORRESPONDENCE

AQUA Pennsylvania.

Aqua Pennsylvania, Inc.
762 W. Lancaster Avenue
Bryn Mawr, PA 19010

www.aquapennsylvania.com

January 26, 2004

James B. Brandolini
J.B. Brandolini, Inc.
1200 Burning Bush Lane
West Chester, PA 19380

Re: Water Availability
Baily Farm Subdivision
Pocopson Twp, Chester County County, Pennsylvania

Dear Mr. Brandolini;

In response to our conversation of January 14, 2004, this letter will advise you that the above referenced project is not situated within Aqua Pennsylvania's current service territory. In order to serve the project, Aqua Pennsylvania will need to expand its service territory to include this area in the Company's franchised service territory.

Aqua Pennsylvania would be pleased to work with your company and Pocopson Township to furnish water service to your proposed development. To accomplish this, Aqua Pennsylvania will require written confirmation from Pocopson Township that the Company can expand its current service territory, in Pocopson Township, to include this project. A written request from you office stating the desire to have Aqua Pennsylvania serve this project should be forwarded along with the letter from Pocopson Township. Upon receipt of these letters, Aqua Pennsylvania will apply to the Pennsylvania Public Utility Commission for the additional chartered service territory required to serve this project.

Water service to the proposed development would be provided by a main extension from Aqua Pennsylvania's water main in Lenape at the intersection of Wawaset Road. Your Company would install this main extension under a standard Builders Extension Agreement with a pre-qualified contractor. Upon completion of the water main project and all other requirements under the agreement, Aqua Pennsylvania would accept dedication of the water main, fire hydrants and service connections (main to curb).

I look forward to working with you on this project. If you have any questions related to this project, please feel free to call me (610) 645-4230.

Sincerely,

Bernard J. Stromberg, Jr.
New Business Representative

1271-00
PMLD FOLDER

Pennsylvania Department of Environmental Protection

Lee Park, Suite 6010
555 North Lane
Conshohocken, PA 19428

December 9, 2003

Southeast Regional Office

610-832-6131
Fax 610-832-6133

Ann Lane
Evans Mill Environmental, Inc.
PO Box 735
Uwchland, PA 19480

Re: ~~Application for Planning~~ Modules
Baily Farm Subdivision
K - Treatment + Disposal only Code No. 1-15946-~~131~~-3KLM
L - Perm Rsrvd Pocopson Township, Chester County
M - Plan Revised

Dear Ms. Lane:

On November 25, 2003, we received your application for Sewage Facilities Planning Modules for a 77 lot residential subdivision. This project is located on the northwest corner of Lenape-Unionville Road and Locust Grove Road, in Pocopson Township, Chester County.

This project is proposing sewage disposal by land application under a Department permit. Therefore, evaluations of site suitability consistent with the Pennsylvania Code, Title 25, Chapter 71, Section 71.62, must be completed by the project sponsor's soil scientist and registered professional geologist and confirmed by representatives from the Department. In addition, because the municipality will be obligated to assure the proper operation and maintenance of the proposed system, the municipality must also be given the opportunity to observe all field evaluations.

Please contact our regional soil scientist, Nancy Sansoni, at 610-832-6103 to schedule the preliminary field evaluation. In preparation for this field evaluation, the following information should be submitted to the Department and the municipality at least two weeks before the scheduled evaluation:

1. Please provide a preliminary narrative that includes the land application alternatives being explored, the proposed ownership and operation of the system, the status of the municipality's relationship to the project, and any known inconsistencies with the municipality's existing Official Act 537 Plan.

2. Please provide a site plan of the area that shows soil types and locations of any previous testing conducted on the site.

3. Please provide the results of any previous soils testing conducted on the site.

4. Please provide a copy of a USGS topographic map with the area of the proposed land development project plotted and labeled.

5. Please provide driving directions to the project site.

6. Please provide written documentation that the municipality has been invited to observe the field evaluation.

If the requested information is not submitted to the Department and the municipality in time for our review, the field evaluation may be rescheduled.

Upon completion of the soil scientist's field evaluations, the project sponsor's soil scientist and registered professional geologist must determine what additional testing is needed to identify restrictive permeability in the soil layer, the geologic layer, and the hydraulic layer, as required by Chapter 71, Section 71.62(c)(1)(i).

1. Please contact the Department and the municipality to schedule the additional permeability testing, if required.

2. Please provide written documentation to the Department showing that the municipality has been invited to observe this additional permeability testing. In preparation for the permeability testing, specific details of the proposed testing procedures must be submitted to the Department and the municipality at least two weeks before the scheduled permeability testing.

While time constraints and other commitments preclude the Department from providing extensive advisory reviews, we will advise you in a timely manner if we do not concur with the general testing procedures. The applicant may be requested to provide documentation to establish the validity of any testing procedures, and the project may be delayed for an extended period of time while we are evaluating the proposed procedures. Municipal concerns over the testing procedures may also delay the field evaluation.

The results of the site suitability field testing and the additional permeability testing, if required, must be incorporated into Sections K and L of the attached Component 3 Sewage Facilities Planning Modules before submission to the municipality. A preliminary hydrogeologic evaluation must also be included to meet the requirements of Sections M and N. Please be advised that concurrence with the proposed testing procedures does not imply acceptance of specific test results. Based on the data submitted with the completed Sewage Facilities Planning Modules, either the Department or the municipality may require additional testing.

When completing the planning modules, particular attention should be paid to the attached guidance for Section H, concerning the evaluation of alternative methods of sewage disposal. Technical alternatives must be evaluated consistent with the Pennsylvania Code, Title 25, Chapter 71, Section 71.52(a)(3) and (a)(4) and Section 71.65(a)(1). Alternatives to establish specific responsibilities for the operation and maintenance of the proposed system must also be evaluated, consistent with Section 71.52(a)(5), 71.65(a)(2), and 71.72.

Land application projects must be reviewed by the Department's planning staff, regional soil scientist, and registered professional geologist. To expedite our review, please submit three copies of the completed planning modules and all attachments

Since your project proposes the use of community sewerage facilities, an evaluation that establishes specific responsibilities for operation and maintenance of the proposed system as per Chapter 71, Section 71.65(a)(2) is required.

Sewage Facilities Planning Module forms are now available as MS Word Form Fields files directly from the Department's website at www.dep.state.pa.us under Subjects/Act 537 Sewage Facilities Program/Act 537 Sewage Facilities Electronic Forms/Act 537, Sewage Facilities Planning Packages.

Please select the following forms for this project and enter the above referenced DEP Code Number on the first page of each form. Projects submitted without coding may be subject to delays, including the assignment of additional forms or different planning module packages.

Sewage Facilities Planning Module Transmittal Letter, Form 3800-FM-WSWM0355
Sewage Facilities Planning Module Resolution, Form 3980-FM-WSWM0356
Sewage Facilities Planning Module Component 3, Form 3800-FM-WSWM0353

- Instructions
- Form

Sewage Facilities Planning Module Component 4

- 4A-Municipal Planning Agency Review, Form 3800-FM-WSWM0362A
- 4B-County Planning Agency Review, Form 3800-FM-WSWM0362B
- 4C-County or Joint Health Department Review, Form 3800-FM-WSWM0362C

If you are unable to print the forms from our website, please contact us at the above number.

The Department has conducted a preliminary screening of the location of your proposed new land development for the possible existence of rare, endangered or threatened species protected by Pennsylvania and Federal law using the Pennsylvania Natural Diversity Inventory. The Pennsylvania Natural Diversity Inventory identification number for this project is N133385. No

potential conflicts have been identified. Please include a copy of the enclosed PNDI results with your planning module submission.

Please pay specific attention to Item No. 10, regarding public notification requirements for all projects that involve the resolution of a conflict between the proposed alternative and the consistency requirements contained in Chapter 71, Section 71.21(a)(5)(i)-(iii). The public notice must specifically identify each conflict.

In order to meet the requirements of this section, documentation of public notification is required for the following projects:

1. Publication is required for all projects that are inconsistent with Chapter 94 municipal wasteload management plans submitted to the Department by the permittees of the proposed collection, conveyance, and treatment facilities.

2. Publication is required for all projects located in special protection watersheds.

3. Publication is required for all projects that have potential conflicts identified by the Pennsylvania Natural Diversity Inventory, whether or not the identified conflicts have been resolved. The public notice should only identify that a potential conflict exists. Specific species that are rare, endangered or threatened should not be identified in the public notice.

4. Publication is required for all projects where the Pennsylvania Historical and Museum Commission has identified conflicts or high probabilities of conflicts with historical or archeological resources.

5. Publication is required for all projects proposing encroachments on wetlands.

6. Publication is required for all projects that have identified conflicts with prime agricultural land policies. The conflict may be identified by the applicant, by the municipality, or by one of the reviewing agencies.

7. Publication is required for all projects that have conflicts with municipal or county comprehensive plans.

Please note that Section 71.31(e) requires the municipality to submit written documentation that the appropriate agency has received, reviewed, and concurred with the method proposed to resolve identified inconsistencies. Conflicts must be resolved prior to municipal adoption of a planning module.

Please note that up-front planning module review fees are now required. However, the review fee is not a completeness item on the municipality's checklist attached to the planning module. As part of the Department's completeness review, we will advise the municipality and send an invoice to the applicant when planning modules are submitted without payment, or if the submitted payment is incorrect. No further processing will be completed until the applicant has paid the appropriate fee.

If you have any questions, please call 610-832-6131 and ask for a Sewage Planning Specialist.

Sincerely,

Sewage Planning Section
Water Management

Enclosures: PNDI Search Results

cc: Chester County Health Department
Chester County Planning Commission
Pocopson Township
J.B. Brandolini, Inc.
Ms. Sansoni
Planning Section

PNDI Internet Database Search Results

PNDI Search Number: N133385
Search Results For krivers@state.pa.us
Search Performed By: Kimberleigh Rivers On 12/2/03 8:58:42 AM
Agency/Organization: Department of Environmental Protection
Phone Number: (610) 832-6127
Search Parameters: Quad - 397586; North Offset - 5.0; West Offset - 7.0; Acres - 493.92
Project location center (Latitude): 39.90245
Project location center (Longitude): 75.67491
Project Type: Real Estate Development/Residential Development

Print this page using your Internet browser's print function and keep it as a record of your search.

No conflicts with ecological resources of special concern are known to exist within the specified search area.

PNDI is a site specific information system, which describes significant natural resources of Pennsylvania. This system includes data descriptive of plant and animal species of special concern, exemplary natural communities and unique geological features. PNDI is a cooperative project of the Department of Conservation and Natural Resources, The Nature Conservancy and the Western Pennsylvania Conservancy. This response represents the most up-to-date summary of the PNDI data files and is valid for 1 year. An absence of recorded information does not necessarily imply actual conditions on-site. A field site survey may reveal previously unreported populations of rare species, their critical habitats, or other unique natural resources.

Legal authority for Pennsylvania's biological resources resides with three administrative agencies. The handout entitled Pennsylvania Biological Resource Management Agencies, outlines which species groups are managed by these agencies. Feel free to contact our office if you have questions concerning this response or the PNDI system, and please refer to the PNDI Search Number at the top of this page in future correspondence concerning this project.

New Search using inches on a Quad
New Search using Latitude and Longitude
PNDI Search Home
PNDI Search Welcome

3930-PM-WM0041 2/2001

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATERSHED MANAGEMENT
BUREAU OF WATERWAYS ENGINEERING

DEP-RECEIVED
SOUTHEAST REGION
NOV 04 2003

1500893

FOR OFFICIAL USE ONLY

PNDI Screening Reviewer Kim Rivers
Date 11-6-03
Phone No. 610 832-6127

SUPPLEMENT NO. 1
PENNSYLVANIA NATURAL DIVERSITY INVENTORY SEARCH FORM

This form provides site information necessary to perform a computer screening for species of special concern listed under the Endangered Species Act of 1973, the Wild Resource Conservation Act, the Pennsylvania Fish and Boat Code or the PA Game and Wildlife Code. Records regarding species of special concern are maintained by PA DCNR in a computer data base called the "Pennsylvania Natural Diversity Inventory" (PNDI). Results from this search are not intended to be a conclusive compilation of all potential special concern resources located within a proposed project site. On-site biological surveys may be recommended to provide a definitive statement on the presence or absence, or degree of natural integrity of any project site. Results of this PNDI search are valid for one year.

Please complete the information below, attach an 8½" x 11" photocopy (DO NOT REDUCE) of the portion of the U.S.G.S. Quadrangle Map that identifies the project location and outlines the approximate boundaries of the project and mail to the appropriate DEP regional office or delegated County Conservation District prior to completing a Chapter 105 environmental assessment or any other DEP permit application. (SEE REVERSE SIDE FOR LIST OF OFFICES AND ADDRESSES).

NAME: Robert Wuerth, EVANS MILL ENVIRONMENTAL INC.

ADDRESS: P.O. BOX 735

101 FELLOWSHIP ROAD

UWCHLAND, PA 19480

PHONE: (610) 458-8300

COUNTY: Chester

TWP./MUNICIPALITY: Pocopson Township

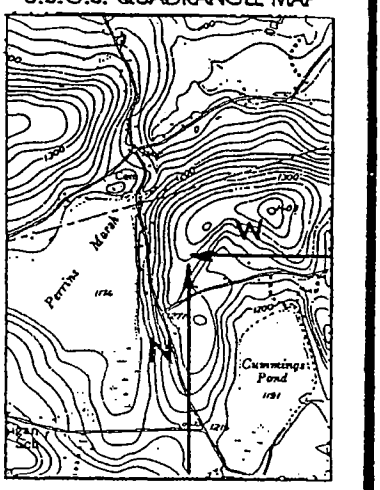
U.S.G.S. 7½ Minute Quadrangle

Unionville, PA 1940

PROJECT DESCRIPTION AND SIZE (Briefly describe entire area relevant to your project, including acreage.)

123 acres on the NW corner of Lenape-Unionville Road and Locust Grove Road (EME#1541-00)

U.S.G.S. QUADRANGLE MAP



North (Up) 5 inches

West (to the left) 7 inches

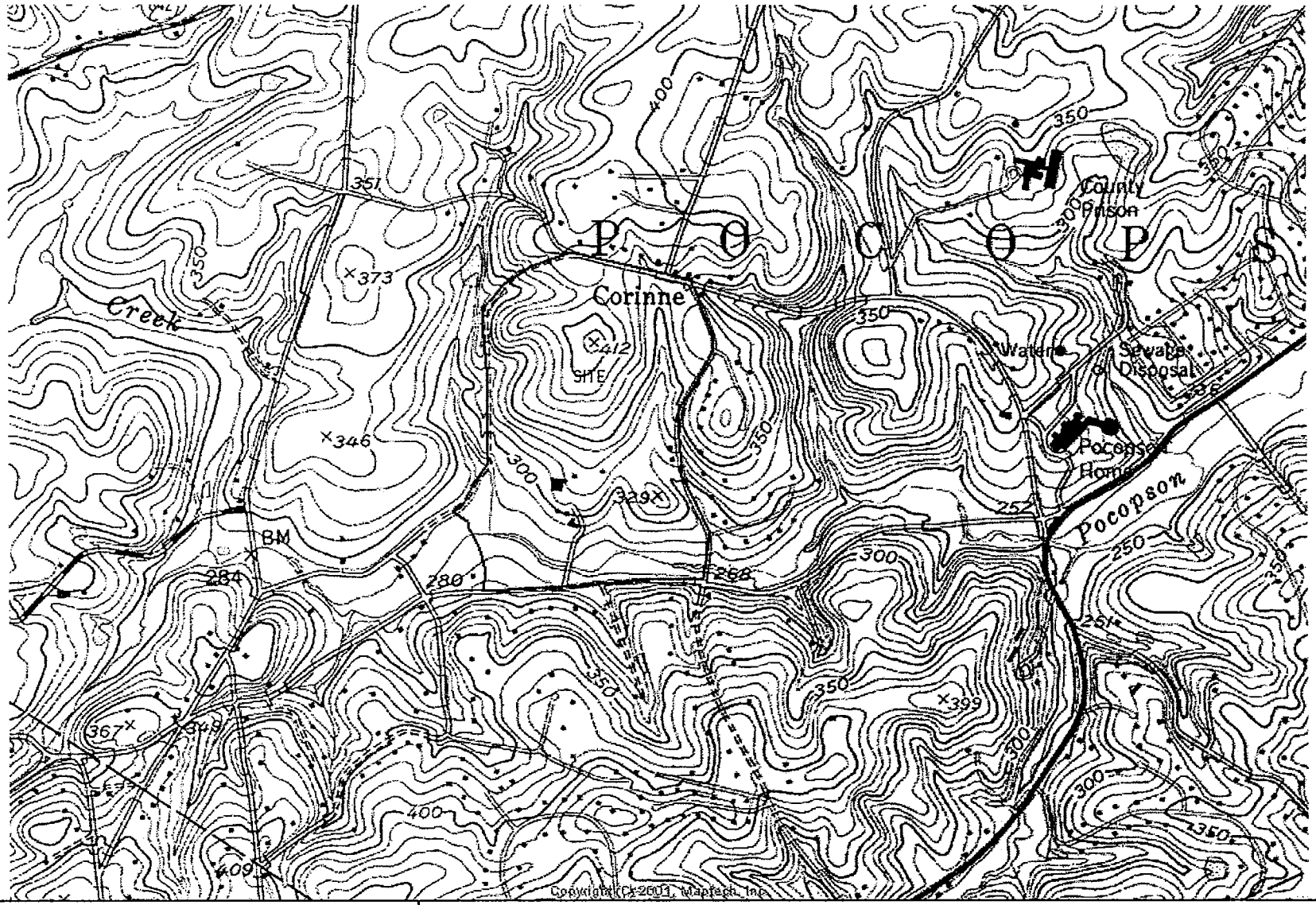
INDICATE PROJECT LOCATION TO THE NEAREST ONE TENTH INCH MEASURING FROM THE EDGE OF THE MAP IMAGE FROM THE LOWER RIGHT CORNER.

FOR OFFICIAL USE ONLY

SCREENING RESULTS - Follow the directions of the checked block.

☑ No potential conflicts were encountered during the PNDI inquiry. Include this form and the PNDI receipt with your Chapter 105 environmental assessment or other DEP permit application submissions.

☐ Potential conflicts must be resolved by contacting the natural resource agencies listed on the PNDI receipt. Please provide a copy of this form and the PNDI receipt along with a brief description of your project to the listed agency for consultation and recommendations. Include this form, the printed PNDI search results and the natural resource agency's written recommendation with your Chapter 105 environmental assessment or other DEP permit application submissions.



EVANS MILL ENVIRONMENTAL, INC.
P.O. Box 735
101 Fellowship Road
Uwchland, PA 19480
(610) 458-8300
(610) 458-7168 FAX

BAILEY FARM

Lenape-Unionville & Locust Grove Roads; Pocopson Township; Chester County, PA

U. S. G. S. QUADRANGLE - UNIONVILLE, PA

Scale: 1" = 2,000'	Date: October 30, 2003	By: Aml	EME No: 1541-00

PNDI Internet Database Search Results

PNDI Search Number: N132017
Search Results For krivers@state.pa.us
Search Performed By: Kimberleigh Rivers On 11/6/03 11:32:51 AM
Agency/Organization: Department of Environmental Protection
Phone Number: (610) 832-6127
Search Parameters: Quad - 397586; North Offset - 5.0; West Offset - 7.0; Acres - 123
Project location center (Latitude): 39.90245
Project location center (Longitude): 75.67491
Project Type: Real Estate Development/Residential Development

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PNDI is a site specific information system, which describes significant natural resources of Pennsylvania. This system includes data descriptive of plant and animal species of special concern, exemplary natural communities and unique geological features. PNDI is a cooperative project of the Department of Conservation and Natural Resources, The Nature Conservancy and the Western Pennsylvania Conservancy. This response represents the most up-to-date summary of the PNDI data files and is valid for 1 year. An absence of recorded information does not necessarily imply actual conditions on-site. A field site survey may reveal previously unreported populations of rare species, their critical habitats, or other unique natural resources.

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New Search using inches on a Quad
New Search using Latitude and Longitude
PNDI Search Home
PNDI Search Welcome

Commonwealth of Pennsylvania
Pennsylvania Historical and Museum Commission
Bureau for Historic Preservation
Commonwealth Keystone Building, 2nd Floor
400 North Street
Harrisburg, PA 17120-0093

December 1, 2003

Robert Wuerth
Evans Mill Environmental, Inc.
101 Fellowship Road
Uwchlan, PA 19480

TO EXPEDITE REVIEW USE
BHP REFERENCE NUMBER

Re: File No. ER 2000-2645-029-D
DEP, ACT 537 NPDES and E & S, Bailey Farm,
Pocopson Twp., Chester Co.

Dear Mr. Wuerth:

The Bureau for Historic Preservation has reviewed the above named project under the authority of the Environmental Rights amendment, Article 1, Section 27 of the Pennsylvania Constitution and the Pennsylvania History Code, 37 Pa. Cons. Stat. Section 500 et seq. (1988). This review includes comments on the project's potential effect on both historic and archaeological resources.

As a result of our review, we have determined that significant recorded archaeological sites are located within your project area. The Pennsylvania Archaeological Site Survey (PASS) file numbers are recorded below. The State History Code makes our agency responsible for conducting any necessary archaeological field investigations for such sites, and mandates a very limited timetable for the completion of those field investigations (60 days, or 90 days in the winter, with an additional 90 days, or 120 days in the winter, for exceptionally important archaeological sites). Regardless of the mandated time limits for field investigations, this project may proceed within a maximum of 180 days. We will be contacting you by telephone in the very near future to discuss the project with you and arrange for an initial field visit by our staff. In the interim, please refrain from any site preparation or other earth disturbance on the property. Your cooperation in the protection of Pennsylvania's past is very much appreciated.

P.A.S.S. # 36CH215
36CH216

FOR YOUR INFORMATION

The Pennsylvania Historical and Museum Commission will keep the Determination Notice and the materials you submitted in its files. Please attach this letter to your copy of the Notice and materials then submit the entire package of materials to DEP.

If this project will require any federal permits or will receive federal funding, the federal agency, under the National Historic Preservation Act of 1966, may require the appropriate surveys to be conducted. If the project will need an Army Corp of Engineers permit, this would be a **Category III** activity. We suggest that you consider conducting the survey early in the development or planning process to avoid delays in the future.

Thank you for notifying us of your proposed activity.

In our opinion no evaluation of historic structures will be necessary for this project area.

If you need further information regarding archaeological survey please contact Mark Shaffer at (717) 783-9900. If you need further information concerning historic structures please consult Ann Safley at (717) 787-9121. If you need a **status only** of the reviewed project please call Tina Webber at (717) 705-4036.

Sincerely,

Kurt W. Carr, Chief
Division of Archaeology &
Protection

CC: DEP, Southeast Region
KWC/lmm

P.O. BOX 735
101 FELLOWSHIP ROAD
UWCHLAND, PA 19480-0735

EVANS MILL ENVIRONMENTAL, INC.

PHONE (610) 458-8300
FAX (610) 458-7168
evansmil@emeinc.com

November 11, 2003

CMR#7002 3150 0004 2693 8866

Bureau of Historic Preservation
PA Historic and Museum Commission
300 North St.
Harrisburg, PA 17120-0024

RE: Cultural Resource Notice
Bailey Farm
Pocopson Township, Chester County, PA

Dear Sir/Maddame:

In accordance with PADEP Act 537 requirements, notification is hereby given of J.B. Brandolini, Inc. intent to subdivide the Bailey property, creating 64 lots in Pocopson Township, Chester County.

The site is approximately 123 acres in size, and contains a residential dwelling, two (2) barns, two (2) equipment buildings, and three (3) sheds. All of the buildings will remain on the property, and will be contained on a separate parcel. In addition, the central portion of the property is proposed to be maintained as open space, and will continue to be utilized for agricultural production.

An approximate 600 ft. buffer area will be maintained between the proposed construction area and the existing buildings. I have included a site plan depicting both present and proposed site conditions, as well as some photographs of the buildings on-site for your review.

Your prompt review and reply would be greatly appreciated. If you have any questions or need any further information, please do not hesitate to contact me.

Sincerely,

EVANS MILL ENVIRONMENTAL, INC.

Robert Wuerth

P:\1500\1541-00 J. B. Brandolini, Inc. - Bailey Property\500 Environmental\540 phmc\1541-00phmc.wpd

0120-PM-PY0003 Rev. 5/2000

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

CULTURAL RESOURCE NOTICE

DEP USE ONLY
Date Received

Before completing this form, read the step-by-step instructions provided with this form.

SECTION A. APPLICANT IDENTIFIER

Applicant Name	J.B. Brandolini, Inc.				
Street Address	1200 Burning Bush Lane				
City	West Chester	State	PA	Zip	19380
Telephone Number	(610) 640-9174				
Project Title	Bailey Farm				

SECTION B. LOCATION OF PROJECT

Municipality: Pocopson | County Name: Chester | DEP County Code: 15

SECTION C. PERMITS OR APPROVALS

Name of Specific DEP Permit or Approval Requested: Act 537, NPDES, and E & S

Anticipated federal permits:

- ☐ Surface Mining
- ☐ Army Corps of Engineers
- ☐ 401 Water Quality Certification
- ☐ 404 Water Quality Permit
- ☐ Federal Energy Regulatory Commission
- ☐ Other:

SECTION D. GOVERNMENT FUNDING SOURCES

- ☐ State: (Name)
- ☐ Federal: (Name)
- ☐ Local: (Name)
- ☐ Other: (Name)

SECTION E. RESPONSIBLE DEP REGIONAL, CENTRAL, DISTRICT MINING or OIL & GAS MGMT OFFICE

DEP Regional Office Responsible for Review of Permit Application

- ☐ Central Office (Harrisburg)
- ☒ Southeast Regional Office (Conshohocken)
- ☐ Southcentral Regional Office (Harrisburg)
- ☐ Southwest Regional Office (Pittsburgh)
- ☐ District Mining Office:
- ☐ Northeast Regional Office (Wilkes-Barre)
- ☐ Northcentral Regional Office (Williamsport)
- ☐ Northwest Regional Office (Meadville)
- ☐ Oil & Gas Office:

SECTION F. RESPONSIBLE COUNTY CONSERVATION DISTRICT, if applicable.

County Conservation District	Telephone Number, if known
Chester County Conservation District	(610)696-5126

SECTION G. CONSULTANT

Consultant, if applicable	Evans Mill Environmental				
Street Address	101 Fellowship Road				
City	Uwchlan	State	PA	Zip	19480
Telephone Number	(610) 458-8300				

SECTION H. PROJECT BOUNDARIES AND DESCRIPTION

REQUIRED

Indicate the total acres in the property under review. Of this acreage, indicate the total acres of earth disturbance for the proposed activity

Attach a 7.5' U.S.G.S. Map indicating the defined boundary of the proposed activity.

Attach photographs of any building over 50 years old. Indicate what is to be done to all buildings in the project area.

Attach a narrative description of the proposed activity.

Attach the return receipt of delivery of this notice to the Pennsylvania Historical and Museum Commission.

REQUESTED

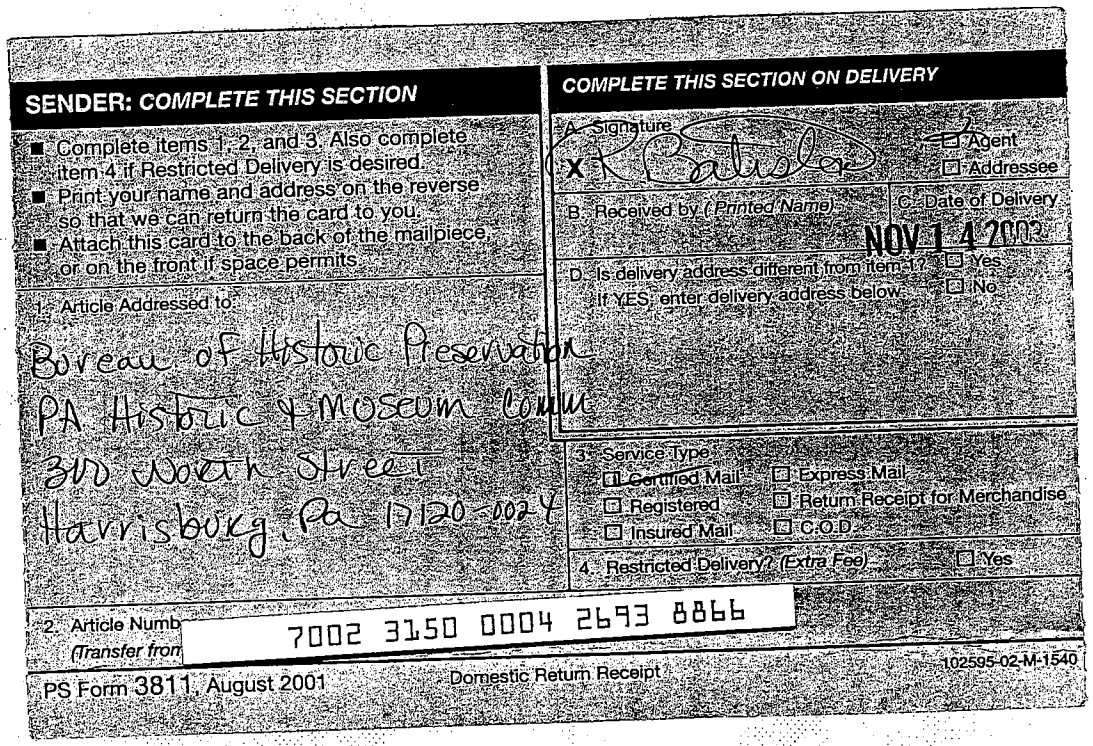
Attach photographs of any building over 40 years old

Attach site map, if available.

SECTION I. SIGNATURE BLOCK

11/11/03 [signature]

Date of Submission of Notice to PHMC | Applicant's Signature



SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Bureau of Historic Preservation
PA Historic Museum Comm
300 North Street
Harrisburg, PA 17120-0024

2. Article Numb
(Transfer from

7002 3150 0004 2693 8866

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☑ Addressee

B. Received by (Printed Name) C. Date of Delivery
NOV 14 2002

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

PS Form 3811, August 2001 Domestic Return Receipt 102595-02-M-1540

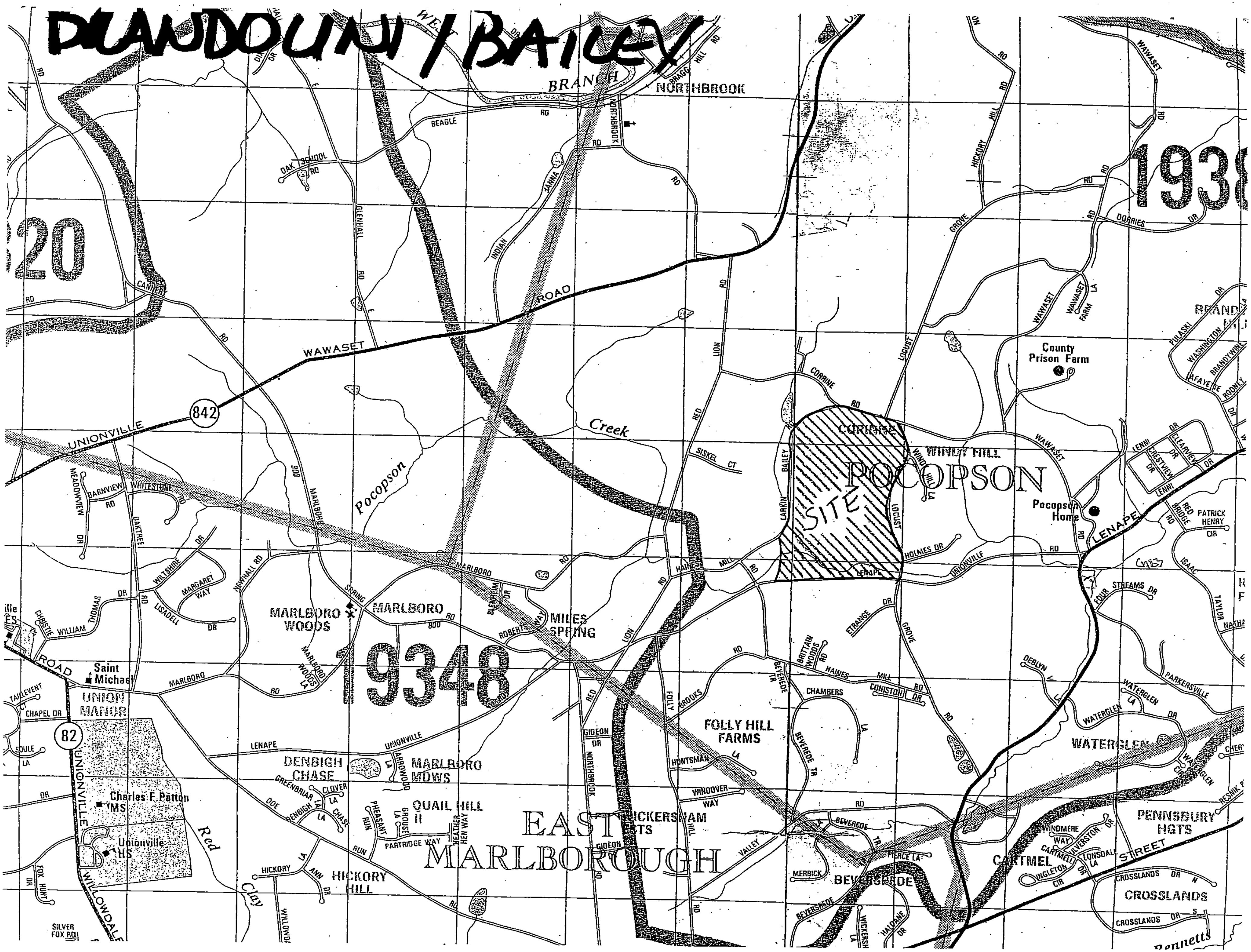
EVANS MILL ENVIRONMENTAL, INC.
P.O. Box 735
101 Fellowship Road
Uwchland, PA 19480
(610) 458-8300
(610) 458-7168 FAX

BAILEY FARM

Lenape-Unionville & Locust Grove Roads; Pocopson Township; Chester County, PA

U. S. G. S. QUADRANGLE - UNIONVILLE, PA

Scale: 1" = 2,000'	Date: October 30, 2003	By: Aml	EME No: 1541-00



POCOPSON
SITE
EAST MARLBOROUGH
1938
1948
9348
842
82
WAWASET ROAD
UNIONVILLE
NORTHBROOK
County Prison Farm
Pocopson Home
WINDY HILL
FOLLY HILL FARMS
MARLBORO WOODS
MARLBORO
MILES SPRING
DENBIGH CHASE
MARLBORO MDWS
QUAIL HILL II
HICKORY HILL
WICKERSHAM ESTS
BEVERSREDE
CARTMEL
CROSSLANDS
PENNSBURY HGTS
WATERGLEN
UNION MANOR
Saint Michael
Charles F. Patton MS
Unionville HS
Pocopson Creek
Red Clay
WEST BRANCH

Photo 1: Farmhouse located in southern portion of property

Photo 2: Barn located to west of farmhouse

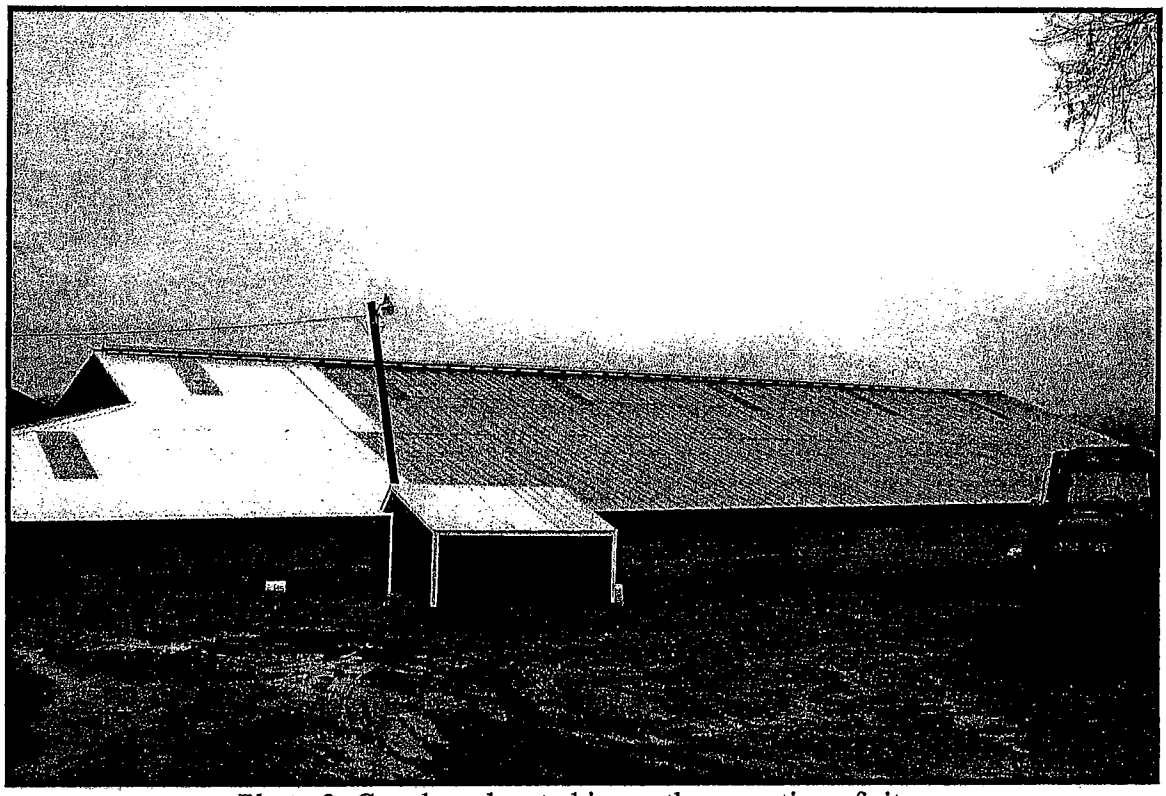


Photo 3: Cow barn located in southern portion of site

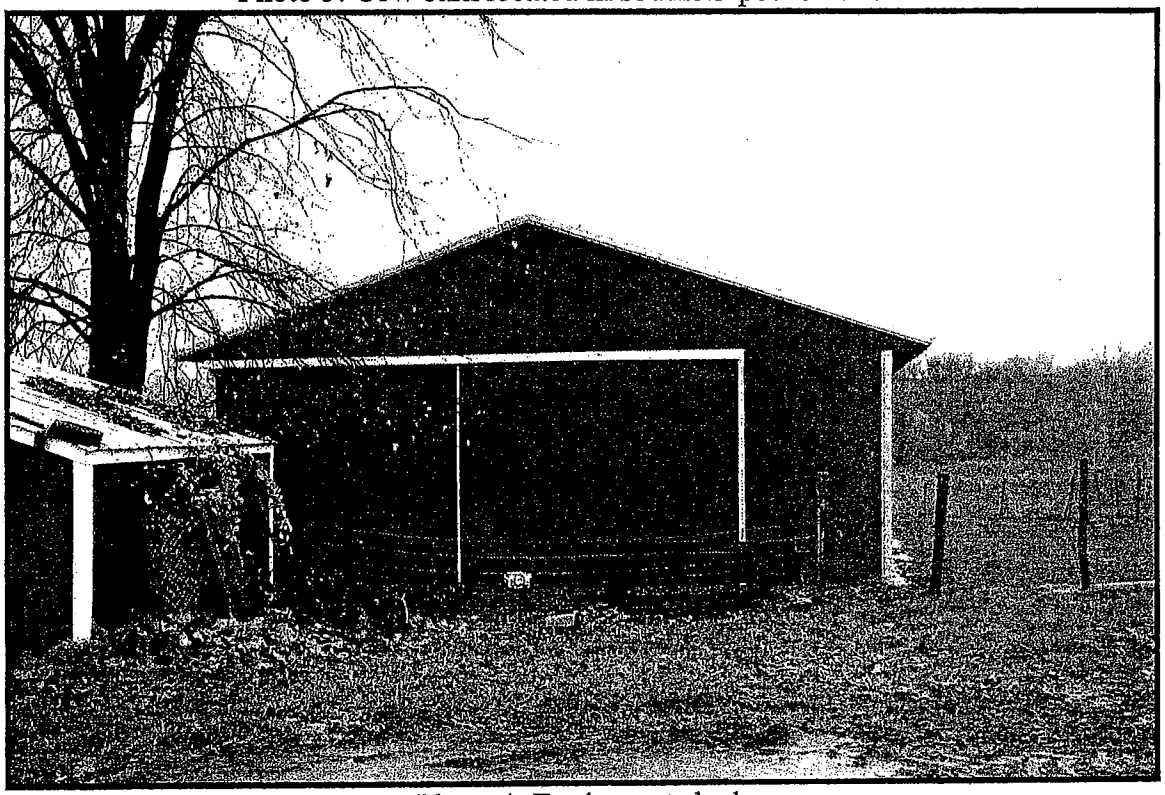


Photo 4: Equipment shed

Photo 5: Farm buildings

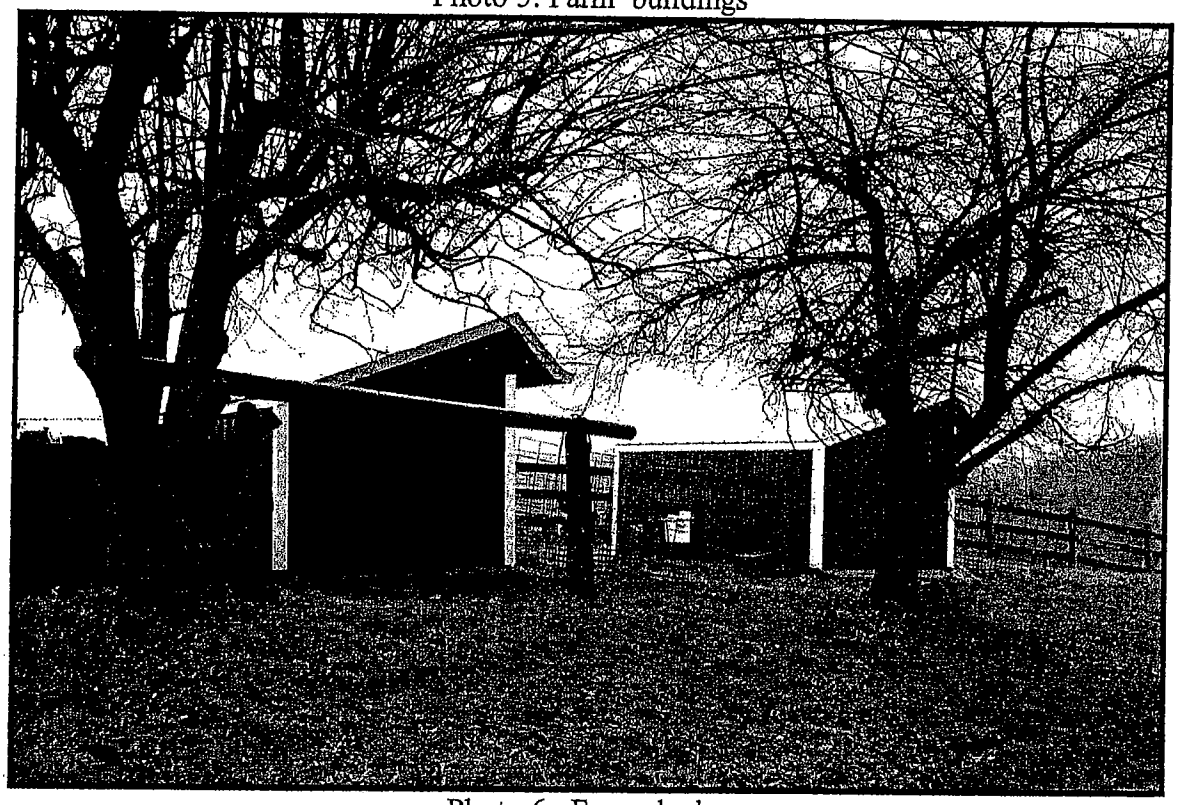


Photo 6: Farm sheds

1541-00
CORRES FOLDER

P.O. BOX 735
101 FELLOWSHIP ROAD
UWCHLAND, PA 19480-0735

EVANS MILL ENVIRONMENTAL, INC.

PHONE (610) 458-8300
FAX (610) 458-7168
evansmil@emeinc.com

October 28, 2003

CERT. MAIL # 7002 3150 0004 2678 1103

Pocopson Township
Attn: Karen Eckard, Secretary/Treasurer
P. O. Box 1
Pocopson, PA 19366

RE: Notice of Soil Testing
Wastewater Disposal Area Suitability
J. B. Brandolini, Inc. / Bailey Property
Pocopson Township, Chester County, PA
EME Project No. 1541-00

Dear Sir or Madam:

In accordance with the Sewage Facilities Planning Module requirement, Evans Mill Environmental, Inc. (EME) is giving written notice of soil test pit examination that are scheduled for the above referenced project.

Soil test pit examination with a PA Department of Environmental Protection (PaDEP) soil scientist is scheduled for Thursday and Friday, November 20th and 21st, 2003.

EME invites Pocopson Township to observe the soil testing activities. If you have any questions regarding this matter, please do not hesitate to contact me at (610) 458-8300.

Sincerely,
EVANS MILL ENVIRONMENTAL, INC.

Susan Ahern
Project Manager

SA/aml

cc: Brandolini
PADEP
Chester County Health Department
EME File

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Pocopson Township
ATTN: KAREN ECKARD
P.O. BOX 1
Pocopson, PA 19366-0001

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Karen J Eckard ☐ Agent ☐ Addressee

B. Received by (Printed Name) Karen J Eckard C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

POCOPSON PA 19366 OCT 29 2003 USPS

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from s) 7002 3150 0004 2678 1103

PS Form 3811, August 2001 Domestic Return Receipt 102595-02-M-1540

7002 3150 0004 2678 1103

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com®

OFFICIAL USE

Postage	$ 37
Certified Fee	230
Return Reciept Fee (Endorsement Required)	175
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$ 4.42

KENNETT SQUARE PA 19348 OCT 28 2003 Postmark Here

Sent To: POCOPSON TWP ATTN: KAREN ECKARD
Street, Apt. No.; or PO Box No.: P.O. BOX 1
City, State, ZIP+4: POCOPSON, PA 19366-0001

PS Form 3800, June 2002 See Reverse for Instructions

1541-05

Proof of Publication of Notice in the Daily Local News

Under Newspaper Advertising Act No. 587, Approved May 16, 1929

State of Pennsylvania
County of Chester {ss: {No. _____ Term, 2005

Meghan D. Cavanaugh, Legal Representative of the Daily Local News Company, a corporation, of the County and State aforesaid, being duly affirmed, deposes and says that the Daily Local News, a newspaper of general circulation, published at 250 N. Bradford, Ave., West Chester, PA, County and State aforesaid, was established November 19, 1872, and Incorporated December 11, 1911, since which date the Daily Local News has been regularly issued in said county, and that the printed notice or publication attached hereto is exactly the same as printed and published in the regular editions and issues of the said Daily Local News on the following dates viz:

March 13 A.D. 2005

Affiant further deposes that he/she is the proper person duly authorized by the Daily Local News Company, a corporation, publishers of said Daily Local News, a newspaper of general circulation, to verify the foregoing statement under oath, and that affiant is not interested in the subject matter of the aforesaid notice or advertisement, and that all allegations in the foregoing statements as to time, place and character of publication are true.

COPY OF **PUBLIC NOTICE** *CATION*

In accordance with the rules and regulations of the PA Department of Environmental Protection, notice is hereby given that a Sewage Facilities Planning Module (SFPM) has been submitted to Pocopson Township for the Corrine Village Subdivision. The project proposes the construction of 64 new single-family residential homes and 3 existing dwellings on 123.48 acres. The development will be served by a community sewage disposal system and public water supply. The development is located on the northwest corner of Lenape-Unionville Road and Locust Grove Road in Pocopson Township, Chester County, PA.

Wastewater will be treated on-site and disposed via land application of the treated wastewater. The system will be permitted by PADEP. The daily wastewater flow for the project is estimated to be approximately 20,213 gpd which includes provisions for ten (10) additional houses as requested by the Township. The use of a community sewage disposal system is consistent with Pocopson Township's Act 537 Plan.

Wetlands have also been delineated on the site and there are no proposed impacts to the wetands or stream channel areas. The Cultural Resource Notification to the PA Historic Museum Commission (PHMC) was submitted. The PHMC response indicated no evaluation of historical structures are necessary. Two archeological sites were noted as being located within the project area and the PHMC has been afforded the opportunity for conducting further field investigations. A PNDI search request was also performed which indicated no potential conflicts.

The Pennsylvania Department of Environmental Protection requires that a project sponsor place a notice of the proposed project in a newspaper of general circulation. A public comment period will extend for 30 days after the date of publication of this notice. The land development plan can be viewed at the Pocopson Township Office at the address indicated. Questions and comments can be directed to:

Pocopson Township
740 Denton Hollow Road
P. O. Box 1
Pocopson, PA 19366

Mgt D. C

affirmed to and subscribed before me this 15th

day of March, 2005

Barbara A Wolfe

Notary Public

Notarial Seal
Barbara A. Wolfe, Notary Public
East Bradford Twp., Chester County
My Commission Expires June 4, 2006

My Commission Expires:

Member, Pennsylvania Association of Notaries

Evans Mill Environmental, Inc.

ATTN: Ann Lane

P.O. Box 735

Uwchland, PA 19480-0735

To DAILY LOCAL NEWS COMPANY, Dr.
For publishing the notice or publication attached
hereto on the above stated dates .....$ _____
Probating same .....$ _____
Total .....$ _____

Publisher's Receipt for Advertising Costs

The Daily L a corporation, publishers of the Daily Local News, a newspaper of general circulation, hereby acknowledges receipt of the aforesaid notice and publication costs and certifies that the same has been duly paid.
DAILY LOCAL NEWS, a Corporation, Publishers of the DAILY LOCAL NEWS, a newspaper of General Circulation.

PUBLIC NOTICE

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Pocopson Township
740 Denton Hollow Road
P. O. Box 1
Pocopson, PA 19366

SECTION H

EVANS MILL ENVIRONMENTAL, INC.

SEWAGE FACILITIES PLAN

Prepared by Evans Mill Environmental, Inc.

EVANS MILL
ENVIRONMENTAL, INC.

APPENDIX A

APPENDIX A:
Soil Investigation Report

APPENDIX A

SOIL INVESTIGATION REPORT of PROPOSED SUBSURFACE WASTEWATER DISPOSAL AREAS

for

CORINNE VILLAGE SUBDIVISION
Pocopson Township
Chester County, Pennsylvania

EME No. 1541-00

Prepared by:

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February 9, 2004

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SOILS INVESTIGATION REPORT
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1.0 INTRODUCTION

1.1 Existing Site Description

The Baily Farm property is an existing 123.48 acre agricultural property located on the north side of Lenape-Unionville Road, west side of Locust Grove Road, and east side of Larkin-Baily Road, in Pocopson Township, Chester County, Pennsylvania. The location of the site is shown on *Figure 1- Site Location Map.*

1.2 Proposed Development

Corinne Development, LLC proposes to construct approximately 64 new single-family dwelling units (d.u.) on this property. Approximately 69.08 acres in the western portion of the site will be retained by the property owner for continued agricultural use. Potable water service will be provided from the Aqua American-Pennsylvania, Inc. (formerly Philadelphia Suburban Water Company). Sewage service will be provided by an on-site treatment and land application disposal system. The specific type of wastewater treatment system is specified in the Project Narrative of the Sewage Facilities Planning Module (SFPM) report.

The breakdown of the anticipated wastewater flow for the project is specified in the SFPM Project Narrative. The estimated flow is expected to be in the range of 20,000 to 25,000 gallons per day. The anticipate flow includes allowances for the three (3) existing houses on the site and some off-site connections as requested by the Township.

1.3 Purpose of Investigation

The soil investigation was performed to obtain regional and site-specific in-situ soil data to determine the general suitability of the soil for wastewater disposal, as well as determine the appropriate application rate and corresponding wastewater disposal capacity of the soil. The results of this soil investigation will be used to determine the maximum soil wastewater loading capacity of the proposed disposal area.

A separate hydrogeologic investigation has also been undertaken for the project and those findings are presented in a separate report entitled "Hydrogeological Assessment of Proposed Wastewater Disposal Area". The hydrogeologic study will determine the maximum wastewater loading capacity of the proposed disposal area that can be supported by the underlying geology. The Project Narrative included in the SFPM report will present a summary of findings for both the soils and hydrogeologic investigations, and will present the concept layout of the proposed wastewater treatment and disposal system for the project site.

2.0 SITE INVESTIGATION METHODOLOGY

2.1 Review of Published Data

2.1.1 General Soil Information

The soils on the proposed development site are mapped by the United States Department of Agriculture Soil Conservation Service[1] (USDA-SCS)[2] as Glenelg channery silt loam and Manor loam. The Official Series Description (OSD) for these two soil types are described below.

The OSD describes the Glenelg series as a very deep, well drained channery silt loam on well dissected uplands. The Glenelg series is formed in residuum weathered from micaceous schist on slopes can range from 0 to 55 percent. Runoff is generally medium to rapid depending on the slope and permeability is generally moderate to moderately slow in the range of 0.63 to 2.0 inches per hour. The main diagnostic horizon or feature of the typical Glenelg series is the formation of an argillic horizon. The solum generally ranges in thickness from 12 to 40 inches. The texture encountered within the A-horizon ranges from loam to silt loam with a moderate fine granular structure. Textures in the B-horizon generally consist of silt loam to clay loam with a moderate medium blocky to subangular blocky structure. The texture of the subsoil is generally loam to sandy loam. Rock fragments of hard white quartzite or schist and weathered parent material generally range from 0 to 35 percent in the solum and from 5 to 35 percent in the C-horizon.

The OSD describes the Manor loams as a very deep, well drained to somewhat excessively drained soil on strongly dissected uplands. The Manor series is also formed in materials weathered from micaceous schist. The main diagnostic horizon or feature of the Manor series is a Cambic horizon. The cambic horizon is an area within the soil profile, which has weak structural development. Slopes can range from 0 to 65 percent. Runoff is generally medium to rapid, and permeability is moderate in the solum (0.63 to 2.0 inches per hour) and moderately rapid in the C horizon. The solum generally ranges in thickness from 15 to 35 inches. The texture encountered within the solum ranges from a loam with a weak fine granular structure in the A-horizon to a silty loam with a weak medium subangular blocky structure in the B-horizon. The subsoil typically consists of sandy loam to loam texture with weathered parent material. Rock fragments of quartzite or schist range from 0 to 30 percent in the solum and C horizons.

2.1.2 General Geologic Information

The majority of the site is mapped by the United States Department of the Interior United States Geological Survey (USGS) as being underlain by the residual soils and rock of the ologolclase-mica schist phase of the Wissahickon Formation. Although the soil mapping does not indicate the presence of serpentine soil on or immediate to the site, the geology map indicates that a very small area in the along the western property line is underlain by the serpentine formation. This mapped formation is not located near the proposed wastewater disposal area.

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[1] United States Department of Agriculture, Soil Conservation Service, Pennsylvania State University and Pennsylvania Department of Agriculture, (1963), *Soil Survey of Chester and Delaware Counties, Pennsylvania*, Series 1959, No. 19, p. 121.

[2] The Soil Conservation Service (SCS) was renamed to the Natural Resource Conservation Service (NRCS)

The Wissahickon formation is generally moderately resistant to weathering and is often highly weathered to a moderate depth resulting in uneven, hackly, small-size rubble at points of exposure at the ground surface. The formation typically exhibits good surface drainage but joint and cleavage opening generally provide low secondary porosity. Ease of excavation is generally moderately easy but can be difficult in unweathered rock. This formation generally provides good foundation stability and but cut-slope stability is only fair due to partial disintegration of materials when exposed for only short time periods.

2.2 Field Investigation

EME's Soil Scientist and Mr. Len Cornish of PADEP's Soil Scientist conducted soil test pit evaluations in February of 2000. Upon revisions to the proposed site development plan since that time, a portion of the tested area was no longer available for use for treated wastewater disposal. EME's Soil Scientist and Ms. Nancy Sansoni, PADEP's current soil scientist, completed further test pit evaluations in November 2003.

Consistent with DEP policy, local municipal officials were invited to attend the test pit investigation in November 2003, but no local municipal representatives attended or requested to be in attendance. Prior to the test pit excavations, EME requested an underground utility clearance from PA One-Call to confirm the presence or absence of underground utilities within the proposed test pit excavation areas.

Test pit evaluation and soil descriptions were completed utilizing the USDA-NRCS soil classification system. The test pits were excavated, most to depths of approximately ten (10) feet below existing ground surface, using a rubber-tired backhoe.

3.0 SITE INVESTIGATION RESULTS

3.1 Test Pit Excavation and Examination

The test pits evaluated in 2000 were located in the east-central portion of the site. The more recent test pit investigation was undertaken to the northwest of the original investigation. In February 2000, ten (10) test pits were described by Mr. Scott Andress, EME Soil Scientist, and were verified by Mr. Len Cornish, Soil Scientist for PADEP. In November 2003, twenty (20) additional test pits were described by Thomas M. Benusa, CPSSc, EME Soil Scientist, and were verified by Ms. Nancy Sansoni, Soil Scientist for PADEP. The soil profile descriptions for the test pits located within the proposed disposal area are included in **Appendix A-1** while the remaining soil profiles for test pits not located within the proposed disposal field are included in **Appendix A-2**. The test pit locations were surveyed by Apex Engineering, Inc. and are shown on Plate 1, *Sewage Facilities Plan*.

The test pits evaluated on the site with PADEP encompass an area of approximately fourteen (14) acres. Upon refinement of the site development plan, the northern portion of the tested area was chosen for the proposed disposal field area. The soils mapped in this area include both the Manor and Glenelg soils. This area is located along the high point of the property and is characterized by test pits 101 through 107, 119, 120, and test pits 1, 2, 3, 4, 5, 9, and 10 and encompasses approximately 6.3 acres. A summary of the general conditions observed in these test pits is presented in the following table:

TABLE 1 TEST PIT EVALUATION SUMMARY TABLE			
TEST PIT NUMBER	LIMITING SOIL CHACTERISTIC		PADEP DRAINAGE CLASSIFICATION[3]
	TYPE	DEPTH	
101		127"+	DWD*
102		120"+	DWD
103		144"+	DWD
104	Rock	84"	DWD
105		127"+	DWD
106	Rock	108"	DWD
107	Rock	96"	DWD
119	Rock	63"	DWD
120		90"+	DWD
1		100"+	DWD
2		90"+	DWD
3		96"+	DWD
4		96"+	DWD
5		98"+	DWD
9		92"+	DWD
10		90"+	DWD

*DWD - deep, well drained;

The soil characteristics described for the test pits in the area of the proposed disposal field closely match the OSD for the Glenelg and Manor series. All profiles revealed deep, well-drained conditions. Limiting rock conditions due to high course fragment content with insufficient soil in the voids were observed in four (4) of the test pits at depths of 63", 84", 96", and 108" below ground surface.

Generally the soil texture in the A horizon was a channery loam with a weak granular structure The texture in the B horizons primarily consisted of a channery loam with weak subangular blocky structure, or a heavy channery loam with moderate subangular blocky structure. The consistence in both the A and B horizons was friable. A number of the test pits had a moderately well developed E horizon and Bh horizon between four (4) and ten (10) inches below ground surface.

The soil textures encountered in the C horizon were generally sandy loams and loamy sands. These textures were generally encountered at an average depth of approximately 18 inches below ground surface and extended throughout the C-horizon. Structure ranged from massive to single grain while the consistence was loose. Coarse fragment size and content ranged from gravelly to very stony in the saprolitic soil material.

3.2 Soil Permeability

The identification of restrictive soil horizons can indicate the need to conduct site-specific field permeability testing in order to evaluate the general soil suitability for wastewater

[3] Deep is defined as either open fractured rock or impermeable dense rock identified in the test pits at depths greater than 40 inches below ground surface. Well drained is defined as no evidence of a water table within 40 inches of the ground surface.

disposal. EME staff and PADEP soil scientist discussed this while on site and concurred that no horizons associated with restricted hydraulic infiltration were encountered. Since the investigators determined that no hydraulically restrictive horizons exist in the soil, no permeability testing was performed.

3.3 Hydraulic Loading of the Wastewater Disposal Area

The hydraulic loading rate of treated wastewater to the proposed disposal area was determined utilizing the in situ soil morphology. These soil morphologic data was evaluated in comparison with soil loading criteria developed by the Commonwealth of Pennsylvania, with information developed by representative drip tubing manufacturers, and with criteria developed by the State of Wisconsin.

The test pit investigation indicates the proposed disposal area consists of deep, well-drained soils. The soil textures and structures encountered in the solum are weak to moderate, channery loams, silt loams, and sandy loams. While the predominant soil texture throughout the disposal field consists of loams and sandy loams, the most limiting soil morphology of the solum throughout the disposal field area is a silt loam with a weak subangular blocky structure.

Information in the PADEP "Land Application of Treated Sewage and Industrial Wastewater", Publication Number 362-2000-009, suggests that loading rates for slow rate infiltration systems be based on the depth to restrictive layers such as bedrock, redoxymorphic features, or groundwater. These loading rates were developed for surface applied wastewater systems, such as spray irrigation or surface flooding systems, and account for days where no surface application can be accomplished due to frost or precipitation. The test pit investigation indicated that the proposed disposal field area is considered deep, well drained and would therefore allow a loading rate of 2.0 inches/week/acre on an annual average basis. This loading is equivalent to 0.18 gpd/ft^2 (7,841 g/d/ac).

PADEP's Alternate System Guidance, Publication Number 362-0300-007 allows for the placement of drip disposal systems on soils classified as either well-drained or moderately well-drained. The minimum vertical isolation distance of 20 inches is to be maintained below the drip tubing installation depth to the shallowest indication of limiting rock. No groundwater was encountered in any of the test pits in the proposed disposal area, and the shallowest indication of rock was encountered in one test pit at 63". The guidance suggests that a "qualified soil scientist" determine the applicable loading rate based upon the morphological characteristics of the soil. The guidance states the maximum loading rate based upon 0.34 gallons per linear feet of tubing with tubing spacing ranging from one (1) to three (3) feet. This correlates to a loading rate ranging from 0.34 gpd/ft^2 for 1-foot tubing spacing to 0.11 gpd/ft^2 for 3-foot tubing spacing. Based upon the soil morphological conditions observed and topographic features throughout the proposed disposal area, 0.34 gallons per linear feet with a 1.5-foot tubing spacing appears appropriate for the site. Therefore, based upon this guidance document, a loading rate of 0.23 gpd/ft^2 (10,019 g/d/ac) is deemed appropriate for the proposed disposal field area.

Loading rate information from drip irrigation tubing manufacturers' was also reviewed based upon soil conditions found on the subject site. American Manufacturing has developed a soil loading rate table for wastewater that is mechanically filtered. Loading rates are based primarily upon soil texture and structure. Based upon the most limiting morphological characteristic described for the disposal field area (silt loam with a weak subangular blocky

structure), this data supports a loading rate of up to 0.3 gpd/ft^2. (13,068 gal/acre) for treated effluent with a BOD5 of < 30 mg/l. This table is included in **Appendix C-1** of this report.

The soil loading rate analysis from another drip tubing manufacturer Geoflow, was also reviewed for the project site. Geoflow's analysis utilizes secondary treated wastewater (BOD_5 < 30 mg/L) and provides loading rate information based upon soil textures. The information suggests a loading rate 0.4 gpd/ft^2 (17,424 gpd/acre) for silt loam textured soils. The Geoflow loading rate information is found in **Appendix C-2.**

The State of Wisconsin has developed soil based loading rates for on-site wastewater disposal systems based on soil morphology. Wisconsin Comm.83 provides loading rates for both aerobically treated and anaerobically treated wastewater and is based on soil texture and structure. The data suggests loading rates for weak structured silt loams of 0.2 gpd/ft^2 (8,712 gal/ac) for anaerobically treated effluent (BOD_5 > 30 mg/L), and 0.3 gpd/ft^2 for (13,068 gal/ac) for aerobically (BOD_5 < 30 mg/L). The State of Wisconsin loading rate information is found in **Appendix C-3.**

Table 2 presents the gallons per day per acre based on suggested loading rates discussed from the above guidance documents:

TABLE 2
WASTEWATER APPLICATION RATE COMPARISON

Soil Loading Rate (gallons / day / acre)							
PADEP Surface Applied Loading Rates (DWD soil)	PADEP Drip Alternate System Guidance	Geoflow		American Manufacturing		Wisconsin Admin. Code	
		BOD>30 mg/L	BOD<30 mg/L	BOD>30 mg/L	BOD<30 mg/L	BOD>30 mg/L	BOD < 30 mg/L
7,841	10,019	-	17,424	4,356	13,068	8,712	13,068

The data summarized in Table 2 indicates that PADEP's parameters are the most conservative loading rates of the various sources cited in this report, and in fact in some instances, are less than half of other applicable loading rates. Considering the soils are deep, well-drained soils, there were no identified restrictive horizons, and typical permeabilities of these soil range from 0.63 to 2.0 inches per hour, the use of the 13,068 gpd/acre loading rate appears to be appropriate for the tested area, assuming effluent quality with BOD <30 mg/l.

The primary area designated for the wastewater disposal field encompasses approximately 4.3 acres. Therefore, the maximum disposal capacity of the soil based upon the loading rate of 13,068 gpd/acre of treated effluent with BOD <30 mg/l is 56,192 gpd.

3.4 Nutrient Loading of the Wastewater Disposal Area

DEP requires that the loading rate to the soil have no adverse impact on the quality of the off site groundwater system. An impact is defined as reducing the quality of the groundwater to a level that does not meet the applicable drinking water quality standards. The component of the wastewater that has the greatest potential of limiting the disposal area loading rate is nitrogen.

There are essentially three (3) components to consider when evaluating nitrogen loading to the groundwater- the treatment removal process, natural dilution, and plant utilization. Should the treatment process remove nitrogen from the treated wastewater to a concentration at or below the drinking water standard (10 ppm), the plant nitrogen utilization or groundwater dispersion plume analysis will not be a design consideration. However, should the treatment process not remove nitrogen to a concentration at or below the drinking water standard, and/or should the groundwater dispersion plume analysis indicate potential off-site impacts, the plant nitrogen utilization may be a design consideration.

The United States Environmental Protection Agency (EPA) has conducted research into the nitrogen utilization of various plant communities. The results of this research are found in the EPA publication titled "Process Design Manual Land Treatment of Municipal Wastewater[4]" publication number EPA 625/1-81-013. Referencing page 4-11, the EPA reports nutrient uptake rates for selected crops such as orchard grass and reed canary grass of 350 Kg/Ha-yr (312 lbs/ac-yr).

The disposal field area currently consists of cultivated fields, most recently planted in corn. Upon installation of the disposal system, the area will likely be planted with selected grasses such as orchard grass or reed canary grass. This 4.3 acre disposal field area planted in such grasses has the capacity to remove 1,342 lbs of nitrogen from the wastewater per year. Estimated nitrogen loading to the area based upon the anticipated daily flow of 20,000 to 25,000 gpd and nitrogen concentrations of 45 mg/l would be 2,741 to 3,427 lbs per year. Based upon plant utilization alone, a 39 to 49% reduction of nitrogen loading to the disposal area would be expected for a flow of 20,000 to 25,000 gpd.

Therefore, if crop management is proposed, an estimated annual average effluent concentration of 27.5 to 23 mg/l of nitrogen should not adversely impact the groundwater quality. This does not take into account the groundwater dilution considerations that are addressed in the hydrogeologic report. Additional information pertaining to the proposed treatment, and the method and schedule of wastewater application is included in the Sewage Facilities Planning Module.

4.0 SUMMARY AND CONCLUSIONS

This soil investigation has been performed to evaluate site suitability for wastewater application. This assessment focused on morphological description of the soils within the proposed disposal field area. This disposal field area is located in the central portion of the site along the highpoint of the project site. The USDA-NRCS Soil Survey for Chester and Delaware Counties indicates the area contains deep, well-drained Manor and Glenelg soils.

[4] Process Design Manual for Land Treatment of Municipal Wastewater, USEPA 625/1-81-013 United States Environmental Protection Agency, Center for Environmental Research Information, Cincinnati, Ohio, 45268, October 1981.

Test pit evaluations concurred that the soils were typical of the Manor and Glenelg soils and are classified as deep, well-drained throughout the disposal field.

During the soil morphologic assessment with the PADEP soil scientist, it was concurred that there were no hydraulically restrictive horizons identified in the test pits throughout the proposed disposal field, therefore, no soil permeability testing was deemed to be necessary. The soil loading rate of treated wastewater to the proposed disposal area was determined based on the in-situ morphological characteristics of the soil.

The soils throughout the proposed 4.3 acre primary disposal field are deep, well-drained soils and there were no identified restrictive horizons observed within the approximate ten (10) feet deep test pits. The predominant soil texture of the solum throughout the disposal field consists of loams and sandy loams, with weak to moderate structures. Based upon the characteristics observed and the documentation presented, the use of the 13,068 gpd/acre loading rate is deemed to be appropriate for the tested area, assuming effluent quality with BOD <30 mg/l.

The area reserved for the primary wastewater disposal field encompasses approximately 4.3 acres. Based upon the soil loading rate of 13,068 gpd/acre of treated effluent with BOD <30 mg/l, the maximum disposal capacity of the designated disposal field is 56,192 gpd.

Estimated nitrogen loading to the 4.3 acre disposal field based upon an anticipated daily flow of 20,000 to 25,000 gpd with nitrogen concentrations of 45 mg/l would be 2,741 to 3,427 lbs per year. If crop management is proposed as part of the system design, this would result in a 39 to 49% reduction of nitrogen loading to the disposal area without considering the further reduction from dilution and dispersion. Therefore, an estimated annual average effluent concentration of 27.5 to 23 mg/l of nitrogen for flows of 20,000 to 25,000 gpd should not adversely impact the groundwater quality.

In summary, the results of this soil evaluation have determined that a **maximum** soil loading rate to the 4.3 acre primary disposal area is 56,192 gpd. The Project Narrative, included in the SFPM report, specifies the anticipated daily wastewater flow for the project, a concept of the proposed treatment and disposal system, and whether crop management will be incorporated in the system design. **The design loading rate to the disposal field will be based on the anticipated effluent quality and the findings of both the soil and hydrogeologic reports, and is specified in the Project Narrative of the Sewage Facilities**

6.0 REFERENCES

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APPENDIX A-1:

Soil Profile Descriptions – Wastewater Disposal Area

PIT NUMBER: 101

EVANS MILL ENVIRONMENTAL, INC.

EME NUMBER: 1541-00

SOIL EVALUATION FORM

DATE: 11/6/2003 STATE: PA COUNTY: Chester MUNICIPALITY: Pocopson

CLIENT Brandolini SUBDIVISION: Bailey SITE LOCATION: Wawasett and Locust Grove Road

MORPHOLOGIC DETERMINATION: **SEWAGE** STORMWATER SHWT SOILS INVESTIGATOR: Thomas M. Benusa, CPSSc

Horizon	Depth		Boundary		Color	Texture	% CFs	REDOX			Structure	Consistence	Roots	LOADING RATE	NOTES (% clay, macro pores)
	Upper	Lower	distinct	topo				A	S	C					
Ap	0	10	A/S		5YR 3/3	channery loam	25	–			1GR/ 1SBK	friable	FF	0.34	
BW	10	18	C/S		5YR 4/4	channery loam	30	–			1SBK	friable	–	0.34	
BC	18	40	G/W		varigated BR/SB/B	very channery sandy loam	30-40	–			0M	friable	–	0.34	
C	40	127	–		variegated GB/B/GrB	very channery sandy loam	40-50	–			0M	friable	–	0.34	

COMMENTS:

SOIL TYPE: Manor

LIMITING CONDITION:

Type: Bottom of Pit

Depth: 127"

Soil Drainage Class:

_____ Excessively Drained

XX Well Drained

_____ Moderately Well Drained

____ Somewhat Poorly Drained

____ Poorly Drained

____ Very Poorly Drained

SIGNATURES:

SOIL SCIENTIST: Thomas Benusa

THOMAS M. BENUSA CERTIFIED PROFESSIONAL SOIL SCIENTIST 21617 EXP.

WEATHER: cloudy/cool/rain

SLOPE: 10-12%

COVER: Corn

METHOD: Backhoe

EXCAVATION DEPTH: 127"

LANDSCAPE POSITION: Backslope

REDOX - Redoxymorphic features (Drainage Mottling) A/S/C - Abundance/Size/Contrast

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PIT NUMBER: 102

EVANS MILL ENVIRONMENTAL, INC.

EME NUMBER: 1541-00

SOIL EVALUATION FORM

DATE: 11/6/2003 STATE: PA COUNTY: Chester MUNICIPALITY: Pocopson

CLIENT Brandolini SUBDIVISION: Bailey SITE LOCATION: Wawasett and Locust Grove Road

MORPHOLOGIC DETERMINATION: **SEWAGE** STORMWATER SHWT SOILS INVESTIGATOR: Thomas M. Benusa, CPSSc

Horizon	Depth		Boundary		Color	Texture	% CFs	REDOX			Structure	Consistence	Roots	LOADING RATE	NOTES (% clay, macro pores)
	Upper	Lower	distinct	topo				A	S	C					
Ap	0	8	A/S		7.5YR 4/4	channery loam	20		–		1GR	friable	FF	0.34	
BW	8	20	C/W		7.5YR 5/8	channery loam	25		–		1SBK	friable	–	0.34	
BC	20	30	C/W		variegated RB/YR/B	very channery sandy loam	30-40		–		0M	friable	–	0.34	
C1	30	109	C/I		variegated B/B/YR	very channery sandy loam	40-50		–		0M	friable	–	0.34	
C2	109	120	–		variegated DR/RB/YR	very channery loam sand	50-60		–		0M	very friable / loose	–	0.34	

COMMENTS: 72" West side Test Pit - smaller end ext. channery material

SOIL TYPE:
Manor
LIMITING CONDITION:
Type: Bottom of Pit
Depth: 120"

Soil Drainage Class:
_____ Excessively Drained
XX Well Drained
_____ Moderately Well Drained
____ Somewhat Poorly Drained
____ Poorly Drained
____ Very Poorly Drained

SIGNATURES:
SOIL SCIENTIST:

THOMAS M. BENUSA
CERTIFIED PROFESSIONAL SOIL SCIENTIST
NO. 21017 EXP.

WEATHER: cloudy/cool/rain
SLOPE: 8-12%
COVER: Corn

METHOD: Backhoe
EXCAVATION DEPTH: 120"
LANDSCAPE POSITION: Backslope

REDOX - Redoxymorphic features (Drainage Mottling) A/S/C - Abundance/Size/Contrast

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PIT NUMBER: 103

EVANS MILL ENVIRONMENTAL, INC.

EME NUMBER: 1541-00

SOIL EVALUATION FORM

DATE: 11/6/2003 STATE: PA COUNTY: Chester MUNICIPALITY: Pocopson

CLIENT Brandolini SUBDIVISION: Bailey SITE LOCATION: Wawasett and Locust Grove Road

MORPHOLOGIC DETERMINATION: **SEWAGE** STORMWATER SHWT SOILS INVESTIGATOR: Thomas M. Benusa, CPSSc

Horizon	Depth		Boundary		Color	Texture	% CFs	REDOX			Structure	Consistence	Roots	LOADING RATE	NOTES (% clay, macro pores)
	Upper	Lower	distinct	topo				A	S	C					
Ap	0	6	A/S		7.5YR 3/3	gravelly loam	15		_		1GR	friable	FF	0.34	
Bt	6	17	C/S		7.5YR 4/4	gravelly loam	20		_		1SBK	friable	FF	0.34	
C1	17	40	C/W		variegated BR/RY/YR	very channery sandy loam	35		_		1SBK	friable	_	0.34	
C2	40	120	G/I		variegated PB/BY/YB	sandy loam / loam sand	10		_		0M/0SG	friable	_	0.34	
Cd®	120	144	_		variegated PB/YB/BY	channery loamy sand	30		_		0M/0SG	friable	_	0.34	

COMMENTS:

SOIL TYPE:
Glenelg
LIMITING CONDITION:
Type: Bottom of Pit
Depth: 144"

Soil Drainage Class:
_____ Excessively Drained
XX Well Drained
_____ Moderately Well Drained
____ Somewhat Poorly Drained
____ Poorly Drained
____ Very Poorly Drained

SIGNATURES:
SOIL SCIENTIST:

WEATHER: cloudy/cool/rain
SLOPE: 12-15%
COVER: Corn

METHOD: Backhoe
EXCAVATION DEPTH: 144"
LANDSCAPE POSITION: Shoulder/Backslope

THOMAS M. BENUSA CERTIFIED PROFESSIONAL SOIL SCIENTIST NO 21617 EXP.

REDOX - Redoxymorphic features (Drainage Mottling) A/S/C - Abundance/Size/Contrast

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PIT NUMBER: 104

EVANS MILL ENVIRONMENTAL, INC.

EME NUMBER: 1541-00

SOIL EVALUATION FORM

DATE: 11/6/2003 STATE: PA COUNTY: Chester MUNICIPALITY: Pocopson

CLIENT Brandolini SUBDIVISION: Bailey SITE LOCATION: Wawasett and Locust Grove Road

MORPHOLOGIC DETERMINATION: **SEWAGE** STORMWATER SHWT SOILS INVESTIGATOR: Thomas M. Benusa, CPSSc

Horizon	Depth		Boundary		Color	Texture	% CFs	REDOX			Structure	Consistence	Roots	LOADING RATE	NOTES (% clay, macro pores)
	Upper	Lower	distinct	topo				A	S	C					
Ap	0	8	A/S		7.5YR 3/3	channery loam	20		_		2GR/ 1SBK	friable	FF	0.34	
Bt	8	19	C/S		7.5YR 5/6	channery heavy loam	25		_		2SBK	friable	FF	0.34	
BC	19	30	C/W		variegated	channery sandy loam	30		_		1SBK	friable	_	0.34	
C1	30	63	C/W		variegated	very channery sandy loam	45-55		_		0M	friable	_	0.34	
C2	63	84	C/I		variegated	sandy loam/ loamy sand	30-50		_		0M/SG	friable	_	0.34	
Cd®	84	120	_		variegated	ext. channery loam sand	65-75		_		0M	friable	_	0.34	

COMMENTS:

SOIL TYPE:
Manor
LIMITING CONDITION:
Type: Rock
Depth: 84"

Soil Drainage Class:
_____ Excessively Drained
XX Well Drained
_____ Moderately Well Drained
____ Somewhat Poorly Drained
____ Poorly Drained
____ Very Poorly Drained

SIGNATURES:
SOIL SCIENTIST:

WEATHER: cloudy/cool/rain
SLOPE:
COVER: Corn

METHOD: Backhoe
EXCAVATION DEPTH: 120"
LANDSCAPE POSITION: Back

REDOX - Redoxymorphic features (Drainage Mottling) A/S/C - Abundance/Size/Contrast

THOMAS M. BENUSA CERTIFIED PROFESSIONAL SOIL SCIENTIST NO. 21617 EXP.

101 Fellowship Road. PO Box 735
Uwchland, PA 19480

610-458-8300 (P)
610-458-7168 (F)

PIT NUMBER: 105

EVANS MILL ENVIRONMENTAL, INC.

EME NUMBER: 1541-00

SOIL EVALUATION FORM

DATE: 11/6/2003 STATE: PA COUNTY: Chester MUNICIPALITY: Pocopson

CLIENT Brandolini SUBDIVISION: Bailey SITE LOCATION: Wawasett and Locust Grove Road

MORPHOLOGIC DETERMINATION: **SEWAGE** STORMWATER SHWT SOILS INVESTIGATOR: Thomas M. Benusa, CPSSc

Horizon	Depth		Boundary		Color	Texture	% CFs	REDOX			Structure	Consistence	Roots	LOADING RATE	NOTES (% clay, macro pores)
	Upper	Lower	distinct	topo				A	S	C					
Ap	0	14	C/S		10YR 3/2	channery loam	15		_		1GR	friable	FF	0.34	
BW	14	28	C/W		7.5YR 3/4	channery loam	15		_		1SBK	friable	FF	0.34	
BC	28	36	C/W		variegated RB/SB/DB	channery sandy loam	20		_		1SBK	friable	_	0.34	
C1	36	80	G/I		variegated RB/YR/SB	flaggy sandy loam	30-35		_		0M/SG	friable	_	0.34	
C2	80	127	_		variegated SB/DB/RB	very flaggy loam sand	45-50		_		0M/SG	very friable / loose	_	0.34	

COMMENTS:

SOIL TYPE:
Manor
LIMITING CONDITION:
Type: Bottom of Pit
Depth: 127"

Soil Drainage Class:

____ Excessively Drained	____ Somewhat Poorly Drained
XX Well Drained	____ Poorly Drained
____ Moderately Well Drained	____ Very Poorly Drained

SIGNATURES:

SOIL SCIENTIST: Thomas Benusa

THOMAS M. BENUSA
CERTIFIED PROFESSIONAL SOIL SCIENTIST
NO. 21617 EXP.

WEATHER: cloudy/cool/rain
SLOPE: 15-20%
COVER: Corn

METHOD: Backhoe
EXCAVATION DEPTH: 127"
LANDSCAPE POSITION: Backslope

REDOX - Redoxymorphic features (Drainage Mottling) A/S/C - Abundance/Size/Contrast

101 Fellowship Road. PO Box 735
Uwchland, PA 19480

610-458-8300 (P)
610-458-7168 (F)

PIT NUMBER: 106

EVANS MILL ENVIRONMENTAL, INC.

EME NUMBER: 1541-00

SOIL EVALUATION FORM

DATE: 11/6/2003 STATE: PA COUNTY: Chester MUNICIPALITY: Pocopson

CLIENT Brandolini SUBDIVISION: Bailey SITE LOCATION: Wawasett and Locust Grove Road

MORPHOLOGIC DETERMINATION: **SEWAGE** STORMWATER SHWT SOILS INVESTIGATOR: Thomas M. Benusa, CPSSc

Horizon	Depth		Boundary		Color	Texture	% CFs	REDOX			Structure	Consistence	Roots	LOADING RATE	NOTES (% clay, macro pores)
	Upper	Lower	distinct	topo				A	S	C					
Ap	0	8	A/S		7.5YR 3/3	channery heavy loam	15	–			1GR/1SBK	friable	FF	0.34	
Bt	8	16	A/S		7.5YR 5/8	channery heavy loam	20	–			2SBK	friable	–	0.34	
C1	16	60	C/W		7.5YR 6/6	channery sandy loam	20	–			1SBK	friable	–	0.34	
C2	60	108	G/I		variegated DB/RY/RB	very channery loam sand	45-60	–			0M/0SG	friable	–	0.34	
Cr	108	132	–		variegated YB/Gray/RB	ext. channery loam sand	70-80	–			0M/0SG	friable	–	0.34	

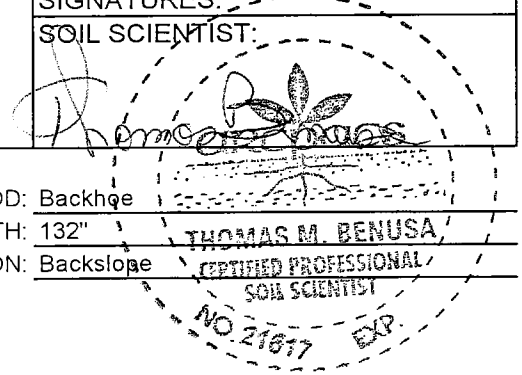
COMMENTS:

SOIL TYPE: Manor

LIMITING CONDITION:
Type: Bottom of Pit
Depth: 108"

Soil Drainage Class:
_____ Excessively Drained
__XX__ Well Drained
_____ Moderately Well Drained
____ Somewhat Poorly Drained
____ Poorly Drained
____ Very Poorly Drained

SIGNATURES:
SOIL SCIENTIST:



WEATHER: cloudy/cool/rain
SLOPE:
COVER: Corn

METHOD: Backhoe
EXCAVATION DEPTH: 132"
LANDSCAPE POSITION: Backslope

REDOX - Redoxymorphic features (Drainage Mottling) A/S/C - Abundance/Size/Contrast

101 Fellowship Road. PO Box 735
Uwchland, PA 19480

610-458-8300 (P)
610-458-7168 (F)

PIT NUMBER: 107

EVANS MILL ENVIRONMENTAL, INC.

EME NUMBER: 1541-00

SOIL EVALUATION FORM

DATE: 11/6/2003 STATE: PA COUNTY: Chester MUNICIPALITY: Pocopson

CLIENT Brandolini SUBDIVISION: Bailey SITE LOCATION: Wawasett and Locust Grove Road

MORPHOLOGIC DETERMINATION: **SEWAGE** STORMWATER SHWT SOILS INVESTIGATOR: Thomas M. Benusa, CPSSc

Horizon	Depth		Boundary		Color	Texture	% CFs	REDOX			Structure	Consistence	Roots	LOADING RATE	NOTES (% clay, macro pores)
	Upper	Lower	distinct	topo				A	S	C					
Ap	0	10	A/S		10YR 3/3	channery loam	25	–			1GR/ 1SBK	friable	FF	0.34	
Bt	10	32	C/S		7.5YR 5/6	channery heavy loam	20	–			1SBK	friable	–	0.34	
C1	32	72	C/W		variegated RY/BR/YB	very channery loam	35-50	–			0M	friable	–	0.34	
C2	72	96	G/W		variegated SB/YB/Gray	very channery sandy loam	45-60	–			0M	friable	–	0.34	
Cr	96	120	–		variegated B/Gray/RB	ext. channery loam sand	75-80	–			0M	friable	–	0.34	dense in place

COMMENTS:

SOIL TYPE: Glenelg

LIMITING CONDITION:

Type: Rock

Depth: 96"

Soil Drainage Class:

_____ Excessively Drained

__XX__ Well Drained

_____ Moderately Well Drained

___ Somewhat Poorly Drained

___ Poorly Drained

___ Very Poorly Drained

SIGNATURES:

SOIL SCIENTIST:

WEATHER: cloudy/cool

SLOPE: 8-12%

COVER: Corn

METHOD: Backhoe

EXCAVATION DEPTH: 120"

LANDSCAPE POSITION: Backslope/shoulder

REDOX - Redoxymorphic features (Drainage Mottling) A/S/C - Abundance/Size/Contrast

101 Fellowship Road. PO Box 735
Uwchland, PA 19480

610-458-8300 (P)
610-458-7168 (F)

arcpacs
THOMAS M. BENUSA
CERTIFIED PROFESSIONAL SOIL SCIENTIST
NO. 21617 EXP.

PIT NUMBER: 119

EVANS MILL ENVIRONMENTAL, INC.

EME NUMBER: 1541-00

SOIL EVALUATION FORM

DATE: 11/21/2003 STATE: PA COUNTY: Chester MUNICIPALITY: Pocopson

CLIENT Brandolini SUBDIVISION: Bailey SITE LOCATION: Wawasett and Locust Grove Road

MORPHOLOGIC DETERMINATION: **SEWAGE** STORMWATER SHWT SOILS INVESTIGATOR: Thomas M. Benusa, CPSSc

Horizon	Depth		Boundary		Color	Texture	% CFs	REDOX			Structure	Consistence	Roots	LOADING RATE	NOTES (% clay, macro pores)
	Upper	Lower	distinct	topo				A	S	C					
Ap	0	8	A/S		7.5YR 3/3	silt loam	10	_			2MGr	friable	FF		
BC	8	21	C/W		7.5YR 4/4	channery sandy loam	20	_			2SBK	friable	FF		
C1	21	29	G/W		variegated	channery sandy loam	20	_			1SBK	_	_		
C2	29	63	G/W		variegated	v channery sandy loam	40-50	_			OM	_	_		
C3	63	94	_		variegated	ext. channery sandy loam	65-75	_			OM	_	_		

COMMENTS:

SOIL TYPE: Glenelg

LIMITING CONDITION:

Type: CF

Depth: 63"

Soil Drainage Class:

_____ Excessively Drained

__XX__ Well Drained

_____ Moderately Well Drained

____ Somewhat Poorly Drained

____ Poorly Drained

____ Very Poorly Drained

SIGNATURES:

SOIL SCIENTIST: Thomas Benusa

WEATHER: _____

SLOPE: _____

COVER: _____

METHOD: _____

EXCAVATION DEPTH: _____

LANDSCAPE POSITION: _____

REDOX - Redoxymorphic features (Drainage Mottling) A/S/C - Abundance/Size/Contrast

ARCPACS

THOMAS M. BENUSA
CERTIFIED PROFESSIONAL
SOIL SCIENTIST

101 Fellowship Road. PO Box 735
Uwchland, PA 19480

610-458-8300 (P)
610-458-7168 (F)

PIT NUMBER: 120

EVANS MILL ENVIRONMENTAL, INC.

EME NUMBER: 1541-00

SOIL EVALUATION FORM

DATE: 11/21/2003 STATE: PA COUNTY: Chester MUNICIPALITY: Pocopson

CLIENT Brandolini SUBDIVISION: Bailey SITE LOCATION: Wawasett and Locust Grove Road

MORPHOLOGIC DETERMINATION: **SEWAGE** STORMWATER SHWT SOILS INVESTIGATOR: Thomas M. Benusa, CPSSc

Horizon	Depth		Boundary		Color	Texture	% CFs	REDOX			Structure	Consistence	Roots	LOADING RATE	NOTES (% clay, macro pores)
	Upper	Lower	distinct	topo				A	S	C					
Ap	0	5	A		5YR 3/3	channery loam	15		_		1GR	friable			
BC	5	22	C		2.5YR 4/6	channery sandy lom	15		_		1SBK	friable			
C1	22	37			variegated	channery sandy lom	30		_		MSS	_			
C2	37	90			variegated	v. channery sandy loam	40-50		_		MSS	very friable			

COMMENTS:

SOIL TYPE:

LIMITING CONDITION:
Type:
Depth:

Soil Drainage Class:

_____ Excessively Drained
XX Well Drained
_____ Moderately Well Drained
___ Somewhat Poorly Drained
___ Poorly Drained
___ Very Poorly Drained

SIGNATURES:

SOIL SCIENTIST: Thomas Benusa

WEATHER: _____

SLOPE: _____

COVER: _____

METHOD: _____

EXCAVATION DEPTH: _____

LANDSCAPE POSITION: _____

REDOX - Redoxymorphic features (Drainage Mottling) A/S/C - Abundance/Size/Contrast

ARCPACS

THOMAS M. BENUSA
CERTIFIED PROFESSIONAL SOIL SCIENTIST

101 Fellowship Road. PO Box 735
Uwchland, PA 19480

610-458-8300 (P)
610-458-7168 (F)

EVANS MILL ENVIRONMENTAL, INC.

County: Chester
Township: Pocopson
Subdivision: Baily Farm
Date: 2/9/00

SOIL LOG DESCRIPTIONS

Described By: S. Andress / Len Cornish (DEP)
Test Pit Number: 2/9/1

HORIZON	DEPTH (inches) Upper	Lower	DISTINCTNESS OF BOUNDARY	TEXTURE	% COARSE FRAGMENT	COLOR	DRAINAGE MOTTLING ABUNDANCE	CONTRAST	STRUCTURE TYPE	GRADE	CONSISTENCE	COMMENTS
Ap	0	14		Si Lo	----		----	----	gran	w	fri	
Bt1	14	29		Si Lo	----		----	----	gran	w	fri	
Bt2	29	38		Si Lo	----		----	----	sbk	w	fri	
B/c	38	57		SiLo	----		----	----	s	m	fri	
C1	57	68		Lo	----		----	----	s	m	fri	
C2	68	100		Lo	----		----	----	s	m	fri	

LIMITING ZONE DEPTH: 100"

WEATHER: Snow cover, above 40 F

DETERMINED BY: B.O.Pit

ADDITIONAL COMMENTS: _____

SLOPE: _____

SOIL DRAINAGE CLASS: _____

EVANS MILL ENVIRONMENTAL, INC.

County: Chester
Township: Pocopson
Subdivision: Baily Farm
Date: 2/9/00

SOIL LOG DESCRIPTIONS

Described By: S. Andress / Len Cornish (DEP)
Test Pit Number: 2/9/2

HORIZON	DEPTH (inches) Upper	Lower	DISTINCTNESS OF BOUNDARY	TEXTURE	% COARSE FRAGMENT	COLOR	DRAINAGE MOTTLING ABUNDANCE	CONTRAST	STRUCTURE TYPE	GRADE	CONSISTENCE	COMMENTS
Ap	0	10		Si Lo	----		----	----	gran	w	fri	
Bt1	10	32		Si Lo	----		----	----	gran	w	fri	
Bt2	32	47		Si Lo	----		----	----	sbk	w	fri	
C1	47	65		Channery SiLo	----		----	----	s	m	fri	
C2	65	90		Very Channery SiLo	----		----	----	s	m	fri	

LIMITING ZONE DEPTH: 90"

WEATHER: Snow cover, above 40 F

DETERMINED BY: B.O.Pit

ADDITIONAL COMMENTS: _____

SLOPE: _____

SOIL DRAINAGE CLASS: _____

EVANS MILL ENVIRONMENTAL, INC.

County: Chester
Township: Pocopson
Subdivision: Baily Farm
Date: 2/9/00

SOIL LOG DESCRIPTIONS

Described By: S. Andress / Len Cornish (DEP)
Test Pit Number: 2/9/3

HORIZON	DEPTH (inches)		DISTINCTNESS	TEXTURE	% COARSE	COLOR	DRAINAGE MOTTLING		STRUCTURE		CONSISTENCE	COMMENTS
	Upper	Lower	OF BOUNDARY		FRAGMENT		ABUNDANCE	CONTRAST	TYPE	GRADE		
Ap	0	11		Si Lo	----		----	----	gran	w	fri	
Bt1	11	32		Si Lo	----		----	----	sbk	w	fri	
Bt2	32	67		Si Lo	----		----	----	sbk	w	fri	
C1	67	96		Si Lo	----		----	----	s	m	fri	

LIMITING ZONE DEPTH: 96"

DETERMINED BY: B.O.Pit

SLOPE: _____

WEATHER: Snow cover, above 40 F

ADDITIONAL COMMENTS: _____

SOIL DRAINAGE CLASS: _____

EVANS MILL ENVIRONMENTAL, INC.

County: Chester
Township: Pocopson
Subdivision: Baily Farm
Date: 2/9/00

SOIL LOG DESCRIPTIONS

Described By: S. Andress / Len Cornish (DEP)
Test Pit Number: 2/9/4

HORIZON	DEPTH (inches)		DISTINCTNESS OF BOUNDARY	TEXTURE	% COARSE FRAGMENT	COLOR	DRAINAGE MOTTLING		STRUCTURE		CONSISTENCE	COMMENTS
	Upper	Lower					ABUNDANCE	CONTRAST	TYPE	GRADE		
Ap	0	11		Si Lo	----		----	----	gran	w	fri	
Bt1	11	33		Si Lo	----		----	----	sbk	m	fri	
Bt2	33	49		Si Lo	----		----	----	sbk	m	fri	
C1	49	96		Si Lo	----		----	----	s	m	fri	

LIMITING ZONE DEPTH: 96"

DETERMINED BY: B.O.Pit

SLOPE: _____

WEATHER: Snow cover, above 40 F

ADDITIONAL COMMENTS: _____

SOIL DRAINAGE CLASS: _____

EVANS MILL ENVIRONMENTAL, INC.

County: Chester
Township: Pocopson
Subdivision: Baily Farm
Date: 2/9/00

SOIL LOG DESCRIPTIONS

Described By: S. Andress / Len Cornish (DEP)
Test Pit Number: 2/9/5

HORIZON	DEPTH (inches)		DISTINCTNESS	TEXTURE	% COARSE	COLOR	DRAINAGE MOTTLING		STRUCTURE		CONSISTENCE	COMMENTS
	Upper	Lower	OF BOUNDARY		FRAGMENT		ABUNDANCE	CONTRAST	TYPE	GRADE		
Ap	0	10		Si Lo	----		----	----	gran	m	fri	
Bt1	10	21		Si Lo	----		----	----	sbk	m	fri	
Bt2	21	34		Si Lo	----		----	----	sbk	w	fri	
B/C	34	72		Lo	----		----	----	s	m	fri	
C1	72	98		Lo	----		----	----	s	m	fri	

LIMITING ZONE DEPTH: 98"

DETERMINED BY: B.O.Pit

SLOPE: _____

WEATHER: Snow cover, above 40 F

ADDITIONAL COMMENTS: _____

SOIL DRAINAGE CLASS: _____

EVANS MILL ENVIRONMENTAL, INC.

County: Chester
Township: Pocopson
Subdivision: Baily Farm
Date: 2/9/00

SOIL LOG DESCRIPTIONS

Described By: S. Andress / Len Cornish (DEP)
Test Pit Number: 2/9/9

HORIZON	DEPTH (inches)		DISTINCTNESS OF BOUNDARY	TEXTURE	% COARSE FRAGMENT	COLOR	DRAINAGE MOTTLING		STRUCTURE		CONSISTENCE	COMMENTS
	Upper	Lower					ABUNDANCE	CONTRAST	TYPE	GRADE		
Ap	0	9		Si Lo	----		----	----	gran	m	fri	
Bt1	9	21		Si Lo	----		----	----	sbk	w	fri	
Bt2	21	32		Si Lo	----		----	----	sbk	m	fri	
B/C	32	55		Lo	----		----	----	s	m	fri	
C	55	88		Lo	----		----	----	s	m	fri	

LIMITING ZONE DEPTH: 92"

DETERMINED BY: B.O.Pit

SLOPE:

WEATHER: Snow cover, above 40 F

ADDITIONAL COMMENTS:

SOIL DRAINAGE CLASS:

EVANS MILL ENVIRONMENTAL, INC.

County: Chester
Township: Pocopson
Subdivision: Baily Farm
Date: 2/9/00

SOIL LOG DESCRIPTIONS

Described By: S. Andress / Len Cornish (DEP)
Test Pit Number: 2/9/10

HORIZON	DEPTH (inches)		DISTINCTNESS OF BOUNDARY	TEXTURE	% COARSE FRAGMENT	COLOR	DRAINAGE MOTTLING		STRUCTURE		CONSISTENCE	COMMENTS
	Upper	Lower					ABUNDANCE	CONTRAST	TYPE	GRADE		
Ap	0	13		Si Lo	----		----	----	gran	m	fri	
Bt1	13	31		Si Lo	----		----	----	sbk	m	fri	
Bt2	31	44		Si Lo	----		----	----	sbk	w	fri	
B/C	44	58		Lo	----		----	----	sbk	w	fri	
C	58	90		Lo	----		----	----	s	m	fri	

LIMITING ZONE DEPTH: 90"

DETERMINED BY: B.O.Pit

SLOPE: _____

WEATHER: Snow cover, above 40 F

ADDITIONAL COMMENTS: _____

SOIL DRAINAGE CLASS: _____

APPENDIX A-2:

Soil Profile Descriptions – Not Located in Wastewater Disposal Area

PIT NUMBER: 108

EVANS MILL ENVIRONMENTAL, INC.

EME NUMBER: 1541-00

SOIL EVALUATION FORM

DATE: 11/6/2003 STATE: PA COUNTY: Chester MUNICIPALITY: Pocopson

CLIENT Brandolini SUBDIVISION: Bailey SITE LOCATION: Wawasett and Locust Grove Road

MORPHOLOGIC DETERMINATION: **SEWAGE** STORMWATER SHWT SOILS INVESTIGATOR: Thomas M. Benusa, CPSSc

Horizon	Depth		Boundary		Color	Texture	% CFs	REDOX			Structure	Consistence	Roots	LOADING RATE	NOTES (% clay, macro pores)
	Upper	Lower	distinct	topo				A	S	C					
Ap	0	8	A/S		10YR 3/3	loam	5	_			1GR	friable	FF	0.34	
C1	8	24	C		7.5YR 5/6	gravelly heavy loam	15	_			1SBK	friable	_	0.34	
C2	24	61	C		variegated YR/BR/BY	heavy loam	10	_			0M	friable	_	0.34	
C3	61	120	_		variegated RY/BR/B	channery sandy loam	30	_			0M	friable	_	0.34	

COMMENTS:

SOIL TYPE: Glenelg

LIMITING CONDITION:
Type: Bottom of Pit
Depth: 120"

Soil Drainage Class:
_____ Excessively Drained
XX Well Drained
_____ Moderately Well Drained
____ Somewhat Poorly Drained
____ Poorly Drained
____ Very Poorly Drained

SIGNATURES:
SOIL SCIENTIST: Thomas M Benusa

THOMAS M. BENUSA
CERTIFIED PROFESSIONAL
SOIL SCIENTIST
NO 21617 EXP.

WEATHER: cloudy/cool/rain
SLOPE:
COVER: Corn

METHOD: Backhoe
EXCAVATION DEPTH: 120"
LANDSCAPE POSITION: Backslope

REDOX - Redoxymorphic features (Drainage Mottling) A/S/C - Abundance/Size/Contrast

101 Fellowship Road. PO Box 735
Uwchland, PA 19480

610-458-8300 (P)
610-458-7168 (F)

PIT NUMBER: 109

EVANS MILL ENVIRONMENTAL, INC.

EME NUMBER: 1541-00

SOIL EVALUATION FORM

DATE: 11/6/2003 STATE: PA COUNTY: Chester MUNICIPALITY: Pocopson

CLIENT Brandolini SUBDIVISION: Bailey SITE LOCATION: Wawasett and Locust Grove Road

MORPHOLOGIC DETERMINATION: **SEWAGE** STORMWATER SHWT SOILS INVESTIGATOR: Thomas M. Benusa, CPSSc

Horizon	Depth		Boundary		Color	Texture	% CFs	REDOX			Structure	Consistence	Roots	LOADING RATE	NOTES (% clay, macro pores)
	Upper	Lower	distinct	topo				A	S	C					
Ap	0	10	A		10YR 3/3	loam	_	_			1GR	friable	FF	0.34	
Bt	10	31	C		7.5YR 5/8	heavy loam	_	_			1SBK	friable	_	0.34	
C	31	125	C		variegated YR/BY/YB	channery sandy loam	25	_			0M	very friable	_	0.34	

COMMENTS:

SOIL TYPE: Glenelg

LIMITING CONDITION:

Type: Bottom of Pit

Depth: 125"

Soil Drainage Class:

____ Excessively Drained

__XX__ Well Drained

____ Moderately Well Drained

____ Somewhat Poorly Drained

____ Poorly Drained

____ Very Poorly Drained

SIGNATURES:

SOIL SCIENTIST:

Thomas M. Benusa

COMMONWEALTH OF PENNSYLVANIA
THOMAS M. BENUSA
CERTIFIED PROFESSIONAL
SOIL SCIENTIST
NO. 21617 EXP.

WEATHER: cloudy/cool/rain

SLOPE:

COVER: Corn

METHOD: Backhoe

EXCAVATION DEPTH: 125"

LANDSCAPE POSITION: Backslope

REDOX - Redoxymorphic features (Drainage Mottling) A/S/C - Abundance/Size/Contrast

101 Fellowship Road. PO Box 735
Uwchland, PA 19480

610-458-8300 (P)
610-458-7168 (F)

PIT NUMBER: 110

EVANS MILL ENVIRONMENTAL, INC.

EME NUMBER: 1541-00

SOIL EVALUATION FORM

DATE: 11/6/2003 STATE: PA COUNTY: Chester MUNICIPALITY: Pocopson

CLIENT Brandolini SUBDIVISION: Bailey SITE LOCATION: Wawasett and Locust Grove Road

MORPHOLOGIC DETERMINATION: **SEWAGE** STORMWATER SHWT SOILS INVESTIGATOR: Thomas M. Benusa, CPSSc

Horizon	Depth		Boundary		Color	Texture	% CFs	REDOX			Structure	Consistence	Roots	LOADING RATE	NOTES (% clay, macro pores)
	Upper	Lower	distinct	topo				A	S	C					
Ap	0	9	A/S		10YR 3/3	loam	_	_			1GR	friable	FF	0.34	
Bt	9	41	C/W		7.5YR 4/6	silt loam	_	_			2SBK	friable	_	0.34	
C	41	132	_		variegated R/B/Gray	channery sandy loam	30	_			0M	friable	_	0.34	

COMMENTS:

SOIL TYPE:
Glenelg
LIMITING CONDITION:
Type: Bottom of Pit
Depth: 132"

Soil Drainage Class:
_____ Excessively Drained
XX Well Drained
_____ Moderately Well Drained
____ Somewhat Poorly Drained
____ Poorly Drained
____ Very Poorly Drained

SIGNATURES:
SOIL SCIENTIST:

WEATHER: cloudy/cool/rain
SLOPE:
COVER: Corn

METHOD: Backhoe
EXCAVATION DEPTH: 132"
LANDSCAPE POSITION: Backslope

ARCPACS
THOMAS M. BENUSA
CERTIFIED PROFESSIONAL SOIL SCIENTIST
NO. 21617 EXP.

REDOX - Redoxymorphic features (Drainage Mottling) A/S/C - Abundance/Size/Contrast

101 Fellowship Road. PO Box 735
Uwchland, PA 19480

610-458-8300 (P)
610-458-7168 (F)

PIT NUMBER: 111

EVANS MILL ENVIRONMENTAL, INC.

EME NUMBER: 1541-00

SOIL EVALUATION FORM

DATE: 11/6/2003 STATE: PA COUNTY: Chester MUNICIPALITY: Pocopson

CLIENT Brandolini SUBDIVISION: Bailey SITE LOCATION: Wawasett and Locust Grove Road

MORPHOLOGIC DETERMINATION: **SEWAGE** STORMWATER SHWT SOILS INVESTIGATOR: Thomas M. Benusa, CPSSc

Horizon	Depth		Boundary		Color	Texture	% CFs	REDOX			Structure	Consistence	Roots	LOADING RATE	NOTES (% clay, macro pores)
	Upper	Lower	distinct	topo				A	S	C					
Ap	0	10	A/S		7.5YR 3/4	loam	_		_		1GR	friable	FF	0.34	
Bt	10	40	C/W		7.5YR 5/6	channery heavy loam	25		_		2SBK	friable	_	0.34	
C	40	125	_		variegated BY/YR/RB	very channery sandy loam	35-40		_		0M	very friable	_	0.34	

COMMENTS:

SOIL TYPE:
Glenelg
LIMITING CONDITION:
Type: Bottom of Pit
Depth: 125"

Soil Drainage Class:

____	Excessively Drained	____	Somewhat Poorly Drained
XX	Well Drained	____	Poorly Drained
____	Moderately Well Drained	____	Very Poorly Drained

SIGNATURES:
SOIL SCIENTIST:

WEATHER: cloudy/cool/rain
SLOPE:
COVER: Corn

METHOD: Backhoe
EXCAVATION DEPTH: 125"
LANDSCAPE POSITION: Backslope

REDOX - Redoxymorphic features (Drainage Mottling) A/S/C - Abundance/Size/Contrast

101 Fellowship Road. PO Box 735
Uwchland, PA 19480

610-458-8300 (P)
610-458-7168 (F)

PIT NUMBER: 112

EVANS MILL ENVIRONMENTAL, INC.

EME NUMBER: 1541-00

SOIL EVALUATION FORM

DATE: 11/6/2003 STATE: PA COUNTY: Chester MUNICIPALITY: Pocopson

CLIENT Brandolini SUBDIVISION: Bailey SITE LOCATION: Wawasett and Locust Grove Road

MORPHOLOGIC DETERMINATION: **SEWAGE** STORMWATER SHWT SOILS INVESTIGATOR: Thomas M. Benusa, CPSSc

Horizon	Depth		Boundary		Color	Texture	% CFs	REDOX			Structure	Consistence	Roots	LOADING RATE	NOTES (% clay, macro pores)
	Upper	Lower	distinct	topo				A	S	C					
Ap	0	9	A		7.5YR 3/3	loam	_		_		2GR	friable	FF	0.34	
Bt	9	25	C		7.5YR 5/6	silty loam	_		_		2SBK	friable	_	0.34	
C1	25	40	C		variegated R/RB/YB	channery loam	5		_		1SBK	friable	_	0.34	
C2	40	125	_		variegated RB/YR/BY	channery sandy loam	20		_		0M	very friable	_	0.34	

COMMENTS:

SOIL TYPE:
Glenelg
LIMITING CONDITION:
Type: Rock
Depth: 125"

Soil Drainage Class:
_____ Excessively Drained
XX Well Drained
_____ Moderately Well Drained
____ Somewhat Poorly Drained
____ Poorly Drained
____ Very Poorly Drained

SIGNATURES:
SOIL SCIENTIST:

COMMONWEALTH OF PENNSYLVANIA
THOMAS M. BENUSA
CERTIFIED PROFESSIONAL SOIL SCIENTIST
AO 21617 EXP.

WEATHER: cloudy/cool/rain
SLOPE: 10-15%
COVER: Corn

METHOD: Backhoe
EXCAVATION DEPTH: 125"
LANDSCAPE POSITION: Backslope

REDOX - Redoxymorphic features (Drainage Mottling) A/S/C - Abundance/Size/Contrast

101 Fellowship Road. PO Box 735
Uwchland, PA 19480

610-458-8300 (P)
610-458-7168 (F)

PIT NUMBER: 114

EVANS MILL ENVIRONMENTAL, INC.

EME NUMBER: 1541-00

SOIL EVALUATION FORM

DATE: 11/6/2003 STATE: PA COUNTY: Chester MUNICIPALITY: Pocopson

CLIENT Brandolini SUBDIVISION: Bailey SITE LOCATION: Wawasett and Locust Grove Road

MORPHOLOGIC DETERMINATION: **SEWAGE** STORMWATER SHWT SOILS INVESTIGATOR: Thomas M. Benusa, CPSSc

Horizon	Depth		Boundary		Color	Texture	% CFs	REDOX			Structure	Consistence	Roots	LOADING RATE	NOTES (% clay, macro pores)
	Upper	Lower	distinct	topo				A	S	C					
Ap	0	10			10YR 3/3	loam		_			1GR	friable	FF	0.34	
Bt	10	27			7.5YR 5/8	heavy silt loam		_			2SBK	friable	FF	0.34	
BC	27	44			variegated SB/B/RB	heavy loam		_			1SBK	friable	_	0.34	
C1	44	66			variegated SB/RB/YR	channery sandy loam		_			0M	friable	_	0.34	
C2	66	125			variegated BY/YR/SB	channery sandy loam		_			0M	very friable	_	0.34	

COMMENTS:

SOIL TYPE:
Glenelg
LIMITING CONDITION:
Type: Bottom of Pit
Depth: 125"

Soil Drainage Class:
_____ Excessively Drained
XX Well Drained
_____ Moderately Well Drained
____ Somewhat Poorly Drained
____ Poorly Drained
____ Very Poorly Drained

SIGNATURES:
SOIL SCIENTIST:

WEATHER: cloudy/cool/rain
SLOPE:
COVER: Corn

METHOD: Backhoe
EXCAVATION DEPTH: 125"
LANDSCAPE POSITION: Backslope

REDOX - Redoxymorphic features (Drainage Mottling) A/S/C - Abundance/Size/Contrast

101 Fellowship Road. PO Box 735
Uwchland, PA 19480

610-458-8300 (P)
610-458-7168 (F)

PIT NUMBER: 115

EVANS MILL ENVIRONMENTAL, INC.

EME NUMBER: 1541-00

SOIL EVALUATION FORM

DATE: 11/6/2003 STATE: PA COUNTY: Chester MUNICIPALITY: Pocopson

CLIENT Brandolini SUBDIVISION: Bailey SITE LOCATION: Wawasett and Locust Grove Road

MORPHOLOGIC DETERMINATION: **SEWAGE** STORMWATER SHWT SOILS INVESTIGATOR: Thomas M. Benusa, CPSSc

Horizon	Depth		Boundary		Color	Texture	% CFs	REDOX			Structure	Consistence	Roots	LOADING RATE	NOTES (% clay, macro pores)
	Upper	Lower	distinct	topo				A	S	C					
Ap	0	10	A/S		7.5YR 3/3	loam	_		_		1GR	friable		0.34	
Bt	10	21	C/W		7.5YR 5/8	heavy loam	5		_		2SBK	friable		0.34	
BC	21	30	C/W		variegated YR/RB/SB	channery sandy loam	20		_		1SBK	friable		0.34	
C	30	125	_		variegated Gray/RB/YR	very channery sandy loam	35-50		_		0M/SG	very friable		0.34	

COMMENTS:

SOIL TYPE:
Glenelg
LIMITING CONDITION:
Type: Bottom of Pit
Depth: 125"

Soil Drainage Class:
_____ Excessively Drained
__XX__ Well Drained
_____ Moderately Well Drained
___ Somewhat Poorly Drained
___ Poorly Drained
___ Very Poorly Drained

SIGNATURES:
SOIL SCIENTIST:

WEATHER: cloudy/cool/rain
SLOPE:
COVER: Corn

METHOD: Backhoe
EXCAVATION DEPTH: 125"
LANDSCAPE POSITION: Backslope

REDOX - Redoxymorphic features (Drainage Mottling) A/S/C - Abundance/Size/Contrast

101 Fellowship Road. PO Box 735
Uwchland, PA 19480

610-458-8300 (P)
610-458-7168 (F)

PIT NUMBER: 116

EVANS MILL ENVIRONMENTAL, INC.

EME NUMBER: 1541-00

SOIL EVALUATION FORM

DATE: 11/6/2003 STATE: PA COUNTY: Chester MUNICIPALITY: Pocopson

CLIENT Brandolini SUBDIVISION: Bailey SITE LOCATION: Wawasett and Locust Grove Road

MORPHOLOGIC DETERMINATION: **SEWAGE** STORMWATER SHWT SOILS INVESTIGATOR: Thomas M. Benusa, CPSSc

Horizon	Depth		Boundary		Color	Texture	% CFs	REDOX			Structure	Consistence	Roots	LOADING RATE	NOTES (% clay, macro pores)
	Upper	Lower	distinct	topo				A	S	C					
Ap	0	10	A/S		10YR 3/4	loam	_	_			1GR	friable	FF	0.34	
Bt	10	33	C/W		7.5YR 5/6	heavy silt loam	_	_			1SBK	friable	_	0.34	
BC	33	44	C/W		7.5YR 4/6	heavy loam	_	CMD			1SBK	friable	_	0.34	
C1	44	60	C/W		variegated RY/YR/BR	sandy loam	5	FMF			0M	friable	_	0.34	
C2	60	132	_		variegated Gray/PB/Wh	channery sandy loam	20	_			0SG	very friable	_	0.34	

COMMENTS:

SOIL TYPE:
Glenelg
LIMITING CONDITION:
Type: Bottom of Pit/DM
Depth: 132"/33"

Soil Drainage Class:
_____ Excessively Drained
_____ Well Drained
__XX__ Moderately Well Drained
____ Somewhat Poorly Drained
____ Poorly Drained
____ Very Poorly Drained

SIGNATURES:
SOIL SCIENTIST:

WEATHER: cloudy/cool/rain
SLOPE:
COVER: Corn

METHOD: Backhoe
EXCAVATION DEPTH: 132"
LANDSCAPE POSITION: Backslope

REDOX - Redoxymorphic features (Drainage Mottling) A/S/C - Abundance/Size/Contrast

101 Fellowship Road. PO Box 735
Uwchland, PA 19480

610-458-8300 (P)
610-458-7168 (F)

PIT NUMBER: 117

EVANS MILL ENVIRONMENTAL, INC.

EME NUMBER: 1541-00

SOIL EVALUATION FORM

DATE: 11/6/2003 STATE: PA COUNTY: Chester MUNICIPALITY: Pocopson

CLIENT Brandolini SUBDIVISION: Bailey SITE LOCATION: Wawasett and Locust Grove Road

MORPHOLOGIC DETERMINATION: **SEWAGE** STORMWATER SHWT SOILS INVESTIGATOR: Thomas M. Benusa, CPSSc

Horizon	Depth		Boundary		Color	Texture	% CFs	REDOX			Structure	Consistence	Roots	LOADING RATE	NOTES (% clay, macro pores)
	Upper	Lower	distinct	topo				A	S	C					
Ap	0	10	A/S		7.5YR 3/3	loam	_	_			1GR	friable	FF	0.34	
Bt	10	28	C/S		7.5YR 5/6	heavy loam	10	_			2SBK	friable	FF	0.34	
BC	28	35	C/W		variegated SB/Gray/RY	loam	10	_			1SBK	friable	_	0.34	
C1	35	72	C/W		variegated RY/RB/Gray	sandy loam	10	CFD			0M/SG	very friable	_	0.34	masses - soft
C2	72	125	_		variegated YR/Wh/SB	channery sandy loam	25				0M/SG	very friable	_	0.34	

COMMENTS: Groundwater present at 110" bgs. Soil satuated @ 90"

SOIL TYPE:
Glenelg
LIMITING CONDITION:
Type: Bottom of Pit
Depth: 125"

Soil Drainage Class:
_____ Excessively Drained
XX Well Drained
_____ Moderately Well Drained
____ Somewhat Poorly Drained
____ Poorly Drained
____ Very Poorly Drained

SIGNATURES:
SOIL SCIENTIST:

WEATHER: cloudy/cool/rain
SLOPE: 15-20%
COVER: Corn

METHOD: Backhoe
EXCAVATION DEPTH: 125"
LANDSCAPE POSITION: Footslope/Backslope

REDOX - Redoxymorphic features (Drainage Mottling) A/S/C - Abundance/Size/Contrast

101 Fellowship Road. PO Box 735
Uwchland, PA 19480

ARCPACS
THOMAS M. BENUSA
CERTIFIED PROFESSIONAL
610-458-8300 (B)
610-458-7168 (F)
SOIL SCIENTIST
PA 21617

PIT NUMBER: 121

EVANS MILL ENVIRONMENTAL, INC.

EME NUMBER: 1541-00

SOIL EVALUATION FORM

DATE: 11/21/2003 STATE: PA COUNTY: Chester MUNICIPALITY: Pocopson

CLIENT Brandolini SUBDIVISION: Bailey SITE LOCATION: Wawasett and Locust Grove Road

MORPHOLOGIC DETERMINATION: **SEWAGE** STORMWATER SHWT SOILS INVESTIGATOR: Thomas M. Benusa, CPSSc

Horizon	Depth		Boundary		Color	Texture	% CFs	REDOX			Structure	Consistence	Roots	LOADING RATE	NOTES (% clay, macro pores)
	Upper	Lower	distinct	topo				A	S	C					
Ap	0	10	A/S		10YR 3/4	gravelly loam	15		_		2MGR	friable			
Bt	10	24	C/S		7.5YR 5/6	silt loam			_		2MSBK	friable			
BC	24	41	C/W		10YR 4/4	heavy loam			_		1MSBK	friable			
C	41	84	_		variegated	channery sandy loam	15		_		OM	very friable			

COMMENTS:

SOIL TYPE:

LIMITING CONDITION:
Type:
Depth:

Soil Drainage Class:

____ Excessively Drained	____ Somewhat Poorly Drained
XX Well Drained	____ Poorly Drained
____ Moderately Well Drained	____ Very Poorly Drained

SIGNATURES:

SOIL SCIENTIST:

Thomas M. Benusa

ARCPACS

THOMAS M. BENUSA
CERTIFIED PROFESSIONAL
SOIL SCIENTIST
NO 21617 EXP.

WEATHER: _____

SLOPE: _____

COVER: _____

METHOD: _____

EXCAVATION DEPTH: _____

LANDSCAPE POSITION: _____

REDOX - Redoxymorphic features (Drainage Mottling) A/S/C - Abundance/Size/Contrast

101 Fellowship Road. PO Box 735
Uwchland, PA 19480

610-458-8300 (P)
610-458-7168 (F)

EVANS MILL ENVIRONMENTAL, INC.

County: Chester
Township: Pocopson
Subdivision: Baily Farm
Date: 2/9/00

SOIL LOG DESCRIPTIONS

Described By: S. Andress / Len Cornish (DEP)
Test Pit Number: 2/9/6

HORIZON	DEPTH (inches) Upper	Lower	DISTINCTNESS OF BOUNDARY	TEXTURE	% COARSE FRAGMENT	COLOR	DRAINAGE MOTTLING ABUNDANCE	CONTRAST	STRUCTURE TYPE	GRADE	CONSISTENCE	COMMENTS
Ap	0	10		Si Lo	----		----	----	gran	m	fri	
Bt1	10	23		Si Lo	----		----	----	sbk	w	fri	
B/C	23	58		Si Lo	----		----	----	s	m	fri	
C	58	98		Si Lo	----		----	----	s	m	fri	

LIMITING ZONE DEPTH: 98"

DETERMINED BY: B.O.Pit

SLOPE: _____

WEATHER: Snow cover, above 40 F

ADDITIONAL COMMENTS: _____

SOIL DRAINAGE CLASS: _____

EVANS MILL ENVIRONMENTAL, INC.

County: Chester
Township: Pocopson
Subdivision: Baily Farm
Date: 2/9/00

SOIL LOG DESCRIPTIONS

Described By: S. Andress / Len Cornish (DEP)
Test Pit Number: 2/9/7

HORIZON	DEPTH (inches) Upper	Lower	DISTINCTNESS OF BOUNDARY	TEXTURE	% COARSE FRAGMENT	COLOR	DRAINAGE MOTTLING ABUNDANCE	CONTRAST	STRUCTURE TYPE	GRADE	CONSISTENCE	COMMENTS
Ap	0	13		Si Lo	----		----	----	gran	m	fri	
Bt1	13	29		Si Lo	----		----	----	sbk	m	fri	
Bt2	29	56		Si Lo	----		----	----	sbk	w	fri	
C	56	90		Si Lo	----		----	----	sbk	w	fri	

LIMITING ZONE DEPTH: 90"

DETERMINED BY: B.O.Pit

SLOPE: _____

WEATHER: Snow cover, above 40 F

ADDITIONAL COMMENTS: _____

SOIL DRAINAGE CLASS: _____

EVANS MILL ENVIRONMENTAL, INC.

County: Chester
Township: Pocopson
Subdivision: Baily Farm
Date: 2/9/00

SOIL LOG DESCRIPTIONS

Described By: S. Andress / Len Cornish (DEP)
Test Pit Number: 2/9/8

HORIZON	DEPTH (inches)		DISTINCTNESS OF BOUNDARY	TEXTURE	% COARSE FRAGMENT	COLOR	DRAINAGE MOTTLING		STRUCTURE		CONSISTENCE	COMMENTS
	Upper	Lower					ABUNDANCE	CONTRAST	TYPE	GRADE		
Ap	0	19		Si Lo	----		----	----	gran	m	fri	
Bt1	19	40		Si Lo	----		----	----	sbk	w	fri	
C/B	40	56		Si Lo	----		----	----	sbk	m	fri	
C	56	92		Lo	----		----	----	s	m	fri	

LIMITING ZONE DEPTH: 92"

DETERMINED BY: B.O.Pit

SLOPE: _____

WEATHER: Snow cover, above 40 F

ADDITIONAL COMMENTS: _____

SOIL DRAINAGE CLASS: _____

APPENDIX B:

EME Soil Scientist Qualifications

SUSAN AHERN
PROFESSIONAL PROFILE

CREDENTIALS

BS - Environmental Science, East Stroudsburg University, 1979.
Completed Graduate Level Coursework for MS in Environmental Health, West Chester University.

Recent Continuing Education-Bog Turtles and the Environmental Review Process in PA; National Hydric Soils Workshop; CORPS' Basic Wetland Delineation Course; Principles of Wetland Design; Soils Interpretation; Advanced Soils; Alternate and Experimental Sewage Disposal Systems; Drip Irrigation On-lot Sewage Disposal; PA Act 2 Regulations and Procedures Workshop

CERTIFICATIONS and PROFESSIONAL ASSOCIATIONS

Certified Pennsylvania Sewage Enforcement Officer, since 1979.
OSHA 40-Hour Hazardous Waste Operation Training
American Heart Association Adult CPR Course Certified
National Onsite Wastewater Recycling Association
PA Association of Sewage Enforcement Officers
PA Association of Environmental Professionals

FIELDS OF SPECIALIZATION

Over 23 years of experience in various environmental fields; Site planning and design of wastewater disposal facilities; soils evaluations; wetland delineation, impact permitting and mitigation design; PNDI coordinations and Phase 1 bog turtle habitat assessments; general environmental impact assessments; ASTM Phase I and II environmental site assessments, NPDES stormwater infiltration studies; NPDES industrial stormwater permitting and pollution prevention plans;

EXPERIENCE SUMMARY

Conducted and coordinated site evaluations primarily of non-tidal wetlands, including detailed wetland boundary delineations for over 300 development sites; obtained CORPS jurisdictional boundary approvals on over 50 project sites.

Prepared both state and federal permit applications for planned activities within wetlands, including the submission of joint permit applications including environmental assessments, general permit requests, waiver requests, nation-wide permit requests, State Water Quality Certification requests, and wetland mitigation design and monitoring.

Performed Phase 1 Habitat Assessments for the identification of potential bog turtle habitat for concurrence with the US Fish and Wildlife Service and the PA Fish and Boat Commission.

Resolved potential conflicts with threatened and endangered plant and animal species on various subdivision and land development project sites.

Performed numerous soil investigations to address municipal ordinances regarding alluvial soils, high-groundwater soils, hydric soils, etc.

Conducted and coordinated site evaluations and feasibility studies to determine suitability for various types of land-based wastewater disposal systems. Project sites included individual residential lots, community residential developments, commercial developments, and recreational/educational sites; provided expert testimony at municipal hearings and Commonwealth court.

Coordinated over 400 projects requiring the preparation and submission of Planning Modules for Land Development to obtain Sewage Facilities Planning approval through the Pennsylvania Department of Environmental Protection; efforts included performing hydrogeologic studies under the guidance of PA registered geologist.

During prior employment with the CCHD, worked as a PA Sewage Enforcement Officer-responsible for sewage permit enforcement and Act 537 plan reviews for 18 municipalities in Chester County; Supervisor of the County Sewage and Water Programs - responsible for oversight of all Act 537 sewage facilities planning and permitting activities, as well as the County water well program municipal zoning hearings and state permitting for such studies.

Assisted County Health Department with conducting sewage facilities needs assessment as part of an area-wide municipal Act 537 plan update.

Performed over 100 Phase I Environmental Site Assessments in accordance with ASTM Standards; sites included residential, agricultural, commercial and industrial properties; coordinated Environmental Site Assessment projects involving PA Act II compliance.

Performed site assessment and sampling activities associated with removal of underground storage tanks, including PADEP reporting and followup site assessment and remediation activities in accordance with Act II standards; .

Managed stormwater projects for industrial clients to achieve compliance with the State NPDES Stormwater Discharge requirements. Work efforts included site evaluations and permitting, preparation of Preparedness, Prevention, and Contingency Plans, preparation of sampling and analysis plans for stormwater discharges, and on-going monitoring and reporting.

Performed soil evaluations and testing on project sites to determine the feasibility for stormwater infiltration; provided permeability data and analysis to design engineers for stormwater infiltration facility designs.

THOMAS M. BENUSA
PROFESSIONAL PROFILE

REGISTRATION

ARCPACS Certified Professional Soil Scientist (CPSSc)
Pennsylvania Association of Professional Soil Scientists (PAPSS) member
American Society of Agronomy (ASA) member
Pennsylvania Certified Sewage Enforcement Officer (PASEO)

CREDENTIALS

B.S., Agronomy - Delaware Valley College of Science and Agriculture (1984)
Subsurface Sewage Disposal and Design Class - Cook College, Rutgers University (1991)
Applied Soil Science for Remediation of Contaminated Soil - Cook College, Rutgers University, (1997)
PASEO/PADEP – PASEO continuing Education Classes including IRSIS Design, Drip Emitter Design, Soil Descriptions & Investigations.
USEPA – HYDRIC Soil Committee Classes.

FIELDS OF SPECIALIZATION

Soil morphological characterization and interpretations; environmental soil investigations and mapping; community and individual subsurface sewage disposal design; alternate and experimental subsurface sewage disposal siting and design; wetland identification and delineation, seasonal high groundwater determinations, installation and construction of overburden groundwater monitor wells; Underground storage tank removal; Phase I environmental site assessments; collection of groundwater, surface water, soil, and sediment samples; agricultural consulting; Sports field maintenance and construction, and turf management.

EXPERIENCE SUMMARY

Fifteen years of technical experience in surface soils and overburden investigation, interpretation, mapping, and sampling in Pennsylvania, New Jersey, Georgia, Kansas, New York, Ohio, Maryland, Delaware, Virginia, West Virginia, and Wisconsin.

More than five years of experience in the design of subsurface wastewater disposal systems, community wastewater disposal systems, and alternate and experimental designs in Pennsylvania and New Jersey.

Five years of experience in Phase 1 and Phase 2 environmental site assessments and UST removal and remediation.

Three years experience completing wetland indentification and delineation according to USACOE 1987 manual procedures.

Report writing, Data analysis and comparison, Proposal writing and costing, field team supervision, and client assistance.

APPENDIX C-1:

American Onsite Design Standards

AMERICAN MANUFACTURING
SOIL LOADING RATE TABLE

This is based on a standard tubing spacing between runs of 2 feet on center. Therefore a typical area loading rate would be a number which is one half the linear feet loading rate number. For example, for a 1.2 gallons/L.ft./day rate would be equivalent to 0.6 gallons/ft^2/day. Spacing may be changed for specific site conditions. For example: a tubing loading rate of 0.4 is an area load of 0.2. By placing the tubing 1' on center, the resulting area loading would be at 0.4, or 1/2 of the area. This can only be done with proper site and soil evaluation.

Site suitability, loading rate, and installation depth determination must be assigned based on thorough site/soil evaluation. The characterization of a soil based receiver site involves a systematic evaluation by trained individuals. Conditions to consider consist of a variety of topographic and soil conditions such as landscape position, slope, soil depth, depth to water table, depth to restriction, soil consistence, clay mineralogy, compaction, density, and site geometry and uniformity.

Soil Textures	Soil Structure	Maximum Monthly Average BOD5 > 30mg/L BOD < 220mg/L		Maximum Monthly Average BOD5 < 30mg/L	
		(gal./ft^2/day)	(gal./LF/day)	(gal./ft^2/day)	(gal./LF/day)
Course sand or courser	N/A	.3 - .4	.6 - .8	.3 - 1.6	.6 - 3.2
Loamy coarse sand	N/A	.25 - .3	.5 - .6	.25 - 1.4	.5 - 2.8
Sand	N/A	.25 - .3	.5 - .6	.25 - 1.2	.5 - 2.4
Loamy sand	Weak to strong	.25 - .3	.5 - .6	.25 - 1.4	.5 - 2.4
	Massive	.15 - .2	.3 - .4	.15 - .7	.3 - 1.4
Fine sand	Moderate to strong	.25 - .3	.5 - .6	.25 - .9	.1 - 1.8
	Massive or weak	.15 - .2	.3 - .4	.15 - 0.6	.3 - 1.2
Loamy fine sand	Moderate to strong	.2 - .3	.4 - 0.6	.2 - 0.9	.4 - 1.8
	Massive or weak	.15 - .2	.3 - .4	.15 - .6	.3 - 1.2
Very fine sand	N/A	.15 - .2	.3 - .4	.15 - .6	.3 - 1.2
Loamy very fine sand	N/A	.15 - 0.2	.3 - .4	.15 - .6	.3 - 1.2
Sandy loam	Moderate to strong	.15 - 0.2	.3 - .4	.15 - 1	.3 - 2
	Weak, weak platy	.15 - 0.2	.3 - .4	.15 - .6	.3 - 1.2
	Massive	< .1	< .2	.1 - .5	.2 - 1
Loam	Moderate to strong	.15 - .2	.3 - .4	.15 - .9	.3 - 1.8
	Weak, weak platy	.1 - 0.2	.2 - .4	.1 - .6	.2 - 1.2
	Massive	< .1	< .2	.1 - .5	.2 - 1
Silt loam	Moderate to strong	.15 - .2	.3 - .4	.15 - .8	.3 - 1.6
	Weak, weak platy	< .1	< .2	.1 - .3	.2 - .6
	Massive	0	0	.1 - .2	.2 - .4
Sandy clay loam	Moderate to strong	.15 - .2	.3 - .4	.15 - .6	.3 - 1.2
Clay loam	Weak, weak platy	< .1	< .2	.1 - .3	.2 - .6
	Weak, weak platy	< .1	< .2	.1 - .3	.2 - .6
	Moderate to strong	.1 - .2	.2 - .4	.1 - .6	.2 - 1.2
Silty clay loam	Weak, weak platy	< .1	< .2	.1 - .3	.2 - .6
	Massive	0	0	0	0
	Moderate to strong	.1 - .2	.2 - .4	.1 - .6	.2 - 1.2
Sandy clay	Moderate to strong	< .1	< .2	.1 - .3	.2 - .6
	Massive to weak	0	0	0	0
Clay	Moderate to strong	< .1	< .2	.1 - .3	.2 - .6
	Massive to weak	0	0	0	0
Silty clay	Moderate to strong	< .1	< .2	.1 - .3	.2 - .6
	Massive to weak	0	0	0	0

APPENDIX C-2:

Geoflow Design Standards

TABLE 1. MINIMUM SURFACE AREA GUIDELINES TO DISPOSE OF 100 GPD OF SECONDARY TREATED EFFLUENT

		Soil Absorption Rates		Design	Total
Soil Class	Soil Type	Est. Soil Perc. Rate minutes/in	Hydraulic Conductivity inches/hr	Hydraulic Loading Rate gal/sq. ft. per day	Area Required sq. ft./100 gallons per day
I	Coarse sand	<5	>2	1.400	71.5
I	Fine sand	5 - 10	1.5 - 2	1.200	83.3
II	Sandy loam	10 - 20	1.0 - 1.5	1.000	100.0
II	loam	20 - 30	0.75 - 1.0	0.700	143.0
III	Clay loam	30 - 45	0.5 - 0.75	0.600	167.0
III	Silt - clay loam	45 - 60	0.3 - 0.5	0.400	250.0
IV	Clay non-swell	60 - 90	0.2 - 0.3	0.200	500.0
IV	Clay - swell	90 - 120	0.1 - 0.2	0.100	1000.0
IV	Poor clay	>120	<0.1	0.075	1334.0

Dispersal field area calculation:
Total square feet area of dispersal field = Design flow divided by loading rate

Table 1 shows the recommended hydraulic loading rates for various soil conditions, using a safety factor of at least 12 with regard to the equilibrium saturated hydraulic conductivity rate of the soil. These loading rates assume a treated effluent with BOD and TSS values of less than 30 mg/l is produced in the pre-treatment system and that any anomalies such as iron bacteria have been removed prior to dosing.

APPENDIX C-3

Wisconsin Design Standards

Table 83.44-2

Maximum Soil Application Rates Based Upon Morphological Soil Evaluations

Soil Texture	Soil Structure	Maximum Monthly Average: BOD_5 > 30 < 220 mg/L, TSS > 30 < 150 mg/L (gals/sq ft/day)	Maximum Monthly Average: BOD_5 < 30 mg/L, TSS < 30 mg/L (gals/sq ft/day)
Coarse sand or coarser	N/A	0.7	1.6
Loamy coarse sand	N/A	0.7	1.4
Sand	N/A	0.7	1.2
Loamy sand	Weak to strong	0.7	1.2
Loamy sand	Massive	0.5	0.7
Fine sand	Moderate or strong	0.5	0.9
Fine sand	Massive or weak	0.4	0.6
Loamy fine sand	Moderate or strong	0.5	0.9
Loamy fine sand	Massive or weak	0.4	0.6
Very fine sand	N/A	0.4	0.6
Loamy very fine sand	N/A	0.4	0.6
Sandy loam	Moderate or strong	0.5	0.9
Sandy loam	Weak, weak platy	0.4	0.6
Sandy loam	Massive	0.3	0.5
Loam	Moderate or strong	0.5	0.8
Loam	Weak, weak platy	0.4	0.6
Loam	Massive	0.3	0.5
Silt loam	Moderate or strong	0.5	0.8
Silt loam	Weak, weak platy	0.2	0.3
Silt loam	Massive	0.0	0.2
Sandy clay loam	Moderate or strong	0.4	0.6
Sandy clay loam	Weak, weak platy	0.2	0.3
Sandy clay loam	Massive	0.0	0.0
Clay loam	Moderate or strong	0.4	0.6
Clay loam	Weak, weak platy	0.2	0.3
Clay loam	Massive	0.0	0.0
Silty clay loam	Moderate or strong	0.4	0.6
Silty clay loam	Weak, weak platy	0.2	0.3
Silty clay loam	Massive	0.0	0.0
Sandy clay	Moderate or strong	0.2	0.3
Sandy clay	Massive or weak	0.0	0.0
Clay	Moderate or strong	0.2	0.3
Clay	Massive or weak	0.0	0.0
Silty clay	Moderate or strong	0.2	0.3
Silty clay	Massive or weak	0.0	0.0

N/A means Not Applicable

FIGURE 1: USGS SITE LOCATION MAP

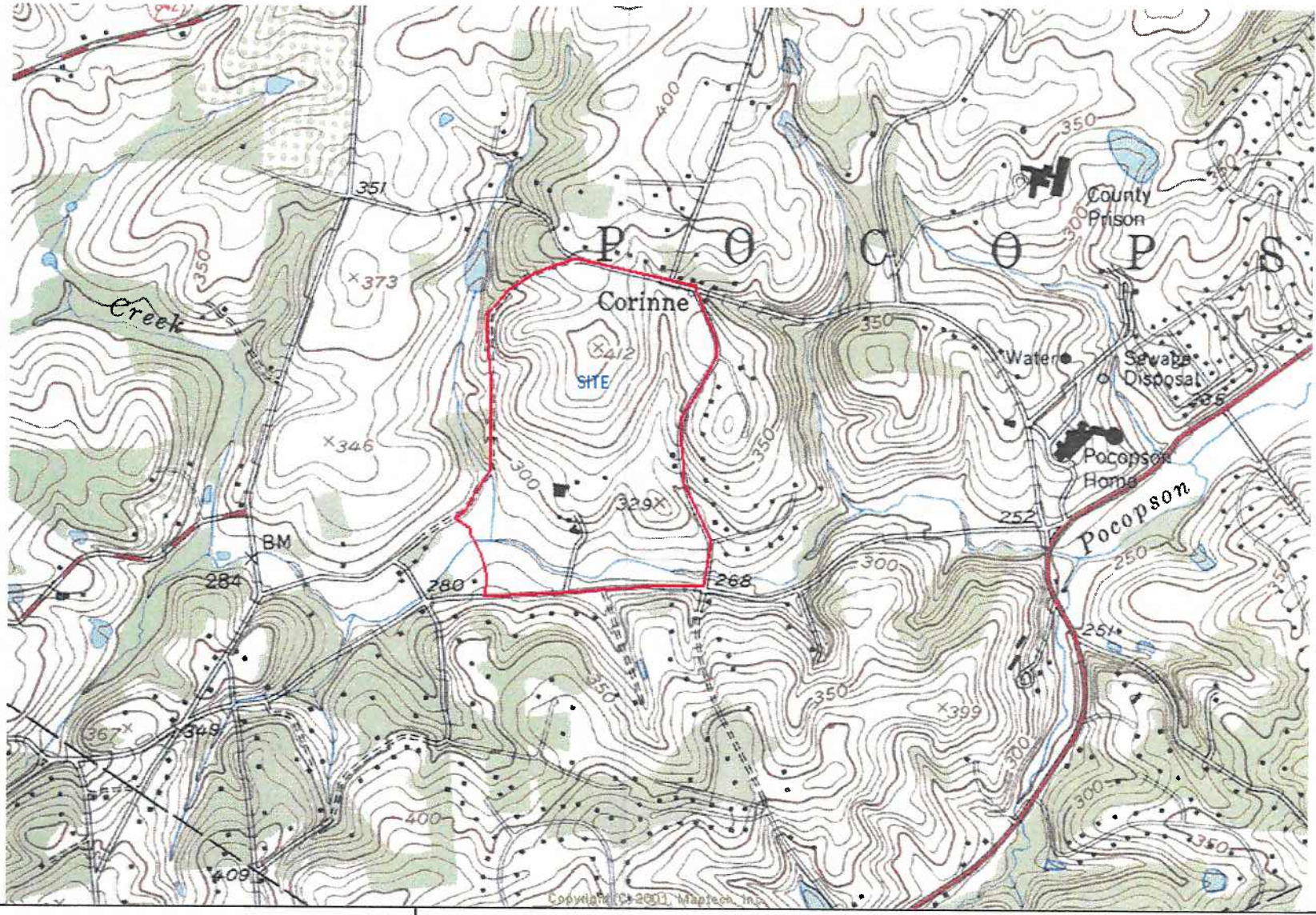


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FIGURE 2 - BAILY FARM

Lenape-Unionville & Locust Grove Roads; Pocopson Township; Chester County, PA

U. S. G. S. QUADRANGLE - UNIONVILLE, PA

Scale: 1" = 2,000'	Date: October 30, 2003	By: Aml	EME No: 1541-00

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APPENDIX B

APPENDIX B:
Hydrogeological Assessment of Proposed Subsurface Sewage Disposal Infiltration Areas

APPENDIX B

HYDROGEOLOGICAL ASSESSMENT of PROPOSED SUBSURFACE SEWAGE DISPOSAL INFILTRATION AREA

Prepared for:

CORINNE DEVELOPMENT, LLC
Corinne Village Subdivision
Pocopson Township
Chester County, Pennsylvania

Prepared by:

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SCOTT R. MUNDELL, P.G.
HYDROGEOLOGIST

February 18, 2004
Revised: March 11, 2005

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HYDROGEOLOGICAL ASSESSMENT

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1.0 INTRODUCTION

The following investigation was performed to obtain site-specific geological and hydrogeological data for a proposed onsite wastewater disposal system serving the Corinne Village Development. The development is proposing a sewage disposal system by land application that will be required to obtain a permit from the Pennsylvania Department of Environmental Protection (PaDEP) for the wastewater system. As part of the permitting process, the applicant, Corinne Development, LLC, is required to evaluate site suitability to accept and treat the proposed wastewater application.

The proposed Corinne Village development is located on the north side of Lenape-Unionville Road, west side of Locust Grove Road and east side of Larkin-Baily Road in Pocopson Township, Chester County, PA. The 121.5-acre site is identified as Tax Parcel No. 63-3-84. The location of the project is shown on *Figure 1.*

1.1 Background

The developer of the Corinne Village property is intending to construct a single-family residential development on 121.5 acres. A public water supplier will handle potable water service, and sewerage facilities will be provided by a community, onsite, land based sewage disposal system. The anticipated daily average wastewater load from the project is 20,213 gallons per day (gpd). This anticipated flow includes allowances for a specified number of off-site connections as requested by Pocopson Township. A detailed breakdown of flow is provided in the Sewage Facilities Planning Module (SFPM) Component 3, Section F – Project Narrative.

An investigation was conducted on the subject property in early 2000 for a proposed residential development. A proposed disposal site, located approximately 1,650 feet north of Lenape-Unionville Road and 700 feet west of Locust Grove Road, was tested and found suitable for the disposal needs of the proposed development. However, the original developer discontinued the project and no approvals were obtained. The current project proposes a land application system in a slightly different location from the original study. Due to changes in the plan and lot configuration, the proposed disposal area configuration has been modified and the location has shifted to the north and west from the originally tested area. This investigation therefore combines the results from testing in 2000 with additional testing conducted in late 2003-early 2004. The proposed disposal area is situated approximately 1,750 feet north of Lenape-Unionville Road, 750 feet west of Locust Grove Road, and 625 feet south of Corrine Road, on the topographically high point on the subject property. The disposal site is 3.89 acres and is irregularly shaped. The infiltration area location relative to current overall site conditions is shown on *Plate 1: Sewage Facilities Plan* included with this report.

1.2 Purpose

This investigation was performed to evaluate the site-specific hydrogeological data to determine if the site is suitable to infiltrate and transmit the effluent into the

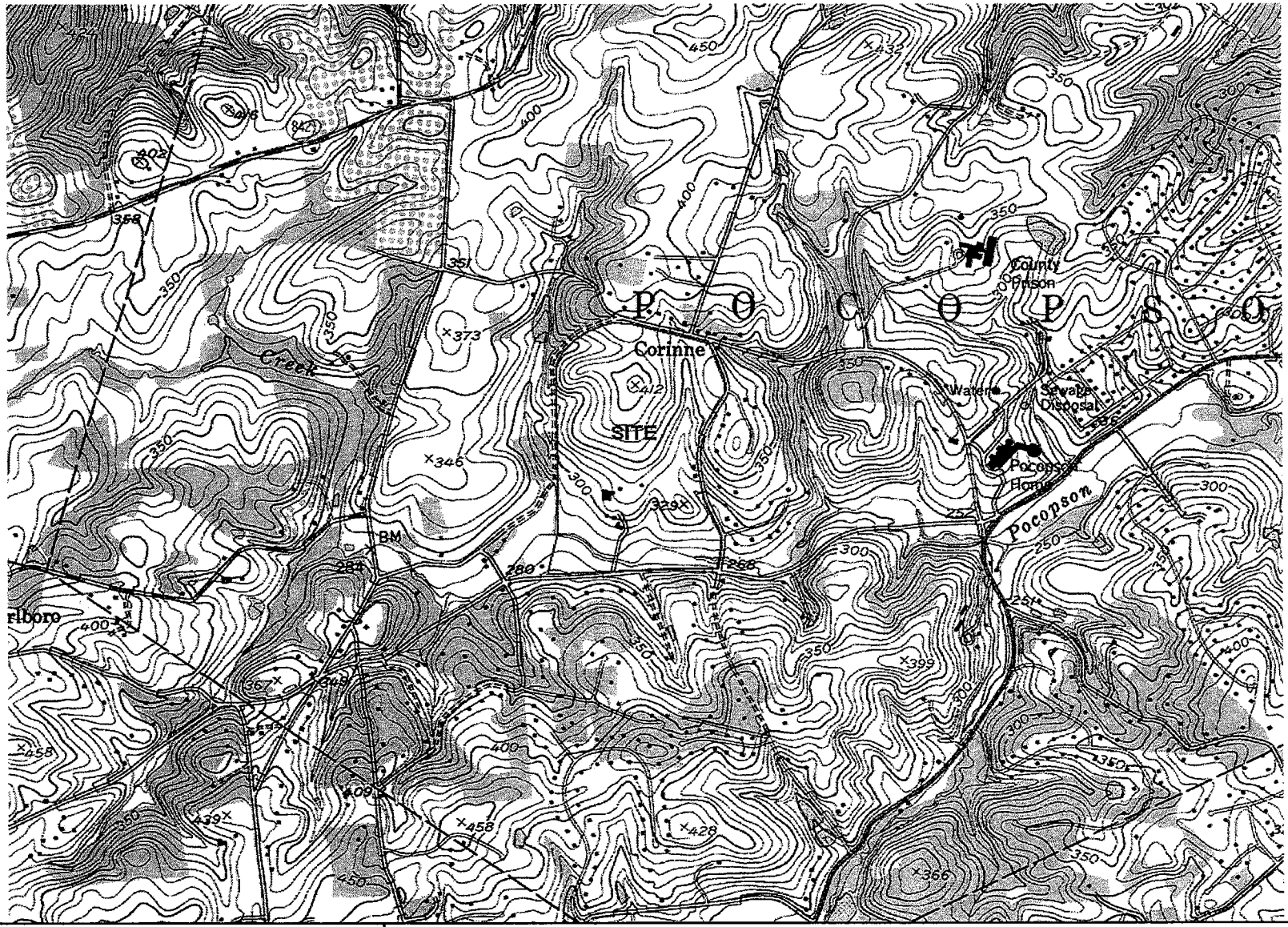

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FIGURE 1 – SITE LOCATION MAP

Corinne Development, Lenape-Unionville/Locust Grove Roads, Pocopson Twp., Chester Co.

Scale: ~1:24,000 Unionville Quad	Date: February 9, 2004	By: HS	No: 1541-00

hydrogeological system. Large volume infiltration areas are sensitive to the effects of groundwater mounding. These mounds have the potential to cause inadequate effluent renovation and/or limited subsurface movement of effluent causing system malfunction. Therefore, it is important to properly evaluate the site of a proposed large volume on-lot sewage disposal system for permeability of the materials beneath the site.

1.3 Scope

The scope of this investigation included: constructing soil borings and groundwater monitoring wells in the vicinity of the proposed absorption area. Testing of wells was performed to determine site-specific aquifer hydraulic conductivity and aquifer transmissivity. Monitoring well water levels were measurements to determine groundwater elevations and flow direction. Aquifer hydrogeological parameters were input into a computer model to simulate the affects of the proposed drip area and wastewater application on the groundwater system. The model is an analysis tool to ascertain that adequate dispersion of wastewater will occur. Monitoring well water samples were collected to determine background groundwater quality. Finally, background water quality and groundwater flow were evaluated to determine nitrogen dispersion from the proposed system.

1.4 Soils

Soils onsite and beneath the proposed disposal area were evaluated in a separate detailed Soil Morphologic Assessment prepared by Evans Mill Environmental, Incorporated (EME). The soils report is included in this SFPM submission separately from the hydrogeologic assessment and evaluates the hydraulic loading rate in the proposed disposal area from soil morphological descriptions. Based on the soils evaluation, all soils within the proposed infiltration area are classified as deep, well drained.

1.5 Geology

Bedrock beneath the proposed absorption area is mapped as Wissahickon Schist. Sloto[1] describes the Wissahickon as:

> *"Light-to medium -gray, quartzo-aluminous schist and gneiss. Composition ranges from quartz-orthoclase-biotite and orthoclase-quartz-muscovite schist to quartz-biotite-plagioclase and quartz-plagioclase-biotite schistose gneiss. Moderately high metamorphic grade, mostly in the amphibolite facies."*

Geyer and Wilshusen[2] report the Wissahickon as: coarsely crystalline which is excessively micaceous; moderately resistant to weathering and often highly weathered

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[1] Sloto, Ronald A., (1994), *Geology , Hydrology, and Ground-Water Quality of Chester County,* Chester County Water Resources Authority and U.S. Geological Survey, West Chester, PA, Water-Resource Report 2.

[2] Geyer, A. R. and Wilshusen, J. P., (1982), *Engineering Characteristics of the Rocks of Pennsylvania*, Pennsylvania Topographic and Geological Survey, Harrisburg, Env. Geol. Rpt. 1, 4th Series.

(bleached or iron stained throughout) to a moderate depth. Subsequently, the overlying soil mantle, not including saprolite materials, is usually thin (0-5 feet). The Wissahickon is reported to have fissile to thin bedding which is steeply (45^0-85^0) dipping in most places. Joints are mostly irregular, poorly formed, widely spaced (3 -10 feet), steeply (45^0-85^0) dipping and open. Joints and cleavage openings provide a low secondary porosity. Permeability is reported to be low with a range from 0.2 to 3.0 ft/day. The median yield of wells tapping the Wissahickon is reported as 20 gallons per minute (gpm); although, wells that obtain their water from the weathered zone or are located on fractures have significantly higher yields. Groundwater is typically encountered in the weathered/fractured materials located near the top of bedrock.

2.0 DRILLING

2.1 Test Borings

Borings and wells were constructed by C. S. Garber and Sons, Inc., of Boyertown, PA. Locations were selected by EME and were utility cleared via the PA One Call system prior to drilling. In accordance with DEP policy, local municipal officials were invited to observe drilling activities in December 2003, but no local municipal representatives attended or requested to be in attendance. Standard penetration testing (SPT) with split-spoon soil sampling techniques were used to observe the unconsolidated materials penetrated by the bore. Shallower soils materials (zero to eight feet below grade) were classified by the project's ARCPACS Certified Soil Scientist and were therefore not sampled during the standard penetration testing. SPT continued until dense saprolite/weathered rock layers were encountered which prohibited driving of the split-spoon sampler. A density of 50 blows or more for 6 inches or less was used as an indication of dense saprolite/weathered rock materials. The bore was then advanced using air rotary drilling methods and logged by visual observation of the drilling cuttings for installation of a monitoring well.

2.2 Monitoring Well Construction

Plate 2: Disposal Area Plan shows the proposed infiltration area and monitoring well locations relative to the disposal site. Overall, six monitoring wells, labeled MW-1 through MW-6, were constructed on the project site. Three wells, MW-1, MW-2 and MW-3, were constructed during the first phase of the investigation in March 2000, and three additional monitoring wells, identified as MW-4, MW-5 and MW-6, were constructed in December 2003. Drilling was directed at all times by an EME Geologist or a Geological Technician under the direction of a Pennsylvania certified Professional Geologist. Monitoring well logs for the six (6) wells MW-1 through MW-6 showing materials encountered and construction techniques are included in **Appendix A.**

Monitoring wells 1 through 6 are of screened well construction techniques. Both open bore and screened wells were constructed at the MW-3 location as part of the earlier investigation. At MW-3, rock well construction techniques were first used, but missed the shallow groundwater table. Steel casing was set to a depth of 47 feet into competent bedrock and there was no apparent yield after 97 feet of drilling. Without a measurable

yield at this well, MW-3 was re-drilled approximately five feet from its original location in an attempt to set screen at the top of the shallow aquifer. Screened monitoring wells were constructed with 15 to 30 linear feet of four-inch diameter, 0.02-inch slotted, schedule 40, threaded flush joint (TFJ), PVC well screen and finished with solid four-inch diameter, TFJ, PVC riser. Number 2 Morie gravel was placed around the well screens to approximately two to three feet above the screen. A bentonite clay seal was placed above the gravel pack and the remaining annulus between the well pipe and bore was filled with neat cement grout. All monitoring wells were finished with six-inch diameter steel stick-up protector casings and locking caps with locks.

2.3 Subsurface Profile

Well and test boring lithological information was compiled and reviewed by EME's Professional Geologist. Generally, an 8 to 13.5 foot layer of silt and sandy silt was observed overlying a 5 to 16 foot thick layer of saprolite to weathered rock. Saprolite is soft, earthy, thoroughly decomposed rock formed in place by chemical weathering of igneous or metamorphic rocks. The saprolite is characteristic of preservation of structures that were present in the unweathered parent rock. It is typically encountered shallow in the profile and can be several feet to tens of feet thick. Saprolite closely resembles permeable sands and gravels and silty sands. The saprolite/weathered rock gradually transitioned into weathered/fractured rock that was generally found greater than 13 feet across the site. Groundwater was observed in the saprolite and weathered/fractured rock materials beneath the proposed disposal area. Top of rock varied from 13 to 27 feet below grade.

Based on the above observations, the predominant vertical and horizontal movement of effluent beneath the proposed infiltration area would be through the saprolite/weathered rock and shallow fractured bedrock materials. No restrictive soils/saprolite seams were observed between the ground surface and the groundwater table. The saprolite and weathered rock contain an unconfined aquifer which is common in metamorphic rock. Subsequently, the unconfined (water table) aquifer was further investigated to determine its hydraulic characteristics.

3.0 WATER LEVEL MONITORING

Depth-to-water measurements in monitoring wells were recorded over a period of several weeks, and groundwater elevations were determined by subtracting depth-to-water measurements from the top-of-casing elevations. During the initial investigation in spring 2000, depth-to water levels were recorded for monitoring wells MW-1, 2 and 3. Upon construction of monitoring wells MW-4 through MW-6 in December 2003, water levels were obtained from the onsite monitoring wells and compared with earlier levels for wells MW-1 through MW-3 recorded in March 2000. In general, depth-to-water measurements for monitoring wells MW-1 and MW-3 were approximately two (2) to four (4) feet higher in March 2000 than measurements recorded in late 2003 and early 2004. Historical groundwater elevation data is summarized in *Table 1*:

TABLE 1
HISTORICAL GROUNDWATER ELEVATION DATA
CORINNE VILLAGE DEVELOPMENT
POCOPSON TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

Well	TOPC Elevation (ft.)	Depth to Water 3/30/00 (ft.)	Groundwater Elevation 3/30/00 (ft.)	Depth to Water 1/12/04 (ft.)	Groundwater Elevation 1/12/04 (ft.)	Difference in Groundwater Elevation (ft.)
MW-1	383.74	36.1	347.64	40.15	343.59	-4.05
MW-2	335.32	14.2	321.12	16.52	318.80	-2.32
*MW-3	348.70	19.75	328.95	23.68	325.02	-3.93
MW-4	405.61			44.81	360.80	
MW-5	376.35			34.14	342.21	
MW-6	382.39			31.63	350.76	

TOPC: Denotes top of protector casing.
Depth to water measurements measured from top of protector casing.
Note: Well elevations and horizontal locations for monitoring wells MW-1, MW-2, MW-4, MW-5 and MW-6 provided to EME by Apex Engineering, Incorporated. The survey was performed under the direction of a Pennsylvania licensed Land Surveyor.
**MW-3 not surveyed by a PA licensed Land Surveyor. Top of casing elevation measured by EME using a surveyor's transit and benchmark from MW-2's top-of-casing. Horizontal location measured with a tape and triangulated from known surveyed points.*

Assuming the seasonal high groundwater high elevation occurs in March, the March 30, 2000 groundwater elevation data can be considered reflective of seasonal high water table conditions. Additionally, climatological data downloaded from NOAA archives[3] indicates that rainfall data recorded at the Philadelphia rain station totaled 6.41 inches for March 2000, which is 2.64 inches above normal monthly totals for March. Based on the fluctuation from the March 2000 seasonal high water levels in wells MW-1 through MW-3, an inferred seasonal high groundwater elevation is presented as four (4) feet higher than the groundwater elevations obtained on January 12, 2004. Seasonal high groundwater elevations for wells MW-1through MW-6 are summarized in *Table 2* below:

[3] National Oceanic and Atmospheric Administration (NOAA), Preliminary Local Climatological Data, Philadelphia Weather Station, March 2000, downloaded from www. erh.noaa.gov/er/phi/clidat.htm

TABLE 2
GROUNDWATER ELEVATIONS BENEATH PROPOSED INFILTRATION AREA
CORINNE VILLAGE DEVELOPMENT
POCOPSON TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

Well	TOPC Elevation (ft.)	Depth to Water 1/12/04 (ft.)	Groundwater Elevation 1/12/04 (ft.)	Inferred Seasonal High Groundwater Elevation (ft.)
MW-1	383.74	40.15	343.59	347.59
MW-2	335.32	16.52	318.80	322.80
MW-3	348.70	23.68	325.02	329.02
MW-4	405.61	44.81	360.80	364.80
MW-5	376.35	34.14	342.21	346.21
MW-6	382.39	31.63	350.76	354.76

Seasonal high groundwater table 4.0 feet higher than 1/12/04 levels.
TOPC: Denotes top of protector casing.

Well locations and elevations were plotted and groundwater contours were extrapolated for all six (6) monitoring wells on the project site using the January 12' 2004 groundwater elevations shown in *Table 2*. In addition to monitoring well water elevations, four (4) stream points were added to the data set to map groundwater contours farther downgradient of the disposal area. Stream elevation points are approximate where topographic contours crossed the surveyed stream bed. Groundwater contours for the proposed disposal area are shown on both *Plates 1 and 2* included with this report.

The groundwater flow direction is consistent with surface drainage flowing from higher topographical elevations to lower elevations across the site. Sloto[4] reports that *groundwater flow systems in crystalline rock are local with streams acting as drains. Flow paths are short and groundwater flows from areas of higher elevation to adjacent streams. Groundwater and surface water divides usually coincide. The hydrogeologic system is generally influenced by water table conditions, and the groundwater surface is typically a subdued replica of the land surface.* The mapped direction of groundwater flow agrees with Sloto's statement with flow being in the general southerly direction to the onsite and

[4] Sloto, R. A., (1994), *Geology, Hydrology, and Ground-Water Quality of Chester County, PA*: Chester County Water Resources Authority, Water-Resource Report 2, 127.

neighboring streams intersecting the property. Stream point elevations used for groundwater mapping agreed with monitoring well groundwater elevation data and contouring. No groundwater contour anomalies were observed between the well data and stream data.

4.0 HYDRAULIC CONDUCTIVITY TESTING

4.1 Slug Test Procedures

Falling head and rising head slug tests were performed at monitoring well locations MW-1, MW-2, MW-3, MW-4, MW-5 and MW-6. Slug testing was performed to determine shallow aquifer hydraulic characteristics (namely hydraulic conductivity). Slug testing can be used to determine hydraulic conductivity by introducing a volume change in the well and correlating the time necessary for the water level to recover to its original position. The average hydraulic conductivity was then used to determine aquifer transmissivity for use in the absorption area groundwater mounding calculations. The objective of each slug test was to create an instantaneous change in the water level of the well. The water level change was caused by the insertion or withdrawal of a slug into/from the well's water column when the water level is at equilibrium. Water level recovery changes vs. time were recorded with a factory calibrated pressure transducer and graphed.

Well static water levels were first recorded with respect to the top of the well casing. Initial water level information was entered into the data logger for reference. The pressure transducer was then placed into the water table and the slug was hung just above the static water level prior to the start of the test. The pressure transducer was allowed to reach temperature equilibrium prior to the start of each test. The test was then started and the slug quickly lowered completely into the water table. The instantaneous change in water level was recorded and the data logger continued to collect data until the water level recovered to within approximately 95% of its original level. Following water level recovery, a rising head (slug out) test was then performed.

4.2 Monitoring Well Hydraulics

Data collected during the slug tests was downloaded from the data logger into a computer spreadsheet program and then to a computer analysis program (Aqtesolv by HydroSOLVE, Inc.). Data was analyzed to determine the hydraulic conductivity of the aquifer using the Hvorslev solution for a slug test in an unconfined aquifer.

Hvorslev Solution for a Slug Test in an Unconfined Aquifer (1951)

The Hvorslev solution is designed to estimate the hydraulic conductivity of the aquifer surrounding the screen of the well. After a change in head, the rate of outflow/inflow at the well screen at any time is proportional to the permeability (K) of the aquifer material and the unrecovered head difference. Hvorslev produced the following general solution:

$$\ln(s_0) - \ln(s_t) = \frac{2KLt}{r_{ce}^{\ 2} \ln(r_e / r_{we})}$$

where: t = is time (T)
s = displacement (L)
r_{ce} = the casing radius (L)
r_{we} = the wellbore radius for the test well (L)
n = the porosity of gravel pack if water level is below screen (dimensionless)
L = the screen length (L)

The assumptions with the Hvorslev solution are:

1. aquifer has infinite aerial extent,
2. aquifer is homogeneous and of uniform thickness,
3. water table is horizontal prior to the test,
4. instantaneous injection of a volume of water resulting in an instantaneous change in head,
5. flow is steady,
6. the aquifer is unconfined or confined.

The above conditions are generally accepted as true over the area influenced by the water level change. The aquifer is expected to be unconfined at shallow depths. For the analysis, both falling and rising head tests were used to determine the aquifer's horizontal permeability. Two (2) tests were conducted at monitoring wells MW-1, MW-2 and MW-3 while four (4) tests were conducted at wells MW-4 through MW-6. Tests conducted at MW-1, 2, 4, 5 and 6 are included with this report. Well MW-3 testing indicated relatively impermeable conditions (10^{-3} feet/day), characteristic of unfractured bedrock which is inferred as the lower confining layer. Slug testing time and displacement data, and data plots of time versus water level displacement for monitoring wells depicting characteristics of the water table aquifer are included in **Appendix B**.

Due to the revised development configuration, MW-3 is not located in the proposed disposal area. Also, monitoring well MW-3 was finished (screened) in deep, relatively impermeable competent bedrock that is indicative of the bottom-confining layer, not the weathered zone aquifer tested as part of this investigation. An evaluation of MW-3's log indicates a deep screen setting, missing the shallow water table aquifer. Because MW-3 was constructed in the bottom confining layer, the hydraulic conductivity results from MW-3 were not incorporated in the scope of this evaluation. The hydraulic conductivity for the water table aquifer is summarized as follows:

Well	Test	Hydraulic Conductivity
MW-1	in 1	8.977 ft/day
MW-1	out 1	9.989 ft/day
		MW-1 mean=9.483 ft/day

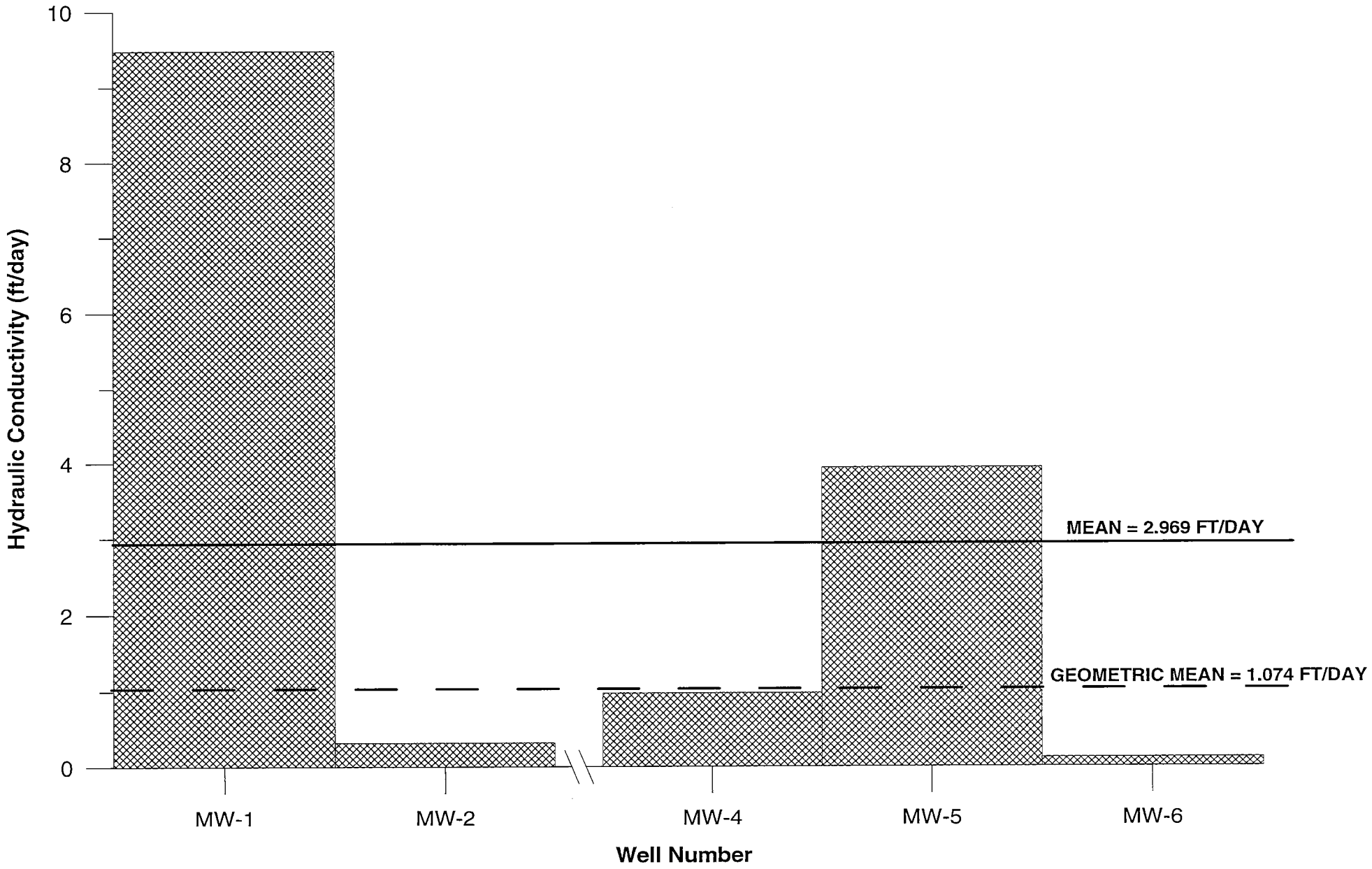
MW-2	in1	0.311 ft/day
MW-2	out1	0.334 ft/day
		MW-2 mean=0.323 ft/day
MW-4	in1	1.018 ft/day
MW-4	in 2	1.030 ft/day
MW-4	out 1	0.852 ft/day
MW-4	out 2	1.022 ft/day
		MW-4 mean=0.980 ft/day
MW-5	in 1	3.756 ft/day
MW-5	in 2	3.970 ft/day
MW-5	out 1	3.934 ft/day
MW-5	out 2	4.091 ft/day
		MW-5 mean=3.938 ft/day
MW-6	in1	0.127 ft/day
MW-6	in 2	0.128 ft/day
MW-6	out 1	0.106 ft/day
MW-6	out 2	0.121 ft/day
		MW-6 mean=0.121 ft/day

Overall mean (five wells) =2.969 ft/day

Upon review of the complete data set, the mean was chosen to be representative of the project site. There is a 100 order of magnitude difference in the range of hydraulic conductivity for the saturated media from 0.106 to 9.989 feet/day indicating that the aquifer is anisotropic. Because of this high degree of anisotropy and to account for the high hydraulic conductivity characteristic to fractured rock, the mean value (2.97 ft/day), as opposed to the geometric mean value (1.07 ft/day), of each well's average value was determined to be representative of the hydraulic conductivity of the saturated materials. Average values for each well were chosen for the analysis because of the different number (two versus four) of past and present test runs. This distribution of hydraulic conductivities relative to the mean and geometric mean values is illustrated graphically in *Figure 2*. Looking at the spatial distribution of the data, the geometric mean is skewed toward the lower end of the data set and does not give accurate weight to the irregular, widely spaced jointed rock, which can convey significant quantities of water. The saprolitic and weathered rock materials are expected to be on the higher side of the above range. As expected for the shallow weathered material, the mean value of 2.97 ft/day is in the upper range of hydraulic conductivity of 0.2-3.0 ft/day reported for the Wissahickon Formation aquifer materials [Geyer and Wilshusen[5]].

[5] Geyer, A. R. and Wilshusen, J. P., (1982), *Engineering Characteristics of the Rocks of Pennsylvania*, Pennsylvania Topographic and Geological Survey, Harrisburg, Env. Geol. Rpt. 1, 4th Series.

Figure 2
Distribution of Shallow Water Table Aquifer Hydraulic Conductivities
Proposed Drip Disposal Area
Corinne Village Development
Pocopson Township, Chester County, Pennsylvania



4.3 Unconfined Aquifer Hydraulics

4.3.1 Aquifer Thickness

The transmissivity of the top unconfined aquifer can be estimated by multiplying the hydraulic conductivity of the media by the aquifer thickness. The mean hydraulic conductivity was used to determine the transmissivity of the unconfined aquifer beneath the disposal field. The Wissahickon aquifer is actually thicker than its overburden/weathered rock thickness, but the aquifer may become somewhat confined with increasing depth. The mounding analysis model assumes an unconfined aquifer. To accommodate the model's unconfined assumption, EME uses only the top aquifer thickness for the mounding analyses. This water table typically has the shortest flow path, is the zone which will show the first sign of impact, is the zone which is required to be monitored by the regulatory agency, and is the zone investigated by the five (5) wells surrounding the disposal field.

An evaluation of the formation's weathered zone saturated thickness was performed both from onsite monitoring well logs and existing domestic water supply well logs.

ONSITE MONITORING WELL DATA:

Well	Depth of Fracture (ft.)	Static Water Level (ft.)	Saturated Thickness (ft.)
MW-1	57	33.8	57-33.8=23.2
MW-2	36	11.2	36-11.2=24.8
MW-3	37	17.2	37-17.2=19.8
MW-4	69	42.8	69-42.8=26.2
MW-5	43	31.8	43-31.8=11.2
MW-6	46	31.6	46-31.6=14.4

119.6/6 wells = 19.9 feet

*The average saturation thickness plus the four (4) feet seasonal high water table equals an average water table thickness of **23.9 feet.***

EXISTING DOMESTIC WELL DATA:

Well data downloaded from the Pennsylvania Groundwater Information System (PaGWIS)[6] was used for the analysis of aquifer thickness. Well casing depth and static water level data from wells located in the Wissahickon Formation in Pocopson Township, Chester County, Pennsylvania were used to develop and estimate of the weathered zone saturated thickness. A total of seventeen (17) water supply wells were identified in which the static water level was above the bottom of the casing. It was assumed that the well casings were installed five feet into bedrock; therefore the difference between the casing depth (minus five feet) and the static water level provides an estimate of the upper saprolitic/weathered layer aquifer thickness. From the data set, the mean value of the seventeen saturated thickness values was then determined to be 21.8 feet. The PaGWIS

[6] Pennsylvania Groundwater Information System (PAGWIS), Pennsylvania Department of Conservation and Natural Resources, PA Geological Survey, downloaded from www2.dcnr.state.pa.us/WebPaGWIS/PaGWISMain.asp

data and saturated thickness values are summarized in *Table 3* below:

TABLE 3
SAPROLITE/WEATHERED ROCK SATURATED THICKNESS
POCOPSON TOWNSHIP DOMESTIC SUPPLY WELLS IN THE WISSAHICKON
CORINNE VILLAGE DEVELOPMENT
POCOPSON TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

PaGWIS ID (#)	Depth (ft.)	Casing Depth (ft.)	Static Water Level (ft.)	Aquifer Thickness* (ft.)
9594	400	39	10	24
9604	153	51	15.3	30.7
9658	90	40	15	20
9694	270	20	8.25	6.75
9697	300	20	4	11
9701	123	47	37	5
9716	246	23	3.17	14.83
9722	267	47	2.1	39.9
9734	110	60	25	30
9735	160	74	45	24
9739	73	53	30	18
12715	122	55	21.5	28.5
12718	215	34	2	27
12720	200	44	13	26
42804	275	85	25	55
42855	188	31	25	1
42862	300	21	7.2	8.8
			Mean =	**21.8**

**Assumes casing is 5 feet into bedrock*

Sloto[7] reports a mean thickness of 20 feet for the weathered zone in metamorphic rocks from a sample of 480 wells in Chester County. This mean thickness is in close agreement with our site specific and area well data mean weathered zone thicknesses.

4.3.2 Aquifer Transmissivity and Storage

Multiplying the hydraulic conductivity (2.97 ft/day) of the unconfined saturated media by the conservative aquifer thickness of 21.8 feet, the transmissivity of the shallow aquifer was calculated to be 64.7 ft^2/day. Competent bedrock beneath the site will act as the lower confining layer. Groundwater encountered in the competent bedrock transitions from shallow unconfined aquifer characteristics to confined (leaky) fractured aquifer characteristics with increasing depth. Although the deep, bedrock aquifer is confined,

[7] Sloto, R. A., (1994), *Geology, Hydrology, and Ground-Water Quality of Chester County, PA*: Chester Co. Water Resources Authority, Water-Resource Report 2, 127.

leakage will occur and it will still transmit some additional effluent water away from the subject site.

Olmsted and Hely[8] estimated specific yield of the weathered zone in the Brandywine Creek Basin to be 7.5 to 10 percent. The project is located in the Brandywine Creek Basin. Typical storativity values for deep, bedrock materials are 10^{-3} or less.

Based upon test boring and monitoring well logs at the disposal area, no confining or restrictive layers were observed above the groundwater table. Firm competent bedrock is considered the lower confining layer. Shallow weathered/fractured rock is considered part of the top unconfined aquifer; therefore, first encountered groundwater beneath the site appears to be primarily influenced under water table (unconfined) conditions. Subsequently, infiltrating water will move predominantly vertically through the unsaturated materials to the water table at which point it will move both horizontally and vertically in the overburden and the weathered/fractured bedrock under the influence of gravity to points of discharge.

5.0 GROUNDWATER MOUNDING ANALYSIS

A groundwater mounding analysis was performed to compute the theoretical height of a groundwater mound that may form below the infiltration area. The analysis requires input of the recharge area and site-specific hydrogeological parameters.

In addition to the wastewater application, the mounding analysis has to account for rainfall capture in the proposed treatment and storage pond. Rainfall data, provided to EME by the Township's Engineer, shows a net capture in the ponds of 114,136 gallons/year. Loading to the disposal area was determined by adding together the daily wastewater load (20,213 gpd) plus rainfall captured in the treatment and storage ponds. Rainfall capture of 114,136 gallons/year falling into the surface area of the treatment/storage ponds is equivalent to 313 gpd. The daily amount of water required to be disposed of on a annual average is equal to 20,213 gpd effluent plus 313 gpd rainwater or 20,526 gpd.

The area proposed for wastewater application is 3.89 acres and is shown on *Plate 2*. Based upon the proposed application area size, existing topography and seasonal high groundwater elevation, a groundwater mounding analysis was performed to calculate the mound height at the center and downgradient edge of the disposal area from the proposed application of 20,526 gpd of water. Mounding was evaluated by simulating the application of 20,526 gpd of water over a rectangular area 226 feet x 750 feet approximately equal to the 3.89 acre total disposal area. The separation depth from the seasonal high groundwater table is shown in *Table 4*. The center of the model area is shown as this is where the mound is always the highest. Depths were interpolated from *Plate 2* groundwater contours plus an estimated seasonal fluctuation (4.0 feet).

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[8] Olmsted, F.H., and Hely, A.G., 1962, Relation between ground water and surface water in Brandywine Creek basin, Pennsylvania: U.S. Geological Survey Professional Paper 417-A, 21p.

TABLE 4
SEPARATION BETWEEN SEASONAL WATER TABLE AND DRIP TUBING
CORINNE VILLAGE DEVELOPMENT
POCOPSON TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

Model Point	Grade Elevation at Center of System (Feet)	Elevation at Bottom of Tubing w/ 0.7' Cut Center of System (Feet)	January 2004 Water Table Elevation (Feet)	Elevation of Seasonal High Water Table (Feet)	Separation (Bottom of Tubing to Water Table) (Feet)	Allowable Groundwater Mounding Height (Feet)
Center	384.5	*383.8	344	**348	35.8	31.8
Pt. 1	354.5	*353.8	325	**329	28.8	24.8

** Incorporates an average 8" (0.7') tubing installation depth.*
*** Inferred seasonal high water table elevation (add 4.0 feet).*

For mounding studies, the PaDEP requires an application period of ten (10) years as per their Manual for Land Application of Treated Sewage and Industrial Wastewater[9]. PADEP also requires that a four (4) foot separation be maintained from the tubing to the top of the groundwater mound. Subsequently, the maximum allowable mound heights beneath the disposal area are shown in the far right-hand column in *Table 4.* A rectangular recharge area approximately equal to the footprint of the disposal area was used for the analysis. The analysis assumed a year-round daily application of effluent. The mounding simulations are included in **Appendix C.** The recharge rate and footprint used in the analysis is summarized below:

3.89 acres Deep-Well Drained in the total disposal area
Necessitated Capacity: 20,213 gpd + 313 gpd annual rainfall = 20,526 gpd
20,526 gpd/3.89 acres = 5,277 gpd/acre
5,277 gpd/acre /43,560 ft^2/acre=0.121 gpd/ ft^2
0.121 gpd/ ft^2 /7.481 gal/ft^3 = 0.0162 feet/day
0.0162 feet/day is equivalent to a loading of 5,280 gpd/acre

Drip Model:
Model box: 226' x 750' = 169,500 ft^2 (approx. 3.89 acres)
Depth to seasonal high groundwater (at center of box) below grade: 40 feet
Distance to onsite stream = 1,750'

[9] Bureau of Water Quality Management, Commonwealth of Pennsylvania, Department of Environmental Resources, (1983), Manual for Land Application of Treated Sewage and Industrial Wastewater, A Guide to Site Selection, System Design, and Planning and Permitting Requirements, DER # 1588-8/93.

To predict the response of the groundwater table beneath the proposed absorption area from the application of treated effluent, EME utilized a computer simulation model developed by the Colorado State University. The Colorado State University Pit and Well Model (CSUPAW) utilizes the Glover Solution to predict the change in groundwater elevation. Input for the model includes: the site-specific transmissivity of 64 ft^2/day, an unconfined aquifer specific yield of 0.10 (dimensionless), and loading at 0.0162 ft/day. Glover's Solution is for a homogeneous, isotropic, unconfined aquifer with constant recharge and a horizontal water table. The above conditions are generally met with the exception of the horizontal groundwater table. The water table is sloping beneath the site, which is expected to cause a lesser mound rise than actually predicted. For Glover's Solution to be valid the mound rise should be small compared to the initial saturated thickness of the aquifer. This condition can be considered correct considering that the aquifer is leaky and is actually thicker than the 20-24 foot thickness determined from area well data.

The proposed disposal area used simulated recharge with discharge to a nearby stream. The mounding simulation was run parallel to the model box and groundwater flow direction. The CSUPAW model predicted a mound rise of 17.2 feet at the center of the infiltration area and 13 feet at its downgradient edge after 10 years of continuous daily application. The vertical separation distances after 10 years at the center and downgradient edge of the modeled area from the bottom of the tubing to the groundwater mound during seasonal high water table conditions were determined to be satisfactory beneath the drip area to maintain the required four-foot buffer.

6.0 GROUNDWATER QUALITY

Water samples were collected from monitoring wells MW-1, MW-2, MW-4, MW-5 and MW-6 on January 19, 2004. Samples were analyzed by M.J. Reider & Associates, Inc. of Reading, PA for fecal coliform (FC), total coliform (TC), nitrate-nitrogen (NO_3), nitrite-nitrogen (NO_2), ammonia-nitrogen (NH_3), total Kjeldahl nitrogen (TKN) and pH. Temperature, pH and specific conductance were also obtained in the field at the time of sampling. Copies of the laboratory Certificates of Analysis are included in **Appendix D** with the Chain-of-Custody record forms and sampling field log. Groundwater quality is summarized in *Table 5* below:

TABLE 5
GROUNDWATER QUALITY RESULTS
CORRINE VILLAGE DEVELOPMENT
POCOPSON TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

Well	TC (col/100 ml)	FC (col/100 ml)	NO_3 (mg/l)	NO_2 (mg/l)	NH_3 (mg/l)	TKN (mg/l)	pH (s.u.)	Sp. Cond. (μmhos)
MW-1	0	0	16.66	<0.2	<0.1	<1	5.35	203
MW-2	<1.1	<1.1	20.23	<0.2	<0.1	<1	5.73	273
MW-4	12	0	11.4	<0.2	<0.1	<1	6.01	144.5
MW-5	20	0	10.1	<0.2	<0.1	<1	6.12	178.4
MW-6	>80	0	14.5	<0.2	<0.1	<1	6.31	175.8

The reported total coliform is not unusual in the shallow water table aquifer. Fecal coliform is a better indicator of bacterial contamination in the aquifer. No fecal coliform was detected in the five monitoring wells sampled. Nitrate concentrations in all five wells sampled exceed the Safe Drinking Water limit of 10.0 mg/l. The background nitrate concentration from wells surrounding the disposal area was estimated at 14.6 mg/l. Total nitrogen is equal to NO_2 + NO_3 + TKN. Adding each individual well's total nitrogen concentration and dividing by five wells equals an average background total nitrogen concentration at the site for January 19, 2004 of 15.18 mg/l (refer to **Appendix D**). As part of the earlier investigation, water quality samples were collected at monitoring wells MW-1, 2, and 3 on April 7, 2000. Nitrate-nitrogen concentrations on April 7, 2000 in wells MW-1, 2 and 3 were 12.9 mg/l, 12.9 mg/l and 3.84 mg/l, respectively.

7.0 NITROGEN ANALYSIS

The project is proposing wastewater treatment by ponds with an average annual effluent nitrogen concentration of 22 mg/l. Background nitrogen concentrations are above 10 mg/l; therefore, an area dilution model is not appropriate for this site but a dispersion model is if the nitrogen plume can be contained within the project site, or if it can be shown that on and offsite groundwater users are protected.

The project is proposing public water. Based on groundwater contouring, nutrients from the proposed drip area will disperse primarily in a southerly direction to the onsite streams shown on Plate 1. Pocopson Creek flows across the entire southern boundary, and an unnamed tributary to Pocopson Creek flows parallel to Larken-Baily Road along the southern section of the western property boundary. Groundwater contouring on Plate 1 shows groundwater flow intersecting these perennial streams. The nutrient plume from a small portion of the northwest corner of the drip area may migrate onto the Suzanne L. and Susan L. Williamson property at the western side of the site. EME understands that this property is under development and the strip of land between Larken-Baily Road and the stream is deed restricted. No future construction is allowed in this strip of land between Larken-Baily Road and the unnamed tributary. A copy of the Township's Declaration of Covenants, Easements and Restrictions for this property is included in the Correspondence Section of this Sewage Facilities Planning Module. Subsequently, there are no foreseen impacts to potential groundwater users from the proposed drip system.

8.0 SUMMARY AND CONCLUSIONS

The project proposes the disposal of approximately 20,213 gallons per day of wastewater using land application. The overall site plan is shown on *Plate 1* and the details of the proposed disposal area are shown on *Plate 2*.

A hydrogeological assessment was performed to evaluate site suitability for wastewater application. The assessment included: soil boring and monitoring well construction, shallow aquifer permeability testing, groundwater quality analysis, and computer modeling using site specific data to computer the mound height beneath the

disposal area.

An unconfined aquifer was determined to exist beneath the proposed application area. The mean permeability determined by site specific testing of the unconfined aquifer is 2.969 ft/day. Aquifer permeabilities ranged from 0.106 to 9.989 ft/day. Based on this distribution, anisotropic conditions can be expected in the unconfined aquifer. A site-specific 64 ft^2/day aquifer transmissivity was determined by multiplying the mean permeability (2.969 ft/day) by the shallow unconfined aquifer thickness (21.8 feet). The aquifer is unconfined at shallow depths and is expected to become confined with increasing depth.

The wastewater infiltration area and application rate is based on site-specific data and a conceptual plan developed by Evans Mill Environmental, Incorporated. Based on this conceptual plan (hydraulic loading, depth to groundwater and transmissivity), groundwater mounding simulations indicated that adequate soil buffers will be maintained between the evolving groundwater mound and the bottom of the application area. The mounding simulations took into account average daily flows of 20,213 gpd plus rainfall capture of 313 gpd. Disposing of the 20,526 gpd flow is equivalent to spreading 0.0162 feet of water per day over a 3.89-acre disposal area.

Based upon the groundwater mounding analyses, a year round daily hydraulic loading rate of 0.0162 feet/day was determined protective of the four (4) foot vertical buffer zone. This loading is consistent with typical DEP approved application rates for land-based systems.

The background total nitrogen concentration in the shallow aquifer for the five wells distributed over the site was determined to be 15.18 mg/l. Nitrogen from the drip disposal area will disperse to an onsite stream, or offsite to deed restricted lands and an offsite stream where the plume will stop.

9.0 REFERENCES

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APPENDIX A:
MONITORING WELL LOGS

Project No: 1077-02

Project: Baily Farm Development

Client: Gilman Development Co.

Location: Pocopson Twp., Chester Co.

Monitoring Well MW-1

Geologist: Scott R. Mundell, P.G.

Initial Depth to Water: 44.89' TOPC

Depth to water: 36.1' 3/30/00 TOPC

Depth	Description	Elev.	Sample Number	Sample Type	Recovery	Standard Penetration Test Blows/Foot (20 60 100 140)	Well Elevation 384.7 TOPC	Comments
0	Ground Surface	382.4						
0	*Topsoil 0-1.2'*							
1	1.2 to 6'							TOPC Stickup 2.3'
2	Brown silt to sandy silt w/a trace of rock frag., stiff, moist		1	SS	1.25			TIOC Stickup 2.0'
3		380						Finished 12:30 pm
4			2	SS	1.17			5' of 6" steel casing locking cap w/lock
5		378						
6	6 to 10'							
7	Orangish brown silty sand and gravel, schistose, medium to coare sand, gravel- very brittle to soft, very hard, moist	376	3	SS	1.42			
8								13 bg cement grout
9		374	4	SS	1.17			
10	10 to 12.5'							42' PVC riser 4"
11	White, very weathered broken and fractured rock, schistose, crumbles w/light pressure, saprolite, hard, moist	372	5	SS	.4			
12								
13	12.5 to 16'	370	6	SS	1			
14	Reddish orange saprolite, severely weathered rock showing parent structure, sand-fine to med., gravel-brittle, crumbles w/light press., hard, greasy feel due to mica, no plasticity, moist							
15		368						
16			7	SS	.8			
17	*Top of Rock 16'*	366						
18	16 to 30'		8	SS	.25			
19	Dark tan to gray very weathered schist, very soft, weathered bedrock, alterating to orangish and tan weathered schist, dry	364						
20								
21		362						
22								
23		360						5 gal. bentonite
24								Yield 3 gpm
25		358						

Drill Method: Air Rotary

Drill Date: 3/7/00

Hole Size: 4" x 8.5"

Evans Mill Environmental
101 Fellowship Road
Uwchland PA 19480
Phone (610) 458-8300

Datum:

Checked by: SRM

Sheet: 1 of 3

Project No: 1077-02

Project: Baily Farm Development

Client: Gilman Development Co.

Location: Pocopson Twp., Chester Co.

Monitoring Well MW-1

Geologist: Scott R. Mundell, P.G.

Initial Depth to Water: 44.89' TOPC

Depth to water: 36.1' 3/30/00 TOPC

SUBSURFACE PROFILE				SAMPLE					
Depth	Symbol	Description	Elev.	Number	Type	Recovery	Standard Penetration Test Blows/Foot (20 60 100 140)	Well Elevation 384.7 TOPC	Comments
26		*Top of Rock 16'*							
27		16 to 30' Dark tan to gray very weathered schist, very soft, weathered bedrock, alterating to orangish and tan weathered schist, dry	356						
28			354						
29									
30		30-35'	352						
31		Tan, slightly weathered schist, fractured from 32-34', soft to moderate, dry							
32			350						Tr. surface water waited 5 min.- dry
33									
34			348						33.8' bg 3/30/00
35		35-40' Tan to beigh schist, mod. hard							
36			346						Bentonite clay seal
37									
38			344						
39									
40		40-42' Brown schist	342						Yield 3 gpm
41									
42		42-45' Tan schist, v.soft 42-45' fractured, wet cuttings	340						Fractured - trace
43									
44			338						
45		45-50' Tan schist, v. soft 45-50' fractured, wet cuttings							15' screen 0.02" slot
46			336						
47									
48			334						
49		50-55' Tan schist, v. soft 50-52' fractured, wet cuttings							
50			332						6 bg. #2 sand

Drill Method: Air Rotary

Drill Date: 3/7/00

Hole Size: 4" x 8.5"

Evans Mill Environmental
101 Fellowship Road
Uwchland, PA 19480
Phone (610) 458-8300

Datum:

Checked by: SRM

Sheet: 2 of 3

Project No: 1077-02

Project: Baily Farm Development

Client: Gilman Development Co.

Location: Pocopson Twp., Chester Co.

Monitoring Well MW-1

Geologist: Scott R. Mundell, P.G.

Initial Depth to Water: 44.89' TOPC

Depth to water: 36.1' 3/30/00 TOPC

SUBSURFACE PROFILE				SAMPLE					
Depth	Symbol	Description	Elev.	Number	Type	Recovery	Standard Penetration Test Blows/Foot (20 60 100 140)	Well Elevation 384.7 TOPC	Comments
51–57		Tan schist, v. soft fractured to 57', wet 55-57' Gray schist, fractured	330–326					0.02" slot screen #2 sand Yield 3 gpm Well cap
57		Total Depth 57'	326					
58–75			324–308					

Drill Method: Air Rotary

Drill Date: 3/7/00

Hole Size: 4" x 8.5"

Evans Mill Environmental
101 Fellowship Road
Uwchland, PA 19480
Phone (610) 458-8300

Datum:

Checked by: SRM

Sheet: 3 of 3

Project No: 1077-02

Project: Baily Farm Development

Client: Gilman Development Co.

Location: Pocopson Twp., Chester Co.

Monitoring Well MW-2

Geologist: Scott R. Mundell, P.G.

Initial Depth to Water: 36.6" TOPC

Depth to water: 14.21' 3/30/00 TOPC

Depth	Symbol	Description	Elev.	Sample Number	Sample Type	Recovery	Standard Penetration Test Blows/Foot (20 60 100 140)	Well Elevation 336.0' TOPC	Comments
0		Ground Surface	333						
0–6		*Topsoil 0-1'* 1 to 6' Brown silt to silty sand with little to no rock frag., sand- med. fine, sandier w/depth, stiff, moist		1	SS	1.4			TOPC Stickup 3.0' TIOC Stickup 2.2' Finished 4:00pm 5' of 6" steel casing locking cap w/lock
			330	2	SS	1.5			
			328	3	SS	1.5			
6–16		6 to 16' Light gray, micaseous silty sand, sand-fine, little to no rock frag.,med. dense, moist	326	4	SS	1.5			S-5 Gravel in shoe 9 bg cement grout
			324	5	SS	.5			
		as above w/some med. gravel gravel-brittle, well drained, crumbles, no plast.	322	6	SS	.8			30' PVC riser 4" 11.21' bg 3/30/00
		as above, orangish gray color	320	7	SS	.5			
16–27		*16-27' Saprolite* Light gray to orange saprolite, greasy feel, crumbles, trace of fine gravel, brittle, decomposed rock, moist, no plast.	318						Yield 3 gpm
			316	8	SS	1			
			314						
			312						
		as above, decomposed rock, wetter	310	9	SS	.5			5 gal. bentonite Bentonite clay seal
			308						

Drill Method: Air Rotary

Drill Date: 3/8/00

Hole Size: 4" x 8.5"

Evans Mill Environmental
101 Fellowship Road
Uwchland, PA 19480
Phone (610) 458-8300

Datum:

Checked by: SRM

Sheet: 1 of 2

Project No: 1077-02

Project: Baily Farm Development

Client: Gilman Development Co.

Location: Pocopson Twp., Chester Co.

Monitoring Well MW-2

Geologist: Scott R. Mundell, P.G.

Initial Depth to Water: 36.6" TOPC

Depth to water: 14.21' 3/30/00 TOPC

SUBSURFACE PROFILE				SAMPLE					
Depth	Symbol	Description	Elev.	Number	Type	Recovery	Standard Penetration Test Blows/Foot (20 60 100 140)	Well Elevation 336.0' TOPC	Comments
26									
27		*Top of Rock 27'*	306	10	SS	2			
28		Severly weathered decomposed mica schist, alternating brown to light gray, moderatly hard w/ soft ledges, saturated							5 bg. #2 sand
29			304						
30									
31		29-29.5' soft	302						
32									15' screen 0.02" slot
33		soft @ 33'	300						
34									
35			298						
36		soft @ 36'							
37			296						
38									
39		lt. gray mica schist 39-43'	294						
40									Yield 3 gpm
41			292						
42									
43		Total Depth 43'	290						Well cap
44									
45			288						
46									
47			286						
48									
49			284						
50									

Drill Method: Air Rotary

Drill Date: 3/8/00

Hole Size: 4" x 8.5"

Evans Mill Environmental
101 Fellowship Road
Uwchland, PA 19480
Phone (610) 458-8300

Datum:

Checked by: SRM

Sheet: 2 of 2

Project No: 1077-02

Project: Baily Farm Development

Client: Gilman Development Co.

Location: Pocopson Twp., Chester Co.

Monitoring Well MW-3

Geologist: Scott R. Mundell, P.G.

Initial Depth to Water: dry

Depth to water (24 hrs.): 19.75' 3/30/00 TOPC

SUBSURFACE PROFILE				SAMPLE					
Depth	Symbol	Description	Elev.	Number	Type	Recovery	Standard Penetration Test Blows/Foot (20 60 100 140)	Well Elevation 348.7' TOPC	Comments
0		Ground Surface	346.2						
1		*Topsoil 0-1'* 1 to 4' Brown silt to sandy silt with little to no rock frag., sand- med. fine, sandier w/depth, med. stiff, moist, no plast.		1	SS	0.8			TOPC Stickup 2.5'
2			344						TOIC Stickup 2.0'
3				2	SS	0.0			
4									
5		4 to 8.5' Light gray reddish orange to brown silty sand, micaseous, sand-fine to med., little to no rock frag., stiff, moist	342	3	SS	1.7			5' of 6" steel casing locking cap w/lock
6									
7			340	4	SS	1.9			18 bg cement grout
8									
9		8.5 to13' Light gray to beigh silty sand w/some weathered gravel, sand-fine to med., micaseous, gravel-brittle (crumbles), hard, moist, becomming saprolitic with depth	338	5	SS	1.6			
10									52' PVC riser 4" dia
11			336	6	SS	1.3			
12									
13		*13 - 37' Saprolite*	334	7	SS	1.2			
14			332						
15									
16		13-37' Silty sand w/brittle gravel, micasous, saprolite, hard, moist, no plasticity, bk. mag. coatings on ped surfaces	330	8	SS	0.9			Yield 6 gpd
17									
18									17.2' bg 3/30/00
19		Gray silty sand, micaseous sand-fine to coarse, moist	328	9	SS	0.5			
20									
21			326						
22									
23		Gray to grayish brown silty sand, sand-fine to coarse, large mica flakes, moist, hard	324	10	SS	1.4			
24									
25			322						

Drill Method: Air Rotary

Drill Date: 3/7/00

Hole Size: 4" x 8.5"

Evans Mill Environmental
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Datum: I

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Sheet: 1 of 3

Project No: 1077-02

Project: Baily Farm Development

Client: Gilman Development Co.

Location: Pocopson Twp., Chester Co.

Monitoring Well MW-3

Geologist: Scott R. Mundell, P.G.

Initial Depth to Water: dry

Depth to water: 19.75' 3/30/00 TOPC

SUBSURFACE PROFILE				SAMPLE					
Depth	Symbol	Description	Elev.	Number	Type	Recovery	Standard Penetration Test Blows/Foot (20 60 100 140)	Well Elevation 348.7' TOPC	Comments
26–50		*13 - 37' Saprolite* White, gray, red, black sapr greasy feel, micaseous, weathers to silty, hard, moist as above w/gray seams 1' thick at 30 and 35'	320, 318, 316, 314, 312, 310, 308, 306, 304, 302, 300, 298, 296	11	SS	0.5			18 bg cement grout Yield 6 gpd 5 gal bentonite Bentonite clay seal 6 1/4 bg. #2 gravel
37		*Top of Rock 37'* 37 to 52' Severly weathered light gray mica schist, soft, dry							

Drill Method: Air Rotary

Drill Date: 3/7/00

Hole Size: 4" x 8.5"

Evans Mill Environmental
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Datum:

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Sheet: 2 of 3

Project No: 1077-02

Project: Baily Farm Development

Client: Gilman Development Co.

Location: Pocopson Twp., Chester Co.

Monitoring Well MW-3

Geologist: Scott R. Mundell, P.G.

Initial Depth to Water: dry

Depth to water: 19.75' 3/30/00 TOPC

SUBSURFACE PROFILE				SAMPLE					
Depth	Symbol	Description	Elev.	Number	Type	Recovery	Standard Penetration Test Blows/Foot (20 60 100 140)	Well Elevation 348.7' TOPC	Comments
51		*Top of Rock 37'*							
52		37 to 52' Severly weathered light gray mica schist, soft, dry	294						20' screen 0.02" slot
53									
54			292						
55		52-61' lt. brown mica schist, soft to moderatly soft, moist							6 1/4 bg #2 sand
56			290						
57									
58			288						
59									
60			286						20'-0.02" slot screen
61									
62		61-61.5' pink silt seam, wet	284						
63		lt. gray mica schist, mod. hard							
64			282						
65		65-70' as above							
66			280						
67									Yield 6 gpd
68			278						
69									
70			276						Well Cap
71		Total Depth 70'							
72			274						
73									
74			272						
75									

Drill Method: Air Rotary

Drill Date: 3/7/00

Hole Size: 4" x 8.5"

Evans Mill Environmental
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Phone (610) 458-8300

Datum:

Checked by: SRM

Sheet: 3 of 3

Project No: 1541-00-120

Project: Baily Farm

Client: Corinne Development, LLC

Location: Pocopson Township, Chester County

Monitoring Well MW-4

Logged by: H. Suhoskey

Initial Depth to Water: 42.4' b.g.

Depth to Water (24+ hrs.) 44.81' TOPC 1/12/04

SUBSURFACE PROFILE				SAMPLE					
Depth	Symbol	Description	Elev.	Number	Type	Recovery	Standard Penetration Test (20 / 60 / 100)	Well Detail	Comments
		Ground Surface	403.6						
0–8		***Overburden*** 0-1' Dk. brown topsoil 1-4' Tan brown v. gravelly silt 4-6.5' Gray weathered silt/sand/schist, hard, med. fragments 6.5-8' As above, tan brown and gray weathered schist and silt, v. dense	402.0 400.0 398.0 396.0						Set 5' steel protector casing locking cap w/ lock TOPC stickup = 2.0' 13 bags cement grout
8–13		***Top of Saprolite/Weathered Rock*** 8-11' Tan brown and gray v. weathered schist, some silty sand, v. dense 11-13' Reddish brown weathered schist	394.0 392.0	1	SS	0.1	100		S-1 v. dense material; (50/2")
13–25		***Top of Rock*** 13-14' Tan brown schist w/ thin seams reddish brown, schist, hard 14-20' As above 20-22' As above 22-23' As above, tan brown schist 23-25' Lt. tan brown schist, fractured at 24', no water	390.0 388.0 386.0 384.0 382.0 380.0						

Drill Method: Air Rotary

Drill Date: 12/22/03

Hole Size: 4" x 8.5"

Evans Mill Environmental
101 Fellowship Road
Uwchland, PA 19480
Phone (610) 458-8300

Datum: Elev. 405.61' TOPC

Checked by: SRM

Project No: 1541-00-120

Project: Baily Farm

Client: Corinne Development, LLC

Location: Pocopson Township, Chester County

Monitoring Well MW-4

Logged by: H. Suhoskey

Initial Depth to Water: 42.4' b.g.

Depth to Water (24+ hrs.) 44.81' TOPC 1/12/04

SUBSURFACE PROFILE				SAMPLE					
Depth	Symbol	Description	Elev.	Number	Type	Recovery	Standard Penetration Test (20 60 100)	Well Detail	Comments
26		25-30' As above, lt. tan brown schist	378.0						
27									
28			376.0						
29									
30		30-35' As above	374.0						Set 52.0' solid 4" dia. PVC riser TOIC stickup = 2.1', vented
31									
32			372.0						
33									
34			370.0						
35		35-40' As above, thin seam slightly darker brown schist at 39'							
36			368.0						
37									
38			366.0						
39		40-45' As above							
40			364.0						
41									
42			362.0						DTW 42.81' b.g. 1/12/04
43									
44		45-50' As above	360.0						
45									45', dry
46			358.0						
47									5 gallons bentonite
48			356.0						
49									
50			354.0						

Drill Method: Air Rotary

Drill Date: 12/22/03

Hole Size: 4" x 8.5"

Evans Mill Environmental
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Phone (610) 458-8300

Datum: Elev. 405.61' TOPC

Checked by: SRM

Project No: 1541-00-120

Project: Baily Farm

Client: Corinne Development, LLC

Location: Pocopson Township, Chester County

Monitoring Well MW-4

Logged by: H. Suhoskey

Initial Depth to Water: 42.4' b.g.

Depth to Water (24+ hrs.) 44.81' TOPC 1/12/04

SUBSURFACE PROFILE				SAMPLE					
Depth	Symbol	Description	Elev.	Number	Type	Recovery	Standard Penetration Test 20 60 100	Well Detail	Comments
51		50-54' Slightly darker tan brown schist	352.0						
52									
53									
54		54-61' Light tan brown schist, softer	350.0						
55									8.5 bags #2 sand
56			348.0						
57									
58			346.0						
59									
60			344.0						
61		61-63' Orange/tan brown schist, softer							
62			342.0						
63		63-68' Light tan brown schist							
64			340.0						Set 30.4' of 4" dia. slotted PVC well screen
65									
66			338.0						
67		68-70' Soft zone, possible fracture							
68			336.0						
69									
70		71-75' Tan/gray brown schist	334.0						
71									71', sit 3 mins., wet
72			332.0						
73									
74			330.0						
75									

Drill Method: Air Rotary

Drill Date: 12/22/03

Hole Size: 4" x 8.5"

Evans Mill Environmental
101 Fellowship Road
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Phone (610) 458-8300

Datum: Elev. 405.61' TOPC

Checked by: SRM

Sheet: 3 of 4

Project No: 1541-00-120

Project: Baily Farm

Client: Corinne Development, LLC

Location: Pocopson Township, Chester County

Monitoring Well MW-4

Logged by: H. Suhoskey

Initial Depth to Water: 42.4' b.g.

Depth to Water (24+ hrs.) 44.81' TOPC 1/12/04

SUBSURFACE PROFILE				SAMPLE					
Depth	Symbol	Description	Elev.	Number	Type	Recovery	Standard Penetration Test (20 60 100)	Well Detail	Comments
76		75-80' As above, tan brown/gray brown schist	328.0						
77									Developed well 12/23/03
78			326.0						Yield 1.5 gpm
79									
80			324.0						end cap
81		TOTAL DEPTH 80.9'							
82			322.0						
83									
84			320.0						
85									
86			318.0						
87									
88			316.0						
89									
90			314.0						
91									
92			312.0						
93									
94			310.0						
95									
96			308.0						
97									
98			306.0						
99									
100			304.0						

Drill Method: Air Rotary

Drill Date: 12/22/03

Hole Size: 4" x 8.5"

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101 Fellowship Road
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Phone (610) 458-8300

Datum: Elev. 405.61' TOPC

Checked by: SRM

Sheet: 4 of 4

Project No: 1541-00-120

Project: Baily Farm

Client: Corinne Development, LLC

Location: Pocopson Township, Chester County

Monitoring Well MW-5

Logged by: H. Suhoskey

Initial Depth to Water: 29.6' b.g.

Depth to Water (24+ hrs.) 34.14' TOPC 1/12/04

SUBSURFACE PROFILE				SAMPLE					
Depth	Symbol	Description	Elev.	Number	Type	Recovery	Standard Penetration Test (20 60 100)	Well Detail	Comments
0		Ground Surface	374.0						
0–13		*Overburden* 0-1' Dk. brown topsoil 1-4' Str. brown silt, some gravel 4-7' Red/or. brown silt and sand, gravelly 7-8.5' Tan brown silt/sand/gravel, micaceous 8.5-13.5' Var (or./tan/whitish) silt, coarse sand and v. weathered schist, med. dense to dense, dry, crumbles w/ slight pressure, micaceous/greasy feel at 11'; more coarse sand w/ depth	372.0 370.0 368.0 366.0	1	SS	1.7	23		Set 5' steel protector casing locking cap w/ lock TOPC stickup = 2.35' 9 bags cement grout S-1 (8, 11, 12, 25)
13–14		*Top of Saprolite/Weathered Rock*							
14–23		13.5-16' V. dense weathered schist, some silt and sand, dry, less micaceous, some horizontal banding 16-20' As above 20-22' Thin seam or./red brown schist, soft	364.0 362.0 360.0 358.0 356.0 354.0 352.0	2 3 4	SS SS SS	1.5 1.4 1.1	37 61 100		S-2 (12, 17, 20, 31) S-3 v. dense material; (18, 28, 33, 50/4") S-4 v. dense material; (30, 36, 50/5") Set 30.2' solid 4" dia. PVC riser TOIC stickup = 2.3', vented
23–25		*Top of Rock* 23-25' Tan brown schist, hard	350.0						

Drill Method: Air Rotary

Drill Date: 12/22/03

Hole Size: 4" x 8.5"

Evans Mill Environmental
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Phone (610) 458-8300

Datum: Elev. 376.35' TOPC

Checked by: SRM

Project No: 1541-00-120

Project: Baily Farm

Client: Corinne Development, LLC

Location: Pocopson Township, Chester County

Monitoring Well MW-5

Logged by: H. Suhoskey

Initial Depth to Water: 29.6' b.g.

Depth to Water (24+ hrs.) 34.14' TOPC 1/12/04

SUBSURFACE PROFILE				SAMPLE					
Depth	Symbol	Description	Elev.	Number	Type	Recovery	Standard Penetration Test 20 60 100	Well Detail	Comments
26		25-26' As above, tan brown schist 26-29' Reddish brown schist, fractured, dry	348.0						2.5 gallons bentonite to 26'
27									
28			346.0						
29		29-32' Tan brown schist							
30			344.0						
31									DTW 31.79' b.g. 1/12/04
32		32-35' As above, fractured	342.0						
33									
34			340.0						
35		35-39' As above, not as fractured							6 bags #2 sand
36			338.0						
37									
38			336.0						
39		39-43' V. micaceous tan brown schist, large fragments (flakes), v. fractured, wet							
40			334.0						Set 20.2' of 4" dia. slotted PVC well screen
41									
42		43-45' Thin seam red brown schist, soft	332.0						
43									
44		45-50' Tan brown schist, hard	330.0						
45									
46			328.0						
47									Developed well 12/23/03 Yield 2 gpm
48			326.0						
49									
50		TOTAL DEPTH 50.5'	324.0						end cap

Drill Method: Air Rotary

Drill Date: 12/22/03

Hole Size: 4" x 8.5"

Evans Mill Environmental
101 Fellowship Road
Uwchland, PA 19480
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Datum: Elev. 376.35' TOPC

Checked by: SRM

Sheet: 2 of 2

Project No: 1541-00-120

Project: Baily Farm

Client: Corinne Development, LLC

Location: Pocopson Township, Chester County

Monitoring Well MW-6

Logged by: H. Suhoskey

Initial Depth to Water: 34' b.g.

Depth to Water (24+ hrs.) 31.63' TOPC 1/12/04

SUBSURFACE PROFILE				SAMPLE					
Depth	Symbol	Description	Elev.	Number	Type	Recovery	Standard Penetration Test (20 60 100)	Well Detail	Comments
		Ground Surface	380.1						
0–11		***Overburden*** 0-1' Dk. brown topsoil 1-4' Str. brown gravelly silt 4-8' Tan/gray brown silt and gravel, micaceous 8-11' Tan brown/or. brown silt w/ some coarse whitish sand, some weathered gray/brown schist gravel, firm, dry, trace mica	378.0 376.0 374.0 372.0	1	SS	1.5	14		Set 5' steel protector casing locking cap w/ lock TOPC stickup = 2.3' S-1 (6, 6, 8, 7)
11–18		***Top of Saprolite/Weathered Rock*** 11-12' Sand and gray/brown weathered schist, trace silt, dense, no mica, dry 12-15' Silt/weathered schist/sand, some mica (slight greasy feel), dry, med. dense, less silt w/ depth 15-18' As above, v. dense	370.0 368.0 366.0 364.0	2 3 4	SS SS SS	1.3 1.1 1.5	36 22 55		S-2 (8, 11, 25, 25) S-3 (10, 13, 9, 15) S-4 v. dense material; (16, 21, 34, 50/4")
18–25		***Top of Rock*** 18-20' Tan brown schist, harder, micaceous 20-25' As above, tan brown/gray brown schist, thin seam reddish brown schist from 21-22'	362.0 360.0 358.0 356.0	5	SS	0.9	100		S-5 v. dense material; (38, 39, 50/5") 11.5 bags cement grout

Drill Method: Air Rotary

Drill Date: 12/22/03

Hole Size: 4" x 8.5"

Evans Mill Environmental
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Datum: Elev. 382.39' TOPC

Checked by: SRM

Project No: 1541-00-120

Project: Baily Farm

Client: Corinne Development, LLC

Location: Pocopson Township, Chester County

Monitoring Well MW-6

Logged by: H. Suhoskey

Initial Depth to Water: 34' b.g.

Depth to Water (24+ hrs.) 31.63' TOPC 1/12/04

SUBSURFACE PROFILE				SAMPLE					
Depth	Symbol	Description	Elev.	Number	Type	Recovery	Standard Penetration Test (20 60 100)	Well Detail	Comments
26		25-30' As above, tan brown schist, mod. fast drilling rate	354.0						
27									
28			352.0						
29									DTW 29.33' b.g. 1/12/04
30		30-33' As above	350.0						
31									
32			348.0						Set 42.0' solid 4" dia. PVC riser TOIC stickup = 2.1', vented
33		33-35' As above, dark tan brown schist							
34			346.0						
35		35-36' Thin seam reddish brown schist							
36		36-38' Tan brown schist	344.0						5 gallons bentonite
37									
38		38-39' Soft zone, reddish brown schist	342.0						
39		39-42' Tan brown schist							
40			340.0						6 bags #2 sand
41									
42		42-46' Dark brown schist, fractured, moist	338.0						
43									
44			336.0						
45		46-50' Tan brown schist							
46			334.0						
47									Set 20.2' of 4" dia. slotted PVC well screen
48			332.0						
49									
50			330.0						

Drill Method: Air Rotary

Drill Date: 12/22/03

Hole Size: 4" x 8.5"

Evans Mill Environmental
101 Fellowship Road
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Phone (610) 458-8300

Datum: Elev. 382.39' TOPC

Checked by: SRM

Project No: 1541-00-120

Project: Baily Farm

Client: Corinne Development, LLC

Location: Pocopson Township, Chester County

Monitoring Well MW-6

Logged by: H. Suhoskey

Initial Depth to Water: 34' b.g.

Depth to Water (24+ hrs.) 31.63' TOPC 1/12/04

SUBSURFACE PROFILE				SAMPLE					
Depth	Symbol	Description	Elev.	Number	Type	Recovery	Standard Penetration Test (20 60 100)	Well Detail	Comments
51		50-54' As above, tan brown schist							
52			328.0						
53									
54		54-60' Tan brown schist, thin seams reddish brown/gray schist, fractured, no water	326.0						
55									
56			324.0						
57									Developed well 12/23/03 Yield 0.45 gpm
58			322.0						
59									
60		TOTAL DEPTH 60.3'	320.0						end cap
61									
62			318.0						
63									
64			316.0						
65									
66			314.0						
67									
68			312.0						
69									
70			310.0						
71									
72			308.0						
73									
74			306.0						
75									

Drill Method: Air Rotary

Drill Date: 12/22/03

Hole Size: 4" x 8.5"

Evans Mill Environmental
101 Fellowship Road
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Phone (610) 458-8300

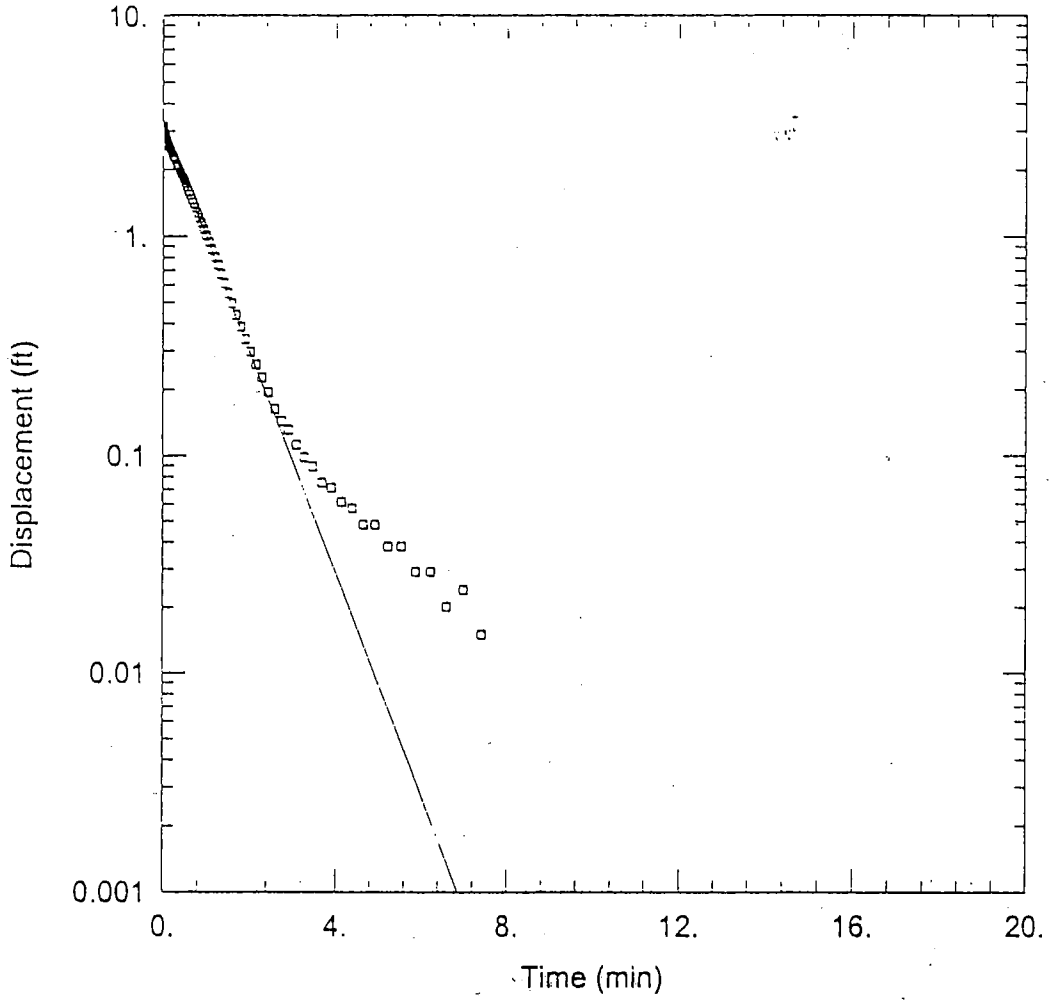
Datum: Elev. 382.39' TOPC

Checked by: SRM

Sheet: 3 of 3

APPENDIX B:
AQUIFER SLUG TESTING DATA

MW-1



MONITORING WELL MW-1 SLUG OUT

Data Set: C:\WINDOWS\DESKTOP\BAILEY\1077W1OT.AQT
Date: 06/06/00 Time: 13:08:54

PROJECT INFORMATION

Company: Evans Mill Env., Inc.
Client: Gilman Dev., Co.
Project: 1077.02
Test Location: Bailey Farm
Test Well: MW-1
Test Date: March 22, 2000

AQUIFER DATA

Saturated Thickness: 19.25 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 3.16 ft
Water Column Height: 17.25 ft
Casing Radius: 0.1666 ft
Wellbore Radius: 0.3542 ft
Screen Length: 15. ft

SOLUTION

Aquifer Model: Unconfined
K = 9.989 ft/day
Solution Method: Hvorslev
y0 = 3.165 ft

Data Set: C:\WINDOWS\DESKTOP\BAILEY\1077W1OT.AQT
Title: Monitoring Well MW-1 Slug Out
Date: 06/06/00
Time: 13:08:32

PROJECT INFORMATION

Company: Evans Mill Env., Inc.
Client: Gilman Dev., Co.
Project: 1077.02
Location: Bailey Farm
Test Date: March 22, 2000
Test Well: MW-1

AQUIFER DATA

Saturated Thickness: 19.25 ft
Anisotropy Ratio (Kz/Kr): 1.

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: MW-1

X Location: 0. ft
Y Location: 0. ft

No. of observations: 85

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.005	3.15	0.2647	2.223	1.605	0.493
0.01	3.118	0.2833	2.181	1.703	0.437
0.015	3.053	0.3032	2.135	1.808	0.387
0.02	2.998	0.3242	2.094	1.918	0.34
0.025	2.961	0.3463	2.043	2.035	0.297
0.03	2.924	0.3698	1.992	2.16	0.26
0.035	2.896	0.3947	1.941	2.291	0.227
0.04	2.869	0.4197	1.891	2.431	0.195
0.045	2.836	0.4463	1.844	2.58	0.163
0.05	2.813	0.4747	1.794	2.736	0.144
0.0558	2.809	0.5047	1.743	2.903	0.131
0.062	2.776	0.5363	1.674	3.08	0.112
0.0685	2.758	0.5713	1.605	3.266	0.098
0.0755	2.73	0.608	1.545	3.465	0.089
0.0828	2.739	0.6463	1.475	3.675	0.075
0.0907	2.689	0.688	1.415	3.896	0.071
0.099	2.647	0.7313	1.346	4.131	0.061
0.1078	2.624	0.778	1.277	4.38	0.057
0.1172	2.596	0.8263	1.208	4.643	0.048
0.127	2.569	0.878	1.143	4.923	0.048

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.1375	2.541	0.933	1.074	5.22	0.038
0.1485	2.509	0.9913	1.009	5.533	0.038
0.1602	2.481	1.053	0.94	5.865	0.029
0.1727	2.449	1.118	0.871	6.216	0.029
0.1858	2.412	1.188	0.802	6.59	0.02
0.1998	2.38	1.261	0.742	6.985	0.024
0.2147	2.333	1.34	0.673	7.403	0.015
0.2303	2.306	1.423	0.608		
0.247	2.264	1.511	0.548		

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	9.989	ft/day
y0	3.165	ft

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
K	9.492	0.07005	ft/day
y0	3.009	0.007895	ft

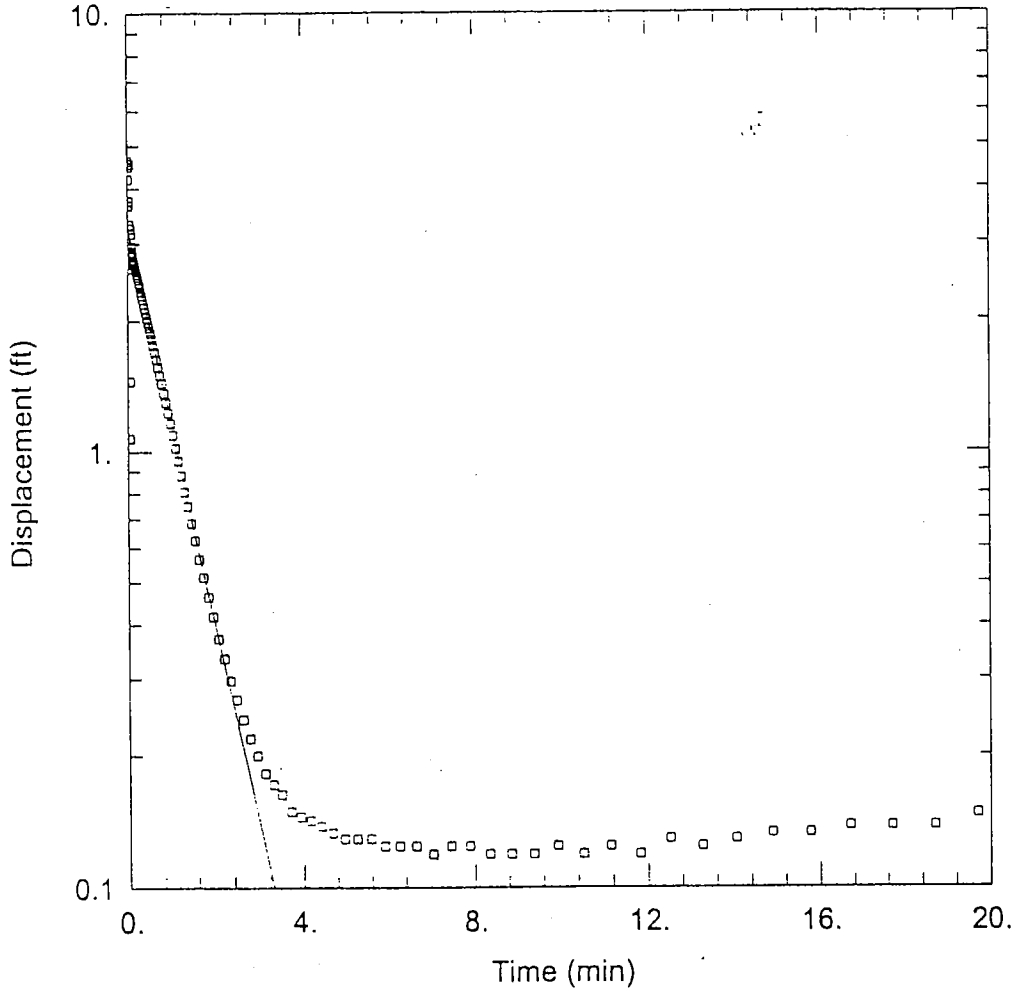
Parameter Correlations

	K	y0
K	1.00	0.62
y0	0.62	1.00

Residual Statistics

for weighted residuals

Sum of Squares ... 0.09991 ft^2
Variance..... 0.001204 ft^2
Std. Deviation ..... 0.03469 ft
Mean..... 0.004558 ft
No. of Residuals... 85.
No. of Estimates... 2



MONITORING WELL MW-1 SLUG IN

Data Set: C:\WINDOWS\DESKTOP\BAILEY\1077W1IN.AQT
Date: 06/05/00 Time: 15:19:41

PROJECT INFORMATION

Company: Evans Mill Env., Inc.
Client: Gilman Dev., Co.
Project: 1077.02
Test Location: Bailey Farm
Test Well: MW-1
Test Date: March 22, 2000

AQUIFER DATA

Saturated Thickness: 18.9 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 4.62 ft
Casing Radius: 0.1666 ft
Screen Length: 15. ft
Water Column Height: 16.9 ft
Wellbore Radius: 0.3542 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev
K = 8.977 ft/day
y0 = 3.261 ft

Data Set: C:\WINDOWS\DESKTOP\BAILEY\1077W1IN.AQT
Title: Monitoring Well MW-1 Slug In
Date: 06/05/00
Time: 15:20:28

PROJECT INFORMATION

Company: Evans Mill Env., Inc.
Client: Gilman Dev., Co.
Project: 1077.02
Location: Bailey Farm
Test Date: March 22, 2000
Test Well: MW-1

AQUIFER DATA

Saturated Thickness: 18.9 ft
Anisotropy Ratio (Kz/Kr): 1.

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: MW-1

X Location: 0. ft
Y Location: 0. ft

No. of observations: 122

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.005	4.62	0.4247	2.038	4.673	0.133
0.01	4.198	0.4497	1.988	4.953	0.129
0.015	4.481	0.4763	1.932	5.25	0.129
0.02	3.662	0.5047	1.877	5.563	0.129
0.025	3.75	0.5347	1.822	5.895	0.124
0.03	3.321	0.5663	1.762	6.246	0.124
0.035	3.755	0.6013	1.697	6.62	0.124
0.04	1.074	0.638	1.633	7.015	0.119
0.045	1.453	0.6763	1.568	7.433	0.124
0.05	4.555	0.718	1.503	7.876	0.124
0.055	2.631	0.7613	1.439	8.346	0.119
0.06	2.802	0.808	1.365	8.845	0.119
0.065	3.254	0.8563	1.3	9.371	0.119
0.07	2.7	0.908	1.231	9.93	0.124
0.075	3.166	0.963	1.162	10.52	0.119
0.08	2.816	1.021	1.093	11.15	0.124
0.0858	2.959	1.083	1.019	11.81	0.119
0.092	2.885	1.148	0.954	12.51	0.129
0.0985	2.867	1.218	0.881	13.26	0.124
0.1055	2.844	1.291	0.809	14.05	0.129

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.1128	2.825	1.37	0.749	14.89	0.133
0.1207	2.802	1.453	0.684	15.77	0.133
0.129	2.76	1.541	0.624	16.71	0.138
0.1378	2.737	1.635	0.565	17.7	0.138
0.1472	2.71	1.733	0.514	18.7	0.138
0.157	2.687	1.838	0.463	19.7	0.147
0.1675	2.654	1.948	0.417	20.7	0.147
0.1785	2.627	2.065	0.371	21.7	0.147
0.1902	2.594	2.19	0.334	22.7	0.152
0.2027	2.557	2.321	0.297	23.7	0.152
0.2158	2.525	2.461	0.269	24.7	0.156
0.2298	2.493	2.61	0.242	25.7	0.161
0.2447	2.451	2.766	0.219	26.7	0.161
0.2603	2.412	2.933	0.2	27.7	0.165
0.277	2.375	3.11	0.182	28.7	0.17
0.2947	2.329	3.296	0.172	29.7	0.17
0.3133	2.288	3.495	0.163	30.7	0.172
0.3332	2.241	3.705	0.149	31.7	0.177
0.3542	2.191	3.926	0.145	32.7	0.182
0.3763	2.145	4.161	0.142	33.7	0.182
0.3998	2.094	4.41	0.138		

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	8.977	ft/day
y0	3.261	ft

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
K	9.704	0.6619	ft/day
y0	3.339	0.07879	ft

Parameter Correlations

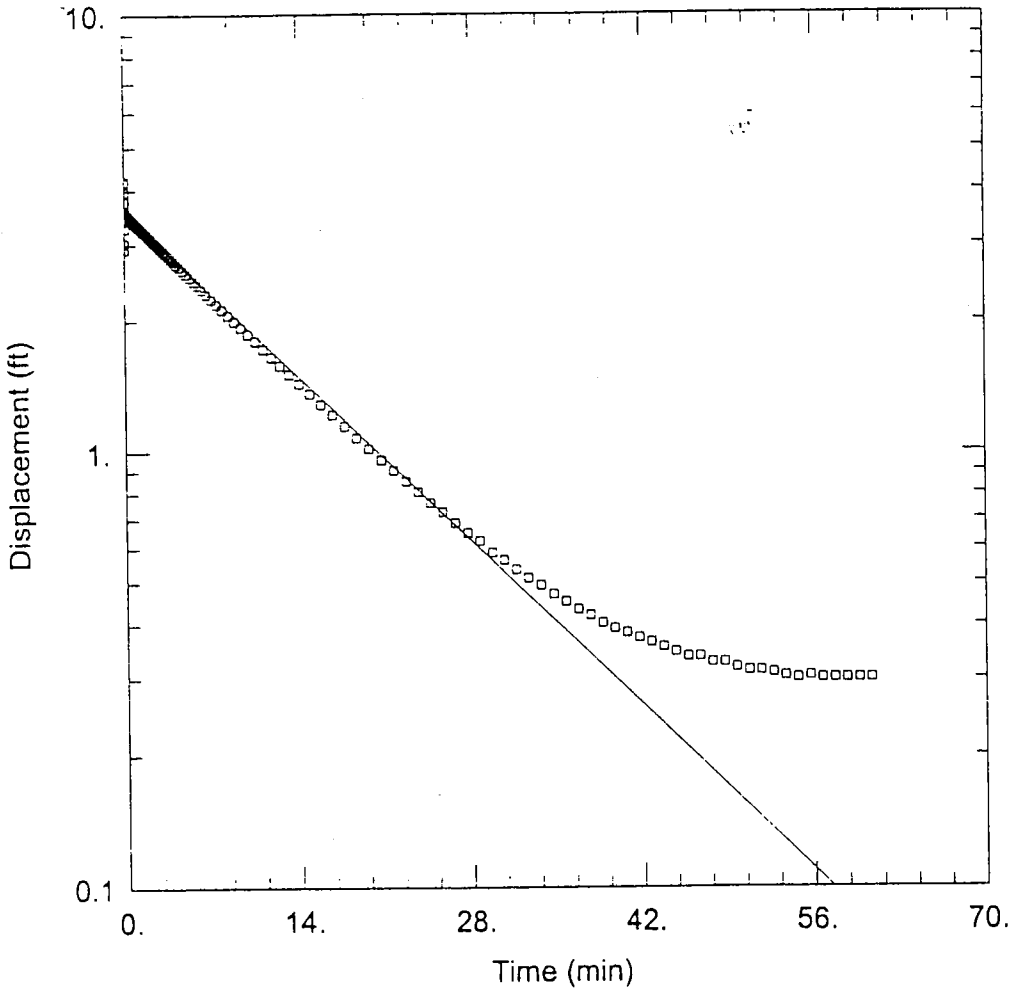
	K	y0
K	1.00	0.62
y0	0.62	1.00

Residual Statistics

for weighted residuals

Sum of Squares ... 15.77 ft^2
Variance..... 0.1314 ft^2
Std. Deviation ..... 0.3625 ft
Mean..... 0.05646 ft
No. of Residuals... 122.
No. of Estimates... 2

MW-2



MONITORING WELL MW-2 SLUG IN

Data Set: C:\WINDOWS\DESKTOP\BAILEY\1077W2IN.AQT
Date: 06/06/00 Time: 13:25:10

PROJECT INFORMATION

Company: Evans Mill Env., Inc.
Client: Gilman Dev., Co.
Project: 1077.02
Test Location: Bailey Farm
Test Well: MW-1
Test Date: March 22, 2000

AQUIFER DATA

Saturated Thickness: 29.2 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 4.2 ft
Casing Radius: 0.1666 ft
Screen Length: 15. ft
Water Column Height: 29.2 ft
Wellbore Radius: 0.3542 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev
K = 0.3105 ft/day
y0 = 3.558 ft

Data Set: C:\WINDOWS\DESKTOP\BAILEY\1077W2IN.AQT
Title: Monitoring Well MW-2 Slug In
Date: 06/06/00
Time: 13:26:49

PROJECT INFORMATION

Company: Evans Mill Env., Inc.
Client: Gilman Dev., Co.
Project: 1077.02
Location: Bailey Farm
Test Date: March 22, 2000
Test Well: MW-1

AQUIFER DATA

Saturated Thickness: 29.2 ft
Anisotropy Ratio (Kz/Kr): 1.

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: MW-2

X Location: 0. ft
Y Location: 0. ft

No. of observations: 136

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.0042	2.932	1.152	3.291	17.64	1.146
0.0092	3.404	1.226	3.278	18.64	1.077
0.0142	4.168	1.304	3.259	19.64	1.017
0.02	3.028	1.387	3.241	20.64	0.957
0.0262	3.97	1.476	3.222	21.64	0.906
0.0327	3.273	1.569	3.204	22.64	0.856
0.0397	3.773	1.667	3.181	23.64	0.809
0.047	3.432	1.772	3.158	24.64	0.763
0.0549	3.612	1.882	3.135	25.64	0.726
0.0632	3.57	1.999	3.111	26.64	0.685
0.072	3.58	2.124	3.084	27.64	0.65
0.0814	3.534	2.256	3.056	28.64	0.623
0.0912	3.543	2.396	3.028	29.64	0.586
0.1017	3.557	2.544	2.996	30.64	0.563
0.1127	3.547	2.701	2.968	31.64	0.535
0.1244	3.543	2.867	2.936	32.64	0.512
0.1369	3.543	3.044	2.899	33.64	0.493
0.15	3.538	3.231	2.865	34.64	0.47
0.164	3.534	3.429	2.828	35.64	0.452
0.1789	3.529	3.639	2.786	36.64	0.433

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.1945	3.524	3.861	2.749	37.64	0.42
0.2112	3.52	4.096	2.703	38.64	0.403
0.2289	3.515	4.344	2.662	39.64	0.392
0.2475	3.511	4.607	2.616	40.64	0.383
0.2674	3.506	4.887	2.565	41.64	0.373
0.2884	3.501	5.184	2.519	42.64	0.364
0.3105	3.497	5.497	2.468	43.64	0.355
0.334	3.487	5.829	2.417	44.64	0.346
0.3589	3.483	6.181	2.362	45.64	0.337
0.3839	3.478	6.554	2.3	46.64	0.337
0.4105	3.469	6.949	2.244	47.64	0.327
0.4389	3.464	7.367	2.184	48.64	0.327
0.4689	3.453	7.811	2.124	49.64	0.318
0.5005	3.448	8.281	2.06	50.64	0.313
0.5355	3.439	8.779	1.995	51.64	0.313
0.5722	3.43	9.306	1.93	52.64	0.309
0.6105	3.416	9.864	1.861	53.64	0.304
0.6522	3.407	10.46	1.797	54.64	0.3
0.6955	3.402	11.08	1.721	55.64	0.304
0.7422	3.388	11.75	1.651	56.64	0.3
0.7905	3.374	12.45	1.578	57.64	0.3
0.8422	3.365	13.19	1.508	58.64	0.3
0.8972	3.351	13.98	1.435	59.64	0.3
0.9555	3.338	14.82	1.361	60.64	0.3
1.017	3.324	15.71	1.287		
1.082	3.31	16.64	1.218		

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.3087	ft/day
y0	3.493	ft

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
K	0.3105	0.004477	ft/day
y0	3.558	0.01429	ft

Parameter Correlations

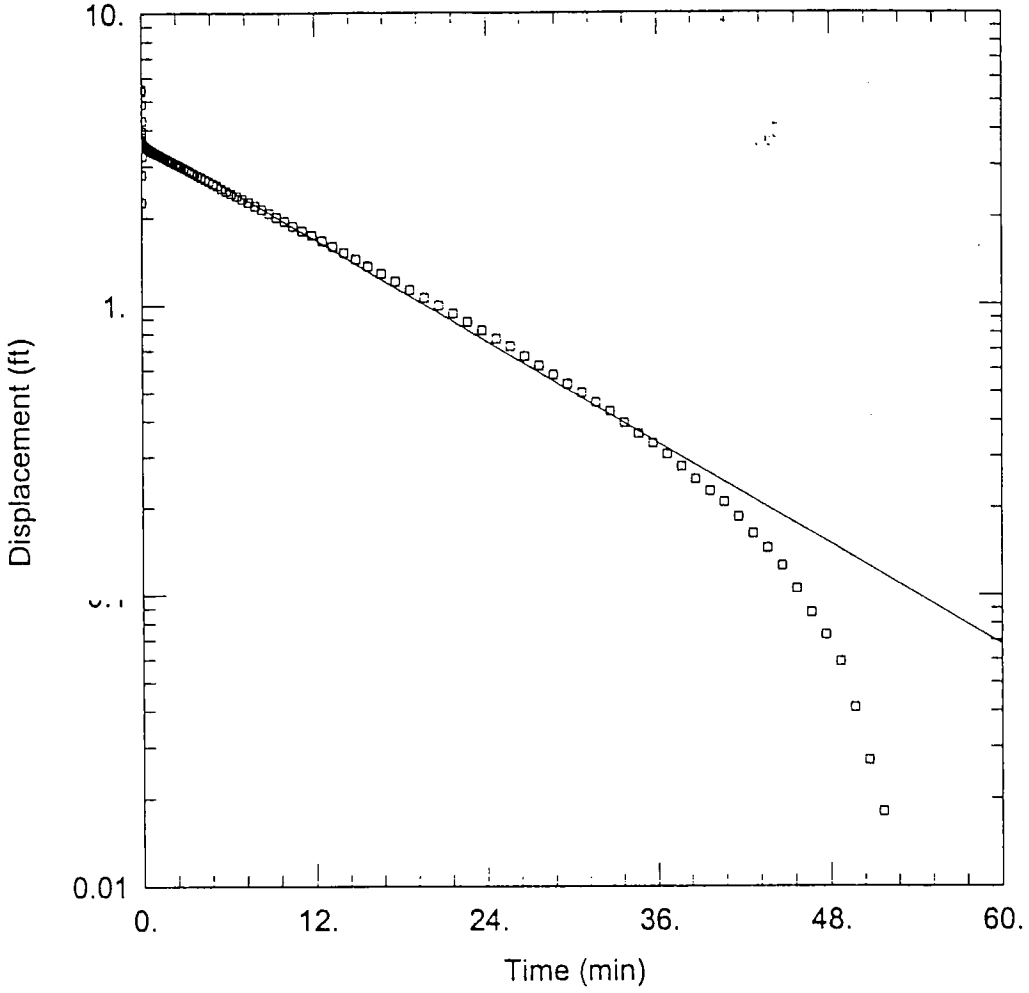
	K	y0

K	1.00	0.47
y0	0.47	1.00

Residual Statistics

for weighted residuals

Sum of Squares ... 1.358 ft^2
Variance..... 0.01045 ft^2
Std. Deviation ..... 0.1022 ft
Mean ..... 0.02266 ft
No. of Residuals... 132.
No. of Estimates... 2



MONITORING WELL MW-2 SLUG OUT

Data Set: C:\WINDOWS\DESKTOP\BAILEY\1077W2OT.AQT
Date: 06/06/00 Time: 15:50:18

PROJECT INFORMATION

Company: Evans Mill Env., Inc.
Client: Gilman Dev., Co.
Project: 1077.02
Test Location: Bailey Farm
Test Well: MW-2
Test Date: March 22, 2000

AQUIFER DATA

Saturated Thickness: 29.2 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 5.5 ft
Water Column Height: 29.2 ft
Casing Radius: 0.1666 ft
Wellbore Radius: 0.3542 ft
Screen Length: 15. ft

SOLUTION

Aquifer Model: Unconfined
K = 0.3338 ft/day
Solution Method: Hvorslev
y0 = 3.744 ft

Data Set: C:\WINDOWS\DESKTOP\BAILEY\1077W2OT.AQT
Title: Monitoring Well MW-2 Slug Out
Date: 06/06/00
Time: 15:51:38

PROJECT INFORMATION

Company: Evans Mill Env., Inc.
Client: Gilman Dev., Co.
Project: 1077.02
Location: Bailey Farm
Test Date: March 22, 2000
Test Well: MW-2

AQUIFER DATA

Saturated Thickness: 29.2 ft
Anisotropy Ratio (Kz/Kr): 1.

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: MW-2

X Location: 0. ft
Y Location: 0. ft

No. of observations: 142

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.005	5.42	0.6063	3.409	9.935	1.935
0.01	2.26	0.643	3.404	10.53	1.865
0.015	4.887	0.6813	3.395	11.15	1.796
0.02	2.807	0.723	3.386	11.82	1.736
0.025	4.297	0.7663	3.372	12.52	1.662
0.03	3.249	0.813	3.362	13.26	1.589
0.035	3.944	0.8613	3.353	14.05	1.515
0.04	3.469	0.913	3.339	14.89	1.441
0.045	3.764	0.968	3.33	15.78	1.36
0.05	3.552	1.026	3.316	16.71	1.282
0.055	3.672	1.088	3.307	17.71	1.208
0.06	3.584	1.153	3.293	18.71	1.13
0.065	3.63	1.223	3.279	19.71	1.06
0.07	3.593	1.296	3.266	20.71	0.996
0.075	3.612	1.375	3.247	21.71	0.936
0.08	3.588	1.458	3.229	22.71	0.876
0.085	3.588	1.546	3.215	23.71	0.82
0.0908	3.579	1.64	3.196	24.71	0.767
0.097	3.579	1.738	3.178	25.71	0.724
0.1035	3.575	1.843	3.155	26.71	0.668

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.1105	3.57	1.953	3.136	27.71	0.62
0.1178	3.565	2.07	3.113	28.71	0.578
0.1257	3.565	2.195	3.088	29.71	0.537
0.134	3.556	2.326	3.065	30.71	0.5
0.1428	3.552	2.466	3.037	31.71	0.463
0.1522	3.547	2.615	3.014	32.71	0.431
0.162	3.542	2.771	2.982	33.71	0.394
0.1725	3.542	2.938	2.954	34.71	0.361
0.1835	3.538	3.115	2.922	35.71	0.334
0.1952	3.524	3.301	2.89	36.71	0.306
0.2077	3.529	3.5	2.853	37.71	0.278
0.2208	3.515	3.71	2.82	38.71	0.251
0.2348	3.515	3.931	2.779	39.71	0.228
0.2497	3.524	4.166	2.742	40.71	0.209
0.2653	3.492	4.415	2.7	41.71	0.186
0.282	3.496	4.678	2.659	42.71	0.163
0.2997	3.492	4.958	2.613	43.71	0.145
0.3183	3.492	5.255	2.571	44.71	0.126
0.3382	3.482	5.568	2.518	45.71	0.105
0.3592	3.478	5.9	2.467	46.71	0.087
0.3813	3.469	6.251	2.417	47.71	0.073
0.4048	3.464	6.625	2.366	48.71	0.059
0.4297	3.455	7.02	2.311	49.71	0.041
0.4547	3.45	7.438	2.251	50.71	0.027
0.4813	3.445	7.881	2.191	51.71	0.018
0.5097	3.436	8.351	2.131	52.71	0.004
0.5397	3.427	8.85	2.066		
0.5713	3.422	9.376	2.002		

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.3338	ft/day
y0	3.744	ft

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
K	0.3273	0.009289	ft/day
y0	3.642	0.02608	ft

Parameter Correlations

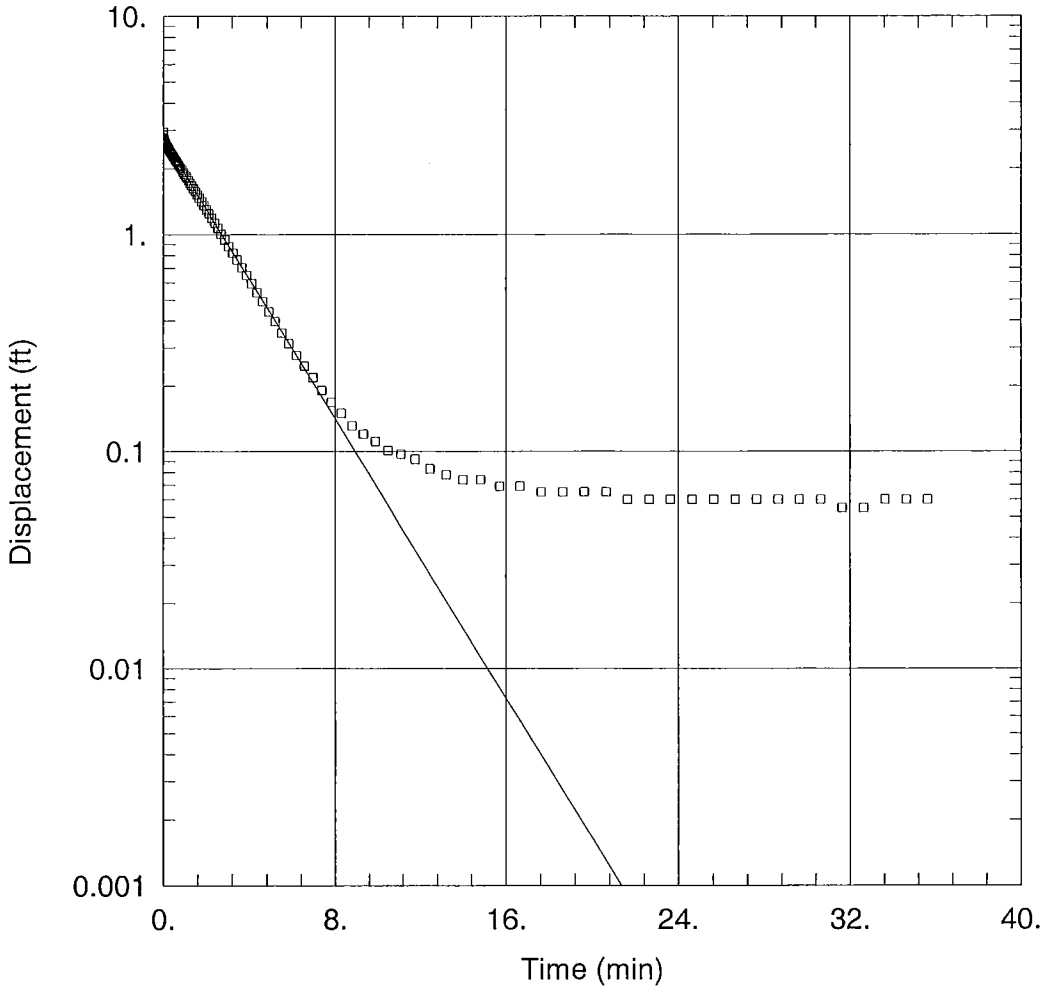
	K	y0
K	1.00	0.45
y0	0.45	1.00

Residual Statistics

for weighted residuals

Sum of Squares ... 5.785 ft^2
Variance..... 0.04254 ft^2
Std. Deviation ..... 0.2062 ft
Mean ..... -0.004095 ft
No. of Residuals... 138.
No. of Estimates... 2

MW-4



BAILY FARM

Data Set: P:\1500\1541-0~1.-BA\100WAS~1\120HYD~1\SLUGTE~1\MW-4OUT2.AQT
Date: 02/03/04 Time: 16:49:27

PROJECT INFORMATION

Company: Evans Mill Env.
Client: Corrine Development
Project: 1541-00-120
Test Location: Pocopson Township, Chester Co.
Test Well: MW-4
Test Date: 1/12/04

AQUIFER DATA

Saturated Thickness: 38.09 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 2.948 ft
Water Column Height: 38.09 ft
Casing Radius: 0.1667 ft
Wellbore Radius: 0.3542 ft
Screen Length: 32.9 ft

SOLUTION

Aquifer Model: Unconfined
K = 1.022 ft/day
Solution Method: Hvorslev
y0 = 2.74 ft

Data Set: P:\1500\1541-0~1.-BA\100WAS~1\120HYD~1\SLUGTE~1\MW-4OUT2.AQT
Title: Baily Farm
Date: 02/03/04
Time: 16:48:31

PROJECT INFORMATION

Company: Evans Mill Env.
Client: Corrine Development
Project: 1541-00-120
Location: Pocopson Township, Chester Co.
Test Date: 1/12/04
Test Well: MW-4

AQUIFER DATA

Saturated Thickness: 38.09 ft
Anisotropy Ratio (Kz/Kr): 1.

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: MW-4

X Location: 0. ft
Y Location: 0. ft

No. of observations: 113

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.001	2.948	0.6173	2.152	6.187	0.277
0.006	2.844	0.659	2.12	6.561	0.247
0.011	2.784	0.7023	2.083	6.956	0.219
0.016	2.763	0.749	2.051	7.374	0.191
0.021	2.759	0.7973	2.016	7.817	0.168
0.0268	2.736	0.849	1.979	8.287	0.15
0.033	2.773	0.904	1.938	8.786	0.131
0.0395	2.713	0.9623	1.898	9.312	0.12
0.0465	2.703	1.024	1.857	9.871	0.111
0.0538	2.699	1.089	1.82	10.46	0.101
0.0617	2.685	1.159	1.772	11.09	0.097
0.07	2.676	1.232	1.725	11.75	0.092
0.0788	2.66	1.311	1.675	12.46	0.083
0.0882	2.66	1.394	1.626	13.2	0.078
0.098	2.632	1.482	1.575	13.99	0.074
0.1085	2.613	1.576	1.525	14.83	0.074
0.1195	2.595	1.674	1.472	15.71	0.069
0.1312	2.558	1.779	1.416	16.65	0.069
0.1437	2.567	1.889	1.359	17.64	0.065
0.1568	2.542	2.006	1.303	18.64	0.065

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.1708	2.523	2.131	1.248	19.64	0.065
0.1857	2.528	2.262	1.186	20.64	0.065
0.2013	2.514	2.402	1.13	21.64	0.06
0.218	2.496	2.551	1.068	22.64	0.06
0.2357	2.482	2.707	1.003	23.64	0.06
0.2543	2.464	2.874	0.946	24.64	0.06
0.2742	2.443	3.051	0.881	25.64	0.06
0.2952	2.424	3.237	0.821	26.64	0.06
0.3173	2.401	3.436	0.764	27.64	0.06
0.3408	2.378	3.646	0.704	28.64	0.06
0.3657	2.36	3.867	0.65	29.64	0.06
0.3907	2.337	4.102	0.595	30.64	0.06
0.4173	2.314	4.351	0.54	31.64	0.055
0.4457	2.288	4.614	0.491	32.64	0.055
0.4757	2.265	4.894	0.441	33.64	0.06
0.5073	2.237	5.191	0.397	34.64	0.06
0.5423	2.205	5.504	0.351	35.64	0.06
0.579	2.18	5.836	0.314		

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	1.022	ft/day
y0	2.74	ft

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
K	1.028	0.00956	ft/day
y0	2.736	0.00806	ft

Parameter Correlations

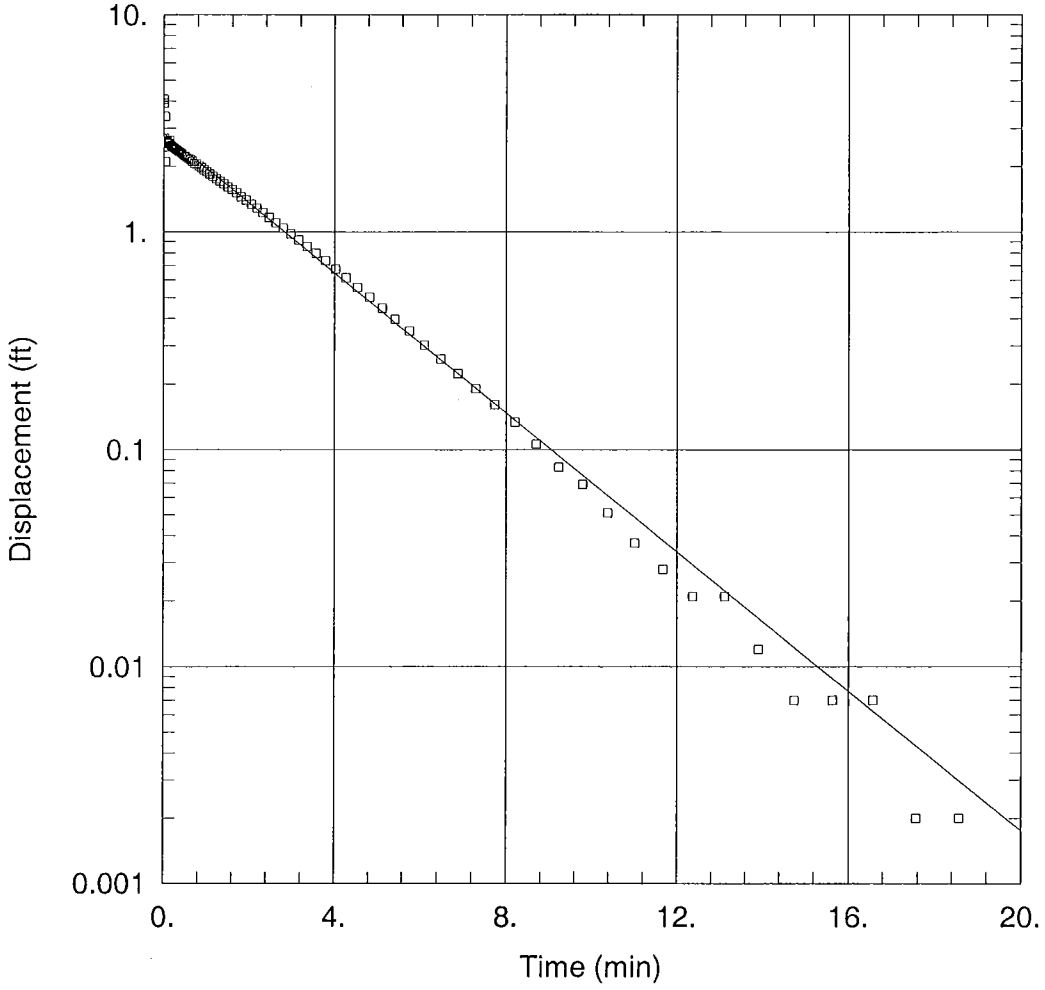
	K	y0
K	1.00	0.57
y0	0.57	1.00

Residual Statistics

for weighted residuals

Sum of Squares ... 0.1918 ft^2

Variance..... 0.001776 ft^2
Std. Deviation..... 0.04214 ft
Mean ..... 0.0165 ft
No. of Residuals ... 110.
No. of Estimates ... 2



BAILY FARM

Data Set: P:\1500\1541-0~1.-BA\100WAS~1\120HYD~1\SLUGTE~1\MW-4IN1.AQT
Date: 02/03/04 Time: 16:53:01

PROJECT INFORMATION

Company: Evans Mill Env.
Client: Corrine Development
Project: 1541-00-120
Test Location: Pocopson Township, Chester Co.
Test Well: MW-4
Test Date: 1/12/04

AQUIFER DATA

Saturated Thickness: 38.09 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 4.083 ft
Water Column Height: 38.09 ft
Casing Radius: 0.1667 ft
Wellbore Radius: 0.3542 ft
Screen Length: 32.9 ft

SOLUTION

Aquifer Model: Unconfined
K = 1.018 ft/day
Solution Method: Hvorslev
y0 = 2.84 ft

Data Set: P:\1500\1541-0~1.-BA\100WAS~1\120HYD~1\SLUGTE~1\MW-4IN1.AQT
Title: Baily Farm
Date: 02/03/04
Time: 16:45:59

PROJECT INFORMATION

Company: Evans Mill Env.
Client: Corrine Development
Project: 1541-00-120
Location: Pocopson Township, Chester Co.
Test Date: 1/12/04
Test Well: MW-4

AQUIFER DATA

Saturated Thickness: 38.09 ft
Anisotropy Ratio (Kz/Kr): 1.

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: MW-4

X Location: 0. ft
Y Location: 0. ft

No. of observations: 84

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.0008	4.083	0.6243	2.15	3.789	0.736
0.0102	3.919	0.671	2.113	4.024	0.674
0.02	2.706	0.7193	2.062	4.273	0.614
0.0305	3.407	0.771	2.048	4.536	0.556
0.0415	2.106	0.826	2.011	4.816	0.501
0.0532	2.454	0.8843	1.977	5.113	0.447
0.0657	2.623	0.946	1.931	5.426	0.397
0.0788	2.604	1.011	1.889	5.758	0.351
0.0928	2.59	1.081	1.845	6.109	0.302
0.1077	2.558	1.154	1.799	6.483	0.261
0.1233	2.553	1.233	1.753	6.878	0.224
0.14	2.639	1.316	1.709	7.296	0.191
0.1577	2.507	1.404	1.663	7.739	0.161
0.1763	2.494	1.498	1.612	8.209	0.134
0.1962	2.475	1.596	1.564	8.708	0.106
0.2172	2.457	1.701	1.513	9.234	0.083
0.2393	2.438	1.811	1.449	9.793	0.069
0.2628	2.422	1.928	1.4	10.38	0.051
0.2877	2.399	2.053	1.34	11.01	0.037
0.3127	2.38	2.184	1.283	11.67	0.028

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.3393	2.357	2.324	1.223	12.38	0.021
0.3677	2.339	2.473	1.163	13.12	0.021
0.3977	2.316	2.629	1.1	13.91	0.012
0.4293	2.291	2.796	1.04	14.75	0.007
0.4643	2.263	2.973	0.978	15.63	0.007
0.501	2.235	3.159	0.918	16.57	0.007
0.5393	2.212	3.358	0.856	17.57	0.002
0.581	2.18	3.568	0.796	18.57	0.002

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	1.018	ft/day
y0	2.84	ft

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
K	1.056	0.05182	ft/day
y0	2.847	0.05092	ft

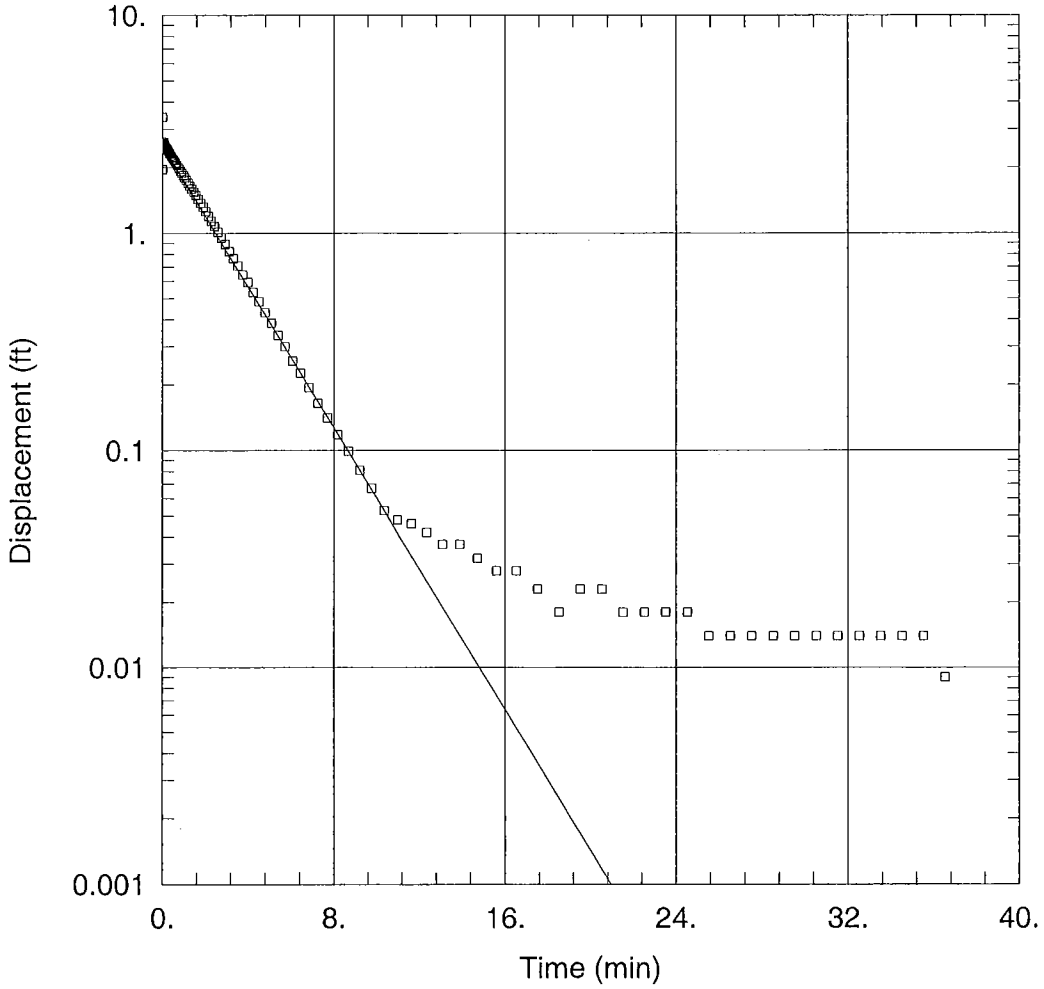
Parameter Correlations

	K	y0
K	1.00	0.62
y0	0.62	1.00

Residual Statistics

for weighted residuals

Sum of Squares ... 3.62 ft^2
Variance..... 0.04641 ft^2
Std. Deviation..... 0.2154 ft
Mean ..... 0.005538 ft
No. of Residuals ... 80.
No. of Estimates ... 2



BAILY FARM

Data Set: P:\1500\1541-0~1.-BA\100WAS~1\120HYD~1\SLUGTE~1\MW-4IN2.AQT
Date: 02/03/04 Time: 16:51:47

PROJECT INFORMATION

Company: Evans Mill Env.
Client: Corrine Development
Project: 1541-00-120
Test Location: Pocopson Township, Chester Co.
Test Well: MW-4
Test Date: 1/12/04

AQUIFER DATA

Saturated Thickness: 38.1 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 3.414 ft Water Column Height: 38.1 ft
Casing Radius: 0.1667 ft Wellbore Radius: 0.3542 ft
Screen Length: 32.9 ft

SOLUTION

Aquifer Model: Unconfined K = 1.03 ft/day
Solution Method: Hvorslev y0 = 2.528 ft

Data Set: P:\1500\1541-0~1.-BA\100WAS~1\120HYD~1\SLUGTE~1\MW-4IN2.AQT
Title: Baily Farm
Date: 02/03/04
Time: 16:43:58

PROJECT INFORMATION

Company: Evans Mill Env.
Client: Corrine Development
Project: 1541-00-120
Location: Pocopson Township, Chester Co.
Test Date: 1/12/04
Test Well: MW-4

AQUIFER DATA

Saturated Thickness: 38.1 ft
Anisotropy Ratio (Kz/Kr): 1.

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: MW-4

X Location: 0. ft
Y Location: 0. ft

No. of observations: 99

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.0005	3.414	1.051	1.802	8.179	0.118
0.0115	1.963	1.124	1.751	8.678	0.099
0.0232	2.438	1.203	1.702	9.204	0.081
0.0357	2.556	1.286	1.647	9.763	0.067
0.0488	2.63	1.374	1.599	10.35	0.053
0.0628	2.602	1.468	1.543	10.98	0.048
0.0777	2.583	1.566	1.492	11.64	0.046
0.0933	2.556	1.671	1.435	12.35	0.042
0.11	2.537	1.781	1.375	13.09	0.037
0.1277	2.519	1.898	1.319	13.88	0.037
0.1463	2.5	2.023	1.257	14.72	0.032
0.1662	2.477	2.154	1.197	15.6	0.028
0.1872	2.459	2.294	1.135	16.54	0.028
0.2093	2.443	2.443	1.075	17.54	0.023
0.2328	2.42	2.599	1.013	18.54	0.018
0.2577	2.401	2.766	0.953	19.54	0.023
0.2827	2.378	2.943	0.89	20.54	0.023
0.3093	2.346	3.129	0.826	21.54	0.018
0.3377	2.327	3.328	0.766	22.54	0.018
0.3677	2.307	3.538	0.708	23.54	0.018

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.3993	2.274	3.759	0.644	24.54	0.018
0.4343	2.247	3.994	0.595	25.54	0.014
0.471	2.219	4.243	0.535	26.54	0.014
0.5093	2.182	4.506	0.484	27.54	0.014
0.551	2.157	4.786	0.431	28.54	0.014
0.5943	2.12	5.083	0.385	29.54	0.014
0.641	2.088	5.396	0.339	30.54	0.014
0.6893	2.051	5.728	0.3	31.54	0.014
0.741	2.011	6.079	0.258	32.54	0.014
0.796	1.975	6.453	0.226	33.54	0.014
0.8543	1.928	6.848	0.194	34.54	0.014
0.916	1.887	7.266	0.164	35.54	0.014
0.981	1.843	7.709	0.141	36.54	0.009

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	1.03	ft/day
y0	2.528	ft

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
K	1.055	0.02	ft/day
y0	2.694	0.01892	ft

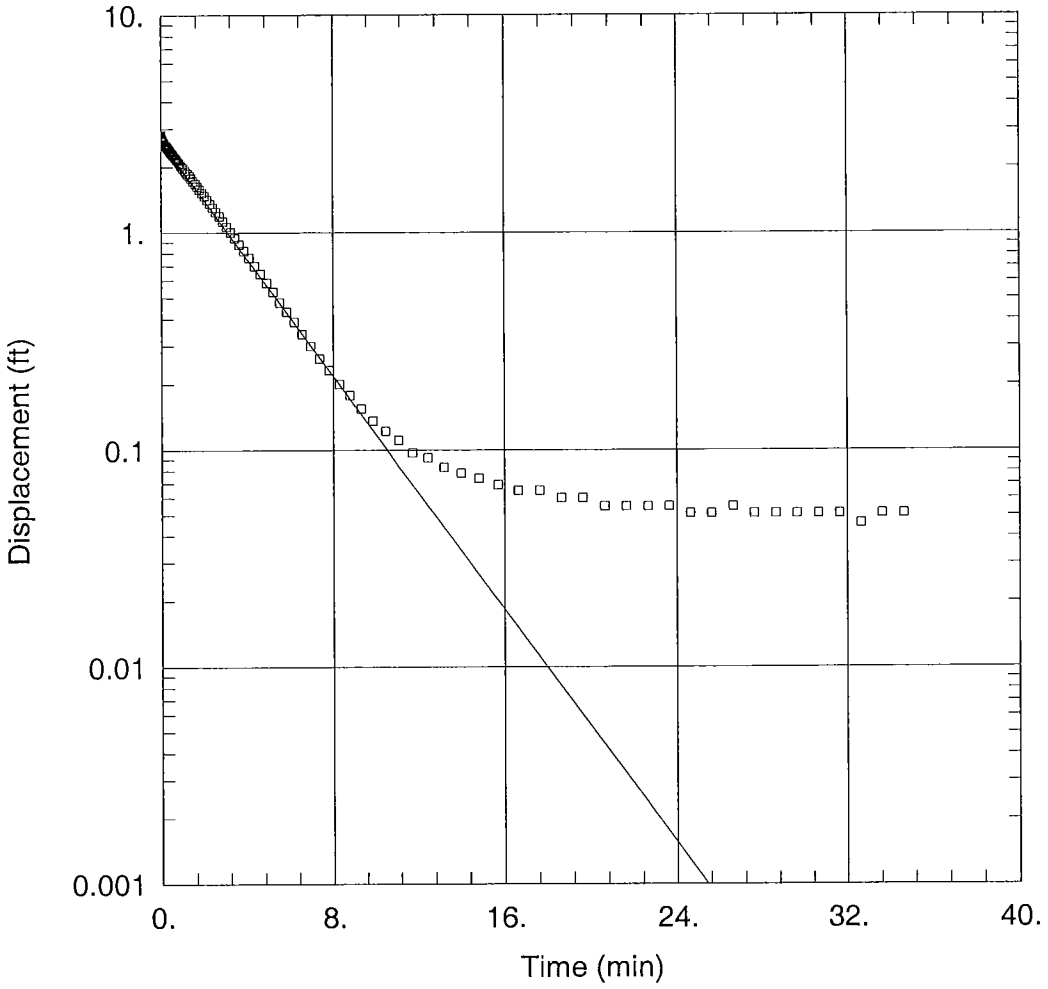
Parameter Correlations

	K	y0
K	1.00	0.63
y0	0.63	1.00

Residual Statistics

for weighted residuals

Sum of Squares ... 0.5657 ft^2
Variance ..... 0.006018 ft^2
Std. Deviation..... 0.07758 ft
Mean ..... 0.005343 ft
No. of Residuals ... 96.
No. of Estimates ... 2



BAILY FARM

Data Set: P:\1500\1541-0~1.-BA\100WAS~1\120HYD~1\SLUGTE~1\MW-4OUT1.AQT
Date: 02/03/04 Time: 16:50:47

PROJECT INFORMATION

Company: Evans Mill Env.
Client: Corrine Development
Project: 1541-00-120
Test Location: Pocopson Township, Chester Co.
Test Well: MW-4
Test Date: 1/12/04

AQUIFER DATA

Saturated Thickness: 38.07 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 2.812 ft
Water Column Height: 38.07 ft
Casing Radius: 0.1667 ft
Wellbore Radius: 0.3542 ft
Screen Length: 32.9 ft

SOLUTION

Aquifer Model: Unconfined
K = 0.8523 ft/day
Solution Method: Hvorslev
y0 = 2.598 ft

Data Set: P:\1500\1541-0~1.-BA\100WAS~1\120HYD~1\SLUGTE~1\MW-4OUT1.AQT
Title: Baily Farm
Date: 02/03/04
Time: 16:47:01

PROJECT INFORMATION

Company: Evans Mill Env.
Client: Corrine Development
Project: 1541-00-120
Location: Pocopson Township, Chester Co.
Test Date: 1/12/04
Test Well: MW-4

AQUIFER DATA

Saturated Thickness: 38.07 ft
Anisotropy Ratio (Kz/Kr): 1.

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: MW-4

X Location: 0. ft
Y Location: 0. ft

No. of observations: 111

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.001	2.812	0.6123	2.228	5.831	0.431
0.006	2.807	0.654	2.201	6.182	0.388
0.011	2.775	0.6973	2.175	6.556	0.341
0.016	2.759	0.744	2.148	6.951	0.3
0.0218	2.759	0.7923	2.115	7.369	0.263
0.028	2.736	0.844	2.083	7.812	0.233
0.0345	2.722	0.899	2.046	8.282	0.201
0.0415	2.717	0.9573	2.011	8.781	0.178
0.0488	2.699	1.019	1.975	9.307	0.155
0.0567	2.694	1.084	1.938	9.866	0.136
0.065	2.69	1.154	1.898	10.46	0.122
0.0738	2.657	1.227	1.861	11.08	0.111
0.0832	2.667	1.306	1.82	11.75	0.097
0.093	2.641	1.389	1.774	12.45	0.092
0.1035	2.632	1.477	1.725	13.2	0.083
0.1145	2.609	1.571	1.675	13.99	0.078
0.1262	2.609	1.669	1.626	14.82	0.074
0.1387	2.581	1.774	1.575	15.71	0.069
0.1518	2.567	1.884	1.52	16.65	0.065
0.1658	2.563	2.001	1.472	17.64	0.065

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.1807	2.54	2.126	1.412	18.64	0.06
0.1963	2.51	2.257	1.359	19.64	0.06
0.213	2.51	2.397	1.303	20.64	0.055
0.2307	2.514	2.546	1.243	21.64	0.055
0.2493	2.5	2.702	1.186	22.64	0.055
0.2692	2.482	2.869	1.126	23.64	0.055
0.2902	2.468	3.046	1.063	24.64	0.051
0.3123	2.45	3.232	1.003	25.64	0.051
0.3358	2.429	3.431	0.941	26.64	0.055
0.3607	2.41	3.641	0.881	27.64	0.051
0.3857	2.387	3.862	0.821	28.64	0.051
0.4123	2.369	4.097	0.764	29.64	0.051
0.4407	2.35	4.346	0.699	30.64	0.051
0.4707	2.327	4.609	0.646	31.64	0.051
0.5023	2.307	4.889	0.586	32.64	0.046
0.5373	2.284	5.186	0.533	33.64	0.051
0.574	2.256	5.499	0.477	34.64	0.051

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.8523	ft/day
y0	2.598	ft

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
K	0.8592	0.006011	ft/day
y0	2.723	0.005853	ft

Parameter Correlations

	K	y0
K	1.00	0.56
y0	0.56	1.00

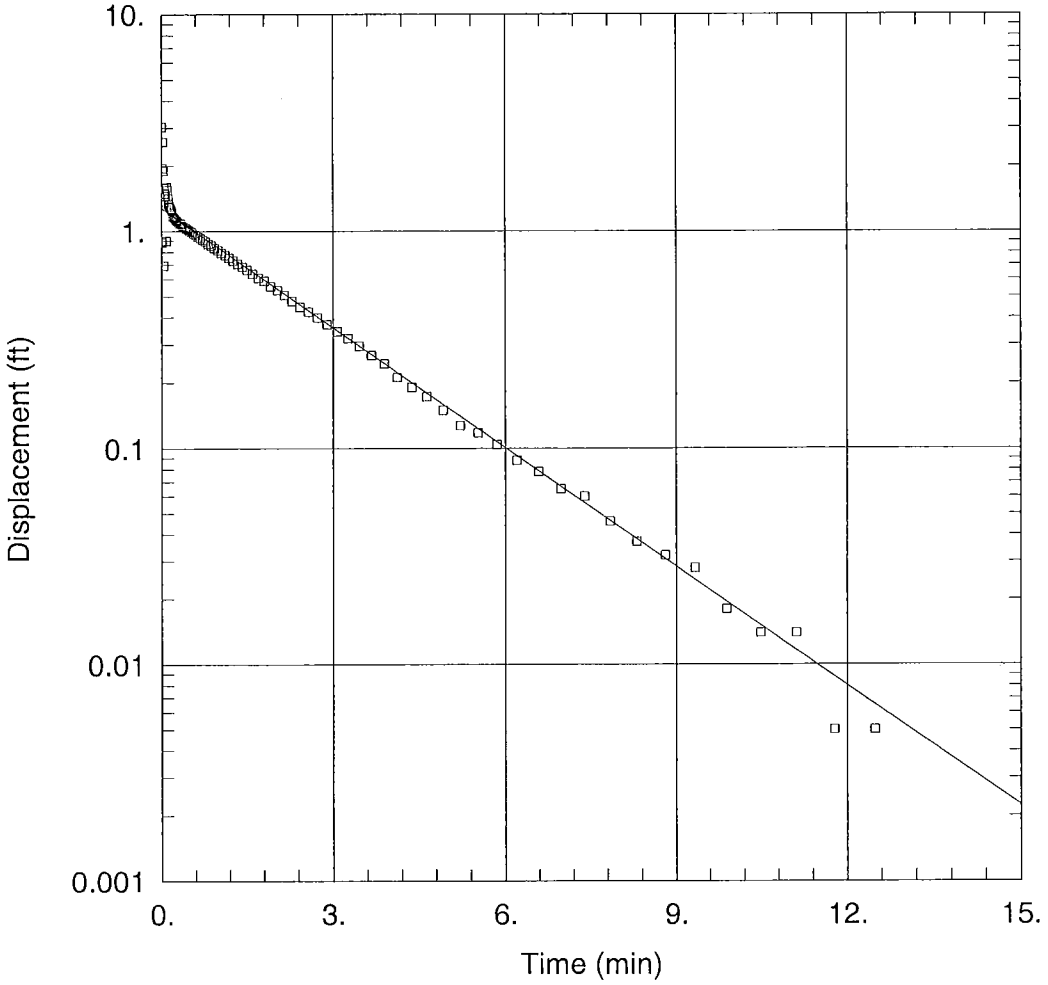
Residual Statistics

for weighted residuals

Sum of Squares ... 0.1091 ft^2
Variance..... 0.001019 ft^2

Std. Deviation..... 0.03193 ft
Mean ..... 0.0111 ft
No. of Residuals ... 109.
No. of Estimates ... 2

MW-5



BAILY FARM

Data Set: P:\1500\1541-0~1.-BA\100WAS~1\120HYD~1\SLUGTE~1\MW-5IN1.AQT
Date: 02/04/04 Time: 08:21:00

PROJECT INFORMATION

Company: Evans Mill Env.
Client: Corrine Development
Project: 1541-00-120
Test Location: Pocopson Township, Chester Co.
Test Well: MW-5
Test Date: 1/12/04

AQUIFER DATA

Saturated Thickness: 18.75 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 3.036 ft
Casing Radius: 0.1667 ft
Screen Length: 22.5 ft
Water Column Height: 18.75 ft
Wellbore Radius: 0.3542 ft
Gravel Pack Porosity: 0.4

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev
K = 3.756 ft/day
y0 = 1.278 ft

Data Set: P:\1500\1541-0~1.-BA\100WAS~1\120HYD~1\SLUGTE~1\MW-5IN1.AQT
Title: Baily Farm
Date: 02/04/04
Time: 08:21:05

PROJECT INFORMATION

Company: Evans Mill Env.
Client: Corrine Development
Project: 1541-00-120
Location: Pocopson Township, Chester Co.
Test Date: 1/12/04
Test Well: MW-5

AQUIFER DATA

Saturated Thickness: 18.75 ft
Anisotropy Ratio (Kz/Kr): 1.

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: MW-5

X Location: 0. ft
Y Location: 0. ft

No. of observations: 93

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.004	3.036	0.3182	1.089	2.154	0.507
0.009	0.888	0.3403	1.082	2.285	0.475
0.014	1.956	0.3638	1.063	2.425	0.447
0.019	2.583	0.3887	1.05	2.574	0.424
0.024	2.593	0.4137	1.04	2.73	0.399
0.029	1.903	0.4403	1.026	2.897	0.371
0.034	0.694	0.4687	1.017	3.074	0.344
0.039	1.37	0.4987	1.003	3.26	0.321
0.044	1.451	0.5303	0.99	3.459	0.295
0.0498	1.587	0.5653	0.976	3.669	0.268
0.056	1.488	0.602	0.96	3.89	0.245
0.0625	1.497	0.6403	0.941	4.125	0.212
0.0695	1.46	0.682	0.927	4.374	0.191
0.0768	1.456	0.7253	0.909	4.637	0.173
0.0847	0.902	0.772	0.895	4.917	0.15
0.093	1.601	0.8203	0.872	5.214	0.127
0.1018	1.55	0.872	0.856	5.527	0.118
0.1112	1.412	0.927	0.833	5.859	0.104
0.121	1.338	0.9853	0.814	6.21	0.088
0.1315	1.319	1.047	0.791	6.584	0.078

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.1425	1.303	1.112	0.773	6.979	0.065
0.1542	1.285	1.182	0.752	7.397	0.06
0.1667	1.262	1.255	0.729	7.84	0.046
0.1798	1.248	1.334	0.706	8.31	0.037
0.1938	1.176	1.417	0.683	8.809	0.032
0.2087	1.163	1.505	0.66	9.335	0.028
0.2243	1.153	1.599	0.634	9.894	0.018
0.241	1.135	1.697	0.607	10.49	0.014
0.2587	1.126	1.802	0.588	11.11	0.014
0.2773	1.112	1.912	0.556	11.78	0.005
0.2972	1.098	2.029	0.533	12.48	0.005

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	3.756	ft/day
y0	1.278	ft

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
K	6.104	0.6295	ft/day
y0	1.62	0.06216	ft

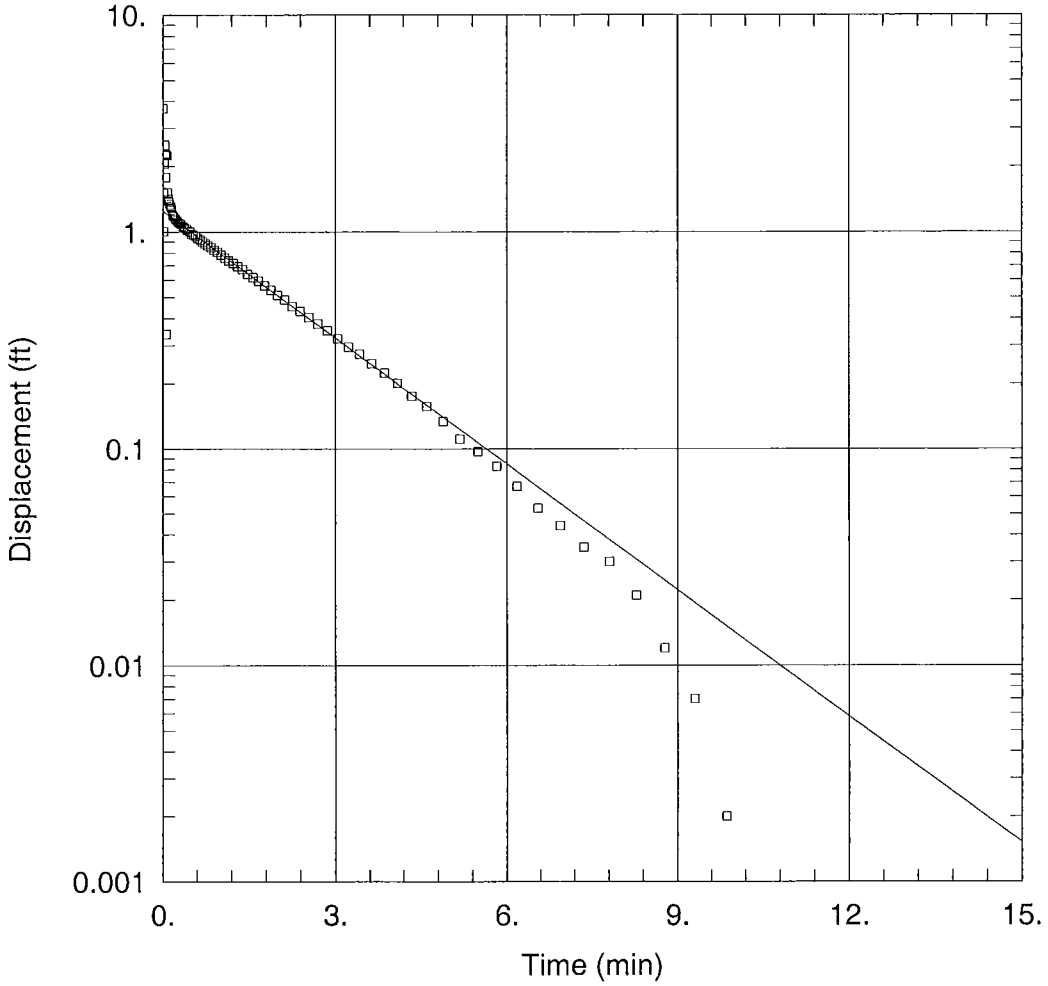
Parameter Correlations

	K	y0
K	1.00	0.64
y0	0.64	1.00

Residual Statistics

for weighted residuals

Sum of Squares ... 5.406 ft^2
Variance ..... 0.06593 ft^2
Std. Deviation..... 0.2568 ft
Mean ..... 0.02412 ft
No. of Residuals ... 84.
No. of Estimates ... 2



BAILY FARM

Data Set: P:\1500\1541-0~1.-BA\100WAS~1\120HYD~1\SLUGTE~1\MW-5IN2.AQT
Date: 02/04/04 Time: 08:22:36

PROJECT INFORMATION

Company: Evans Mill Env.
Client: Corrine Development
Project: 1541-00-120
Test Location: Pocopson Township, Chester Co.
Test Well: MW-5
Test Date: 1/12/04

AQUIFER DATA

Saturated Thickness: 18.69 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 3.718 ft Water Column Height: 18.69 ft
Casing Radius: 0.1667 ft Wellbore Radius: 0.3542 ft
Screen Length: 22.5 ft Gravel Pack Porosity: 0.4

SOLUTION

Aquifer Model: Unconfined K = 3.97 ft/day
Solution Method: Hvorslev y0 = 1.245 ft

Data Set: P:\1500\1541-0~1.-BA\100WAS~1\120HYD~1\SLUGTE~1\MW-5IN2.AQT
Title: Baily Farm
Date: 02/04/04
Time: 08:22:41

PROJECT INFORMATION

Company: Evans Mill Env.
Client: Corrine Development
Project: 1541-00-120
Location: Pocopson Township, Chester Co.
Test Date: 1/12/04
Test Well: MW-5

AQUIFER DATA

Saturated Thickness: 18.69 ft
Anisotropy Ratio (Kz/Kr): 1.

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: MW-5

X Location: 0. ft
Y Location: 0. ft

No. of observations: 83

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.002	3.718	0.3567	1.056	2.122	0.487
0.007	1.525	0.3817	1.043	2.253	0.454
0.012	1.006	0.4083	1.033	2.393	0.431
0.0178	2.106	0.4367	1.015	2.542	0.404
0.024	2.058	0.4667	1.001	2.698	0.378
0.0305	2.512	0.4983	0.978	2.865	0.351
0.0375	2.274	0.5333	0.969	3.042	0.323
0.0448	1.781	0.57	0.955	3.228	0.295
0.0527	2.286	0.6083	0.934	3.427	0.274
0.061	0.339	0.65	0.92	3.637	0.247
0.0698	2.247	0.6933	0.902	3.858	0.224
0.0792	1.515	0.74	0.883	4.093	0.201
0.089	1.389	0.7883	0.865	4.342	0.175
0.0995	1.416	0.84	0.847	4.605	0.157
0.1105	1.37	0.895	0.826	4.885	0.134
0.1222	1.34	0.9533	0.807	5.182	0.111
0.1347	1.312	1.015	0.784	5.495	0.097
0.1478	1.285	1.08	0.761	5.827	0.083
0.1618	1.204	1.15	0.738	6.178	0.067
0.1767	1.186	1.223	0.717	6.552	0.053

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.1923	1.174	1.302	0.694	6.947	0.044
0.209	1.156	1.385	0.671	7.365	0.035
0.2267	1.142	1.473	0.639	7.808	0.03
0.2453	1.123	1.567	0.618	8.278	0.021
0.2652	1.11	1.665	0.595	8.777	0.012
0.2862	1.1	1.77	0.567	9.303	0.007
0.3083	1.086	1.88	0.54	9.862	0.002
0.3318	1.068	1.997	0.512		

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	3.97	ft/day
y0	1.245	ft

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
K	7.155	0.9182	ft/day
y0	1.715	0.08945	ft

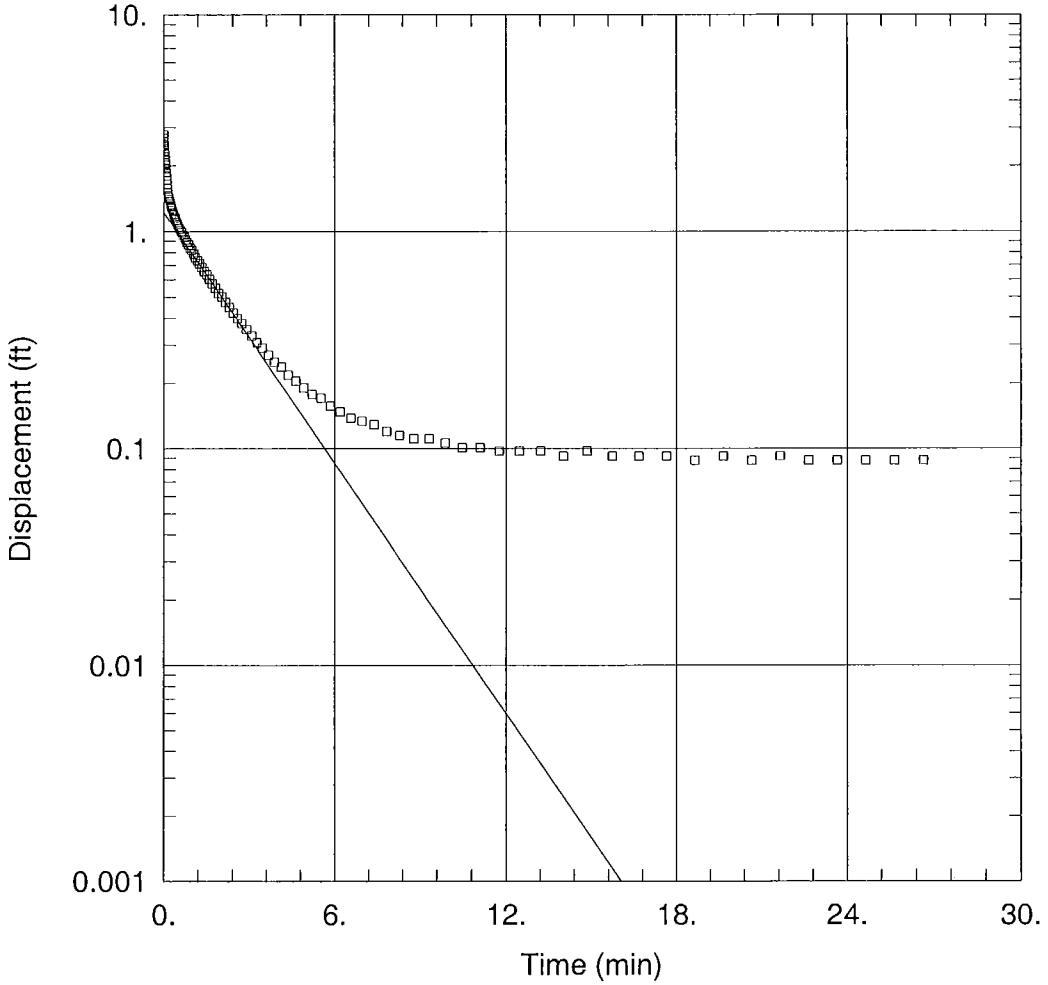
Parameter Correlations

	K	y0
K	1.00	0.67
y0	0.67	1.00

Residual Statistics

for weighted residuals

Sum of Squares ... 7.431 ft^2
Variance ..... 0.1018 ft^2
Std. Deviation..... 0.3191 ft
Mean ..... 0.03209 ft
No. of Residuals ... 75.
No. of Estimates ... 2



BAILY FARM

Data Set: P:\1500\1541-0~1.-BA\100WAS~1\120HYD~1\SLUGTE~1\MW-5OUT1.AQT
Date: 02/04/04 Time: 08:24:46

PROJECT INFORMATION

Company: Evans Mill Env.
Client: Corrine Development
Project: 1541-00-120
Test Location: Pocopson Township, Chester Co.
Test Well: MW-5
Test Date: 1/12/04

AQUIFER DATA

Saturated Thickness: 18.72 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 2.791 ft Water Column Height: 18.72 ft
Casing Radius: 0.1667 ft Wellbore Radius: 0.3542 ft
Screen Length: 22.5 ft Gravel Pack Porosity: 0.4

SOLUTION

Aquifer Model: Unconfined K = 3.934 ft/day
Solution Method: Hvorslev y0 = 1.218 ft

Data Set: P:\1500\1541-0~1.-BA\100WAS~1\120HYD~1\SLUGTE~1\MW-5OUT1.AQT
Title: Baily Farm
Date: 02/04/04
Time: 08:24:51

PROJECT INFORMATION

Company: Evans Mill Env.
Client: Corrine Development
Project: 1541-00-120
Location: Pocopson Township, Chester Co.
Test Date: 1/12/04
Test Well: MW-5

AQUIFER DATA

Saturated Thickness: 18.72 ft
Anisotropy Ratio (Kz/Kr): 1.

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: MW-5

X Location: 0. ft
Y Location: 0. ft

No. of observations: 106

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.001	2.791	0.4857	1.077	4.361	0.219
0.006	2.683	0.5173	1.054	4.624	0.205
0.011	2.593	0.5523	1.029	4.904	0.191
0.016	2.519	0.589	1.006	5.201	0.178
0.021	2.48	0.6273	0.987	5.514	0.171
0.026	2.415	0.669	0.964	5.846	0.157
0.031	2.357	0.7123	0.943	6.197	0.148
0.0368	2.318	0.759	0.916	6.571	0.138
0.043	2.267	0.8073	0.893	6.966	0.134
0.0495	2.201	0.859	0.87	7.384	0.129
0.0565	2.145	0.914	0.842	7.827	0.12
0.0638	2.064	0.9723	0.821	8.297	0.115
0.0717	2.016	1.034	0.789	8.796	0.111
0.08	1.942	1.099	0.761	9.322	0.111
0.0888	1.871	1.169	0.734	9.881	0.106
0.0982	1.804	1.242	0.713	10.47	0.101
0.108	1.718	1.321	0.685	11.1	0.101
0.1185	1.654	1.404	0.657	11.76	0.097
0.1295	1.582	1.492	0.634	12.47	0.097
0.1412	1.502	1.586	0.604	13.21	0.097

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.1537	1.456	1.684	0.577	14.	0.092
0.1668	1.43	1.789	0.549	14.84	0.097
0.1808	1.426	1.899	0.521	15.72	0.092
0.1957	1.398	2.016	0.501	16.66	0.092
0.2113	1.368	2.141	0.473	17.65	0.092
0.228	1.34	2.272	0.45	18.65	0.088
0.2457	1.317	2.412	0.422	19.65	0.092
0.2643	1.294	2.561	0.399	20.65	0.088
0.2842	1.271	2.717	0.378	21.65	0.092
0.3052	1.246	2.884	0.355	22.65	0.088
0.3273	1.218	3.061	0.332	23.65	0.088
0.3508	1.195	3.247	0.309	24.65	0.088
0.3757	1.167	3.446	0.291	25.65	0.088
0.4007	1.151	3.656	0.27	26.65	0.088
0.4273	1.128	3.877	0.251		
0.4557	1.1	4.112	0.238		

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	3.934	ft/day
y0	1.218	ft

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
K	9.767	0.6614	ft/day
y0	2.129	0.05181	ft

Parameter Correlations

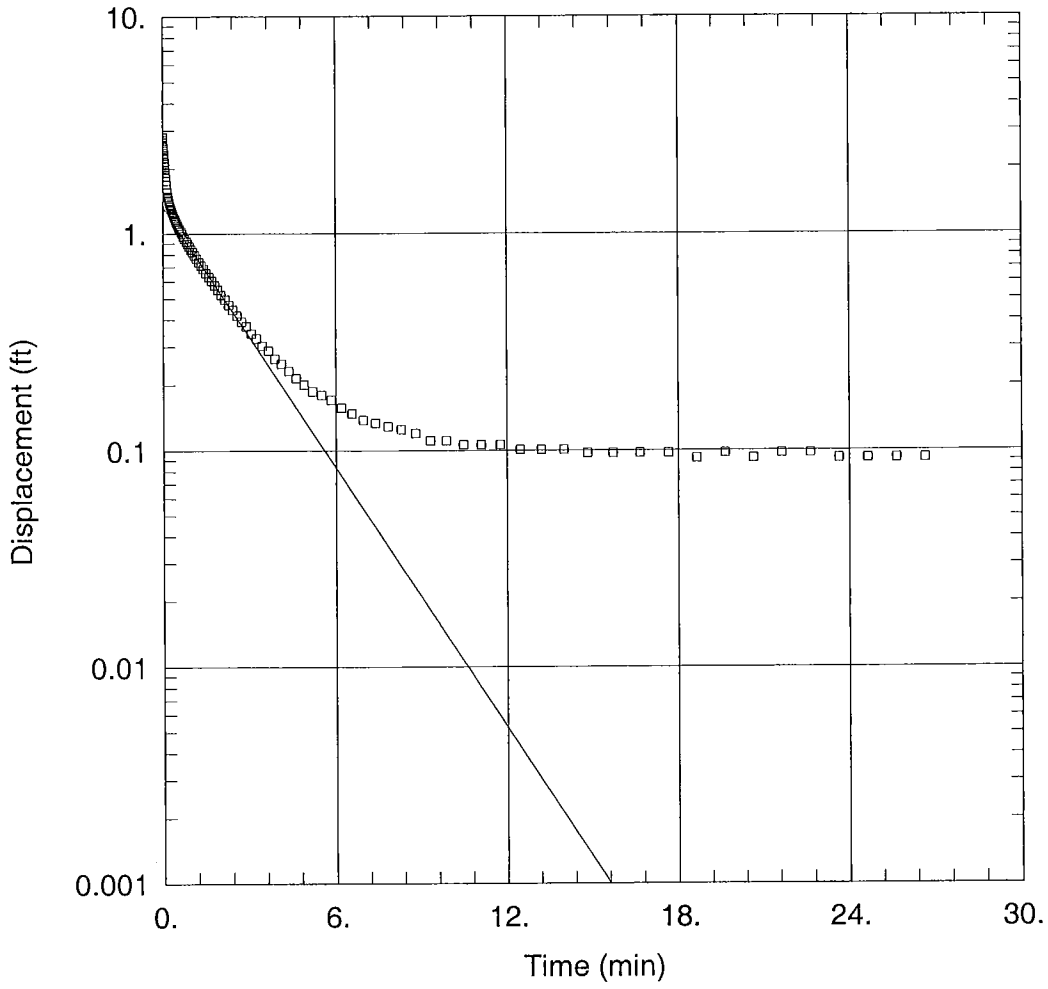
	K	y0
K	1.00	0.61
y0	0.61	1.00

Residual Statistics

for weighted residuals

Sum of Squares ... 5.204 ft^2
Variance..... 0.05004 ft^2
Std. Deviation..... 0.2237 ft

Mean ..... 0.06971 ft
No. of Residuals ... 106.
No. of Estimates ... 2



BAILY FARM

Data Set: P:\1500\1541-0~1.-BA\100WAS~1\120HYD~1\SLUGTE~1\MW-5OUT2.AQT
Date: 02/04/04 Time: 08:26:22

PROJECT INFORMATION

Company: Evans Mill Env.
Client: Corrine Development
Project: 1541-00-120
Test Location: Pocopson Township, Chester Co.
Test Well: MW-5
Test Date: 1/12/04

AQUIFER DATA

Saturated Thickness: 18.7 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 2.793 ft
Casing Radius: 0.1667 ft
Screen Length: 22.5 ft
Water Column Height: 18.7 ft
Wellbore Radius: 0.3542 ft
Gravel Pack Porosity: 0.4

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev
K = 4.091 ft/day
y0 = 1.32 ft

Data Set: P:\1500\1541-0~1.-BA\100WAS~1\120HYD~1\SLUGTE~1\MW-5OUT2.AQT
Title: Baily Farm
Date: 02/04/04
Time: 08:26:27

PROJECT INFORMATION

Company: Evans Mill Env.
Client: Corrine Development
Project: 1541-00-120
Location: Pocopson Township, Chester Co.
Test Date: 1/12/04
Test Well: MW-5

AQUIFER DATA

Saturated Thickness: 18.7 ft
Anisotropy Ratio (Kz/Kr): 1.

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: MW-5

X Location: 0. ft
Y Location: 0. ft

No. of observations: 105

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.001	2.793	0.4807	1.119	4.107	0.251
0.006	2.708	0.5123	1.091	4.356	0.233
0.011	2.646	0.5473	1.068	4.619	0.215
0.016	2.583	0.584	1.047	4.899	0.201
0.021	2.528	0.6223	1.024	5.196	0.187
0.026	2.475	0.664	1.001	5.509	0.18
0.0318	2.424	0.7073	0.973	5.841	0.171
0.038	2.357	0.754	0.948	6.192	0.157
0.0445	2.304	0.8023	0.92	6.566	0.148
0.0515	2.249	0.854	0.897	6.961	0.138
0.0588	2.154	0.909	0.874	7.379	0.134
0.0667	2.115	0.9673	0.844	7.822	0.129
0.075	2.046	1.029	0.821	8.292	0.125
0.0838	1.979	1.094	0.793	8.791	0.12
0.0932	1.908	1.164	0.766	9.317	0.111
0.103	1.831	1.237	0.738	9.876	0.111
0.1135	1.767	1.316	0.713	10.47	0.106
0.1245	1.695	1.399	0.685	11.09	0.106
0.1362	1.61	1.487	0.657	11.76	0.106
0.1487	1.55	1.581	0.63	12.46	0.101

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.1618	1.488	1.679	0.604	13.21	0.101
0.1758	1.49	1.784	0.577	14.	0.101
0.1907	1.458	1.894	0.549	14.83	0.097
0.2063	1.421	2.011	0.521	15.72	0.097
0.223	1.393	2.136	0.496	16.66	0.097
0.2407	1.368	2.267	0.468	17.65	0.097
0.2593	1.34	2.407	0.445	18.65	0.092
0.2792	1.312	2.556	0.418	19.65	0.097
0.3002	1.289	2.712	0.392	20.65	0.092
0.3223	1.259	2.879	0.374	21.65	0.097
0.3458	1.236	3.056	0.346	22.65	0.097
0.3707	1.213	3.242	0.328	23.65	0.092
0.3957	1.19	3.441	0.304	24.65	0.092
0.4223	1.165	3.651	0.288	25.65	0.092
0.4507	1.142	3.872	0.265	26.65	0.092

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	4.091	ft/day
y0	1.32	ft

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
K	9.479	0.6309	ft/day
y0	2.176	0.05221	ft

Parameter Correlations

	K	y0
K	1.00	0.61
y0	0.61	1.00

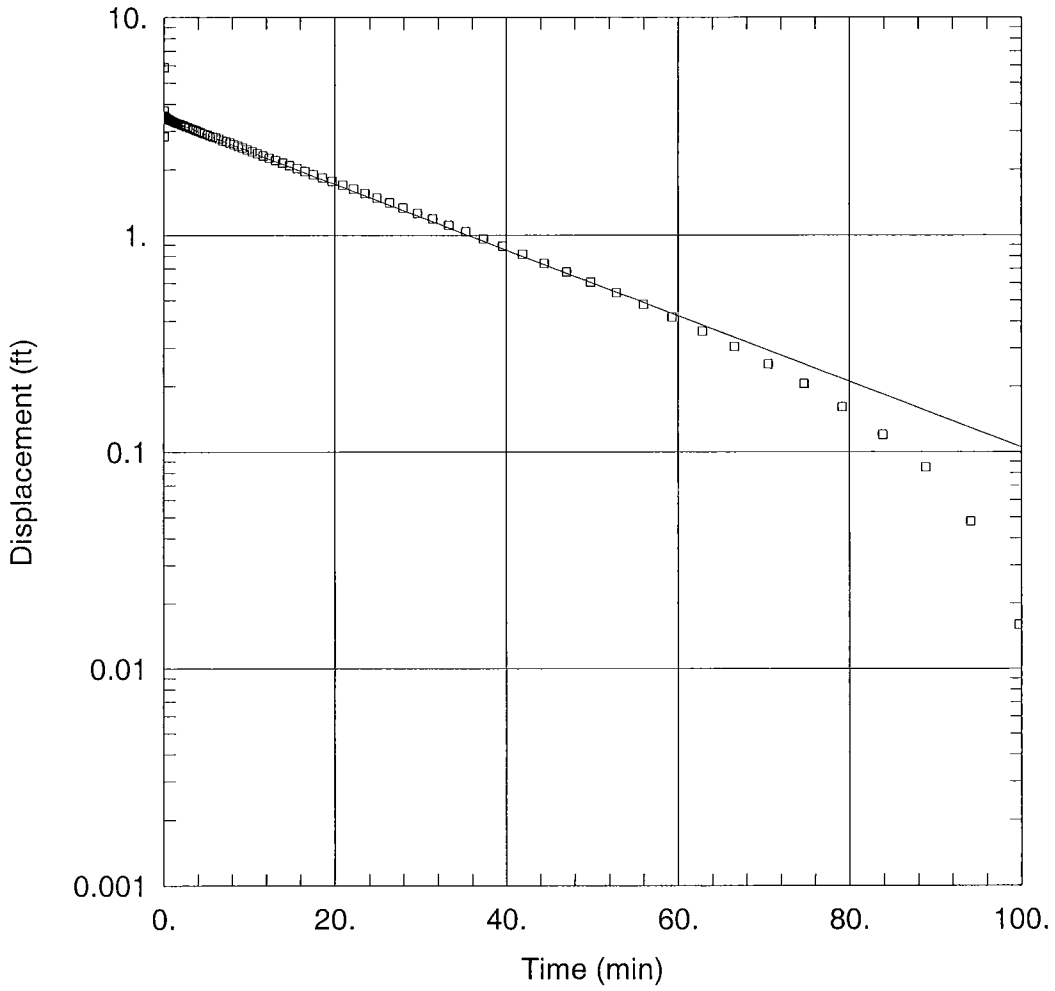
Residual Statistics

for weighted residuals

Sum of Squares ... 5.186 ft^2
Variance..... 0.05035 ft^2
Std. Deviation..... 0.2244 ft
Mean ..... 0.07162 ft

No. of Residuals . . . 105.
No. of Estimates . . . 2

MW-6



BAILY FARM

Data Set: P:\1500\1541-0~1.-BA\100WAS~1\120HYD~1\SLUGTE~1\MW-6IN1.AQT
Date: 02/09/04 Time: 09:26:02

PROJECT INFORMATION

Company: Evans Mill Env.
Client: Corrine Development
Project: 1541-00-120
Test Location: Pocopson Township, Chester Co.
Test Well: MW-6
Test Date: 1/12/04

AQUIFER DATA

Saturated Thickness: 30.97 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 5.889 ft Water Column Height: 30.97 ft
Casing Radius: 0.1667 ft Wellbore Radius: 0.3542 ft
Screen Length: 23. ft

SOLUTION

Aquifer Model: Unconfined K = 0.1267 ft/day
Solution Method: Hvorslev y0 = 3.446 ft

Data Set: P:\1500\1541-0~1.-BA\100WAS~1\120HYD~1\SLUGTE~1\MW-6IN1.AQT
Title: Baily Farm
Date: 02/09/04
Time: 09:26:07

PROJECT INFORMATION

Company: Evans Mill Env.
Client: Corrine Development
Project: 1541-00-120
Location: Pocopson Township, Chester Co.
Test Date: 1/12/04
Test Well: MW-6

AQUIFER DATA

Saturated Thickness: 30.97 ft
Anisotropy Ratio (Kz/Kr): 1.

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: MW-6

X Location: 0. ft
Y Location: 0. ft

No. of observations: 110

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.0075	5.889	1.381	3.298	13.1	2.209
0.0185	3.724	1.475	3.285	13.89	2.151
0.0302	2.849	1.573	3.274	14.73	2.092
0.0427	3.425	1.678	3.263	15.61	2.032
0.0558	3.555	1.788	3.248	16.55	1.969
0.0698	3.529	1.905	3.235	17.54	1.902
0.0847	3.529	2.03	3.22	18.6	1.837
0.1003	3.52	2.161	3.209	19.71	1.772
0.117	3.514	2.301	3.192	20.89	1.698
0.1347	3.507	2.45	3.172	22.14	1.629
0.1533	3.497	2.606	3.155	23.47	1.555
0.1732	3.492	2.773	3.14	24.87	1.482
0.1942	3.486	2.95	3.118	26.36	1.41
0.2163	3.484	3.136	3.096	27.94	1.334
0.2398	3.471	3.335	3.079	29.61	1.261
0.2647	3.468	3.545	3.06	31.37	1.187
0.2897	3.46	3.766	3.034	33.25	1.109
0.3163	3.455	4.001	3.008	35.23	1.038
0.3447	3.449	4.25	2.982	37.33	0.962
0.3747	3.438	4.513	2.958	39.56	0.888

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.4063	3.434	4.793	2.928	41.92	0.817
0.4413	3.432	5.09	2.898	44.42	0.741
0.4778	3.423	5.403	2.867	47.06	0.676
0.5163	3.421	5.735	2.835	49.87	0.607
0.558	3.406	6.086	2.802	52.83	0.542
0.6013	3.404	6.46	2.765	55.98	0.479
0.648	3.395	6.855	2.726	59.31	0.418
0.6963	3.389	7.273	2.69	62.84	0.36
0.748	3.382	7.716	2.653	66.58	0.306
0.803	3.376	8.186	2.61	70.54	0.254
0.8613	3.365	8.685	2.564	74.73	0.206
0.923	3.358	9.211	2.521	79.17	0.161
0.988	3.352	9.77	2.475	83.88	0.12
1.058	3.337	10.36	2.425	88.87	0.085
1.131	3.328	10.99	2.373	94.15	0.048
1.21	3.317	11.65	2.32	99.74	0.016
1.293	3.309	12.35	2.267		

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.1267	ft/day
y0	3.446	ft

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
K	0.1309	0.004859	ft/day
y0	3.537	0.03359	ft

Parameter Correlations

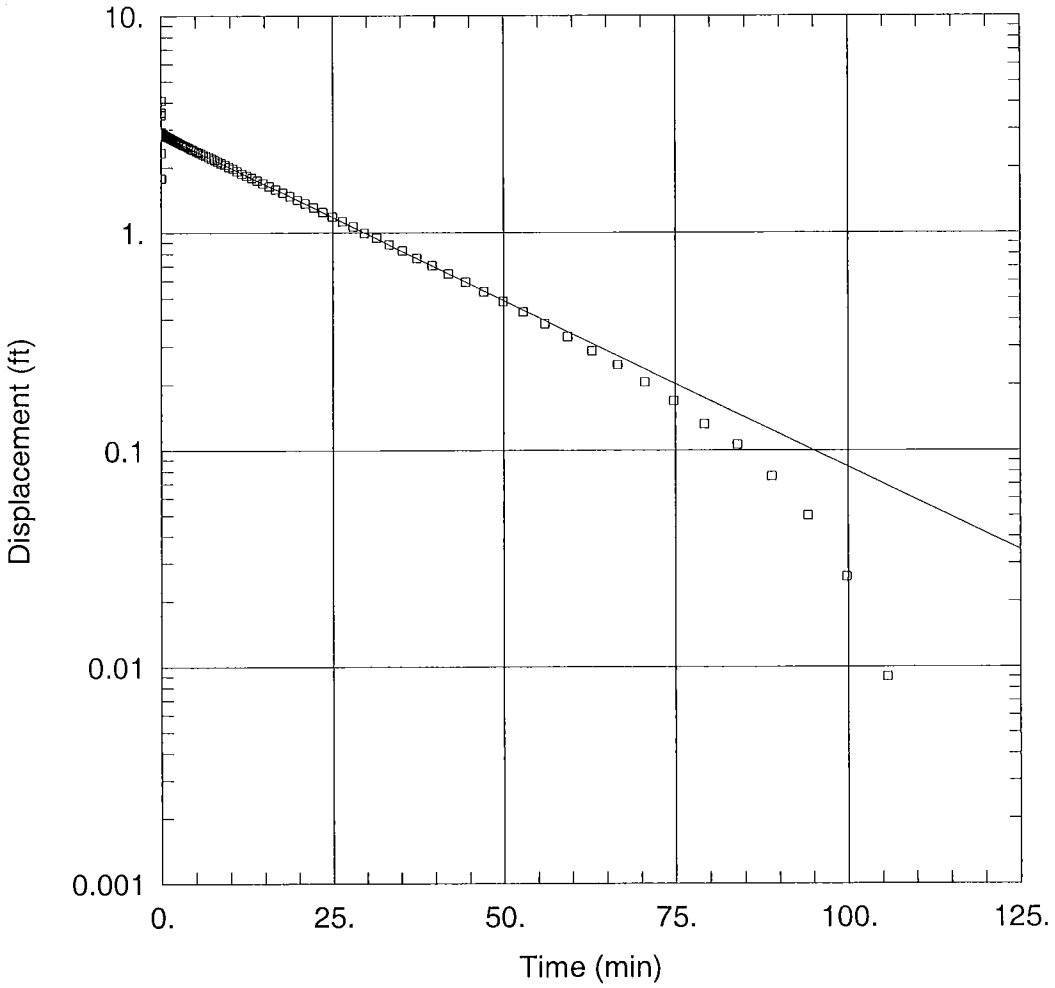
	K	y0
K	1.00	0.50
y0	0.50	1.00

Residual Statistics

for weighted residuals

Sum of Squares ... 5.789 ft^2
Variance..... 0.05461 ft^2

Std. Deviation..... 0.2337 ft
Mean ..... -0.0008739 ft
No. of Residuals ... 108.
No. of Estimates ... 2



BAILY FARM

Data Set: P:\1500\1541-0~1.-BA\100WAS~1\120HYD~1\SLUGTE~1\MW-6IN2.AQT
Date: 02/09/04 Time: 09:27:30

PROJECT INFORMATION

Company: Evans Mill Env.
Client: Corrine Development
Project: 1541-00-120
Test Location: Pocopson Township, Chester Co.
Test Well: MW-6
Test Date: 1/13/04

AQUIFER DATA

Saturated Thickness: 31.85 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 4.078 ft Water Column Height: 31.85 ft
Casing Radius: 0.1667 ft Wellbore Radius: 0.3542 ft
Screen Length: 23. ft

SOLUTION

Aquifer Model: Unconfined K = 0.1279 ft/day
Solution Method: Hvorslev y0 = 2.839 ft

Data Set: P:\1500\1541-0~1.-BA\100WAS~1\120HYD~1\SLUGTE~1\MW-6IN2.AQT
Title: Baily Farm
Date: 02/09/04
Time: 09:27:34

PROJECT INFORMATION

Company: Evans Mill Env.
Client: Corrine Development
Project: 1541-00-120
Location: Pocopson Township, Chester Co.
Test Date: 1/13/04
Test Well: MW-6

AQUIFER DATA

Saturated Thickness: 31.85 ft
Anisotropy Ratio (Kz/Kr): 1.

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: MW-6

X Location: 0. ft
Y Location: 0. ft

No. of observations: 119

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.0005	4.078	1.05	2.773	11.71	1.873
0.0075	3.604	1.12	2.769	12.42	1.832
0.0148	1.782	1.193	2.76	13.16	1.786
0.0227	3.506	1.272	2.75	13.95	1.739
0.031	2.336	1.355	2.739	14.79	1.689
0.0398	3.512	1.443	2.724	15.67	1.637
0.049	2.861	1.537	2.722	16.61	1.581
0.059	2.792	1.635	2.711	17.61	1.529
0.0695	2.939	1.74	2.702	18.66	1.472
0.0805	2.944	1.85	2.689	19.77	1.416
0.0922	2.922	1.967	2.678	20.96	1.36
0.1047	2.907	2.092	2.661	22.21	1.301
0.1178	2.894	2.223	2.65	23.53	1.243
0.1318	2.894	2.363	2.626	24.94	1.184
0.1467	2.892	2.512	2.618	26.43	1.126
0.1623	2.886	2.668	2.605	28.	1.065
0.179	2.888	2.835	2.587	29.67	0.996
0.1967	2.881	3.012	2.57	31.44	0.946
0.2153	2.875	3.198	2.555	33.31	0.881
0.2352	2.875	3.397	2.537	35.29	0.825

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.2562	2.87	3.607	2.514	37.4	0.762
0.2783	2.866	3.828	2.498	39.62	0.706
0.3018	2.862	4.063	2.475	41.98	0.647
0.3267	2.855	4.312	2.442	44.48	0.593
0.3517	2.851	4.575	2.427	47.13	0.535
0.3783	2.844	4.855	2.403	49.93	0.483
0.4067	2.842	5.152	2.378	52.9	0.433
0.4367	2.84	5.465	2.354	56.04	0.381
0.4683	2.831	5.797	2.328	59.37	0.333
0.5033	2.83	6.148	2.295	62.9	0.286
0.5398	2.823	6.522	2.265	66.64	0.247
0.5783	2.825	6.917	2.236	70.6	0.206
0.62	2.818	7.335	2.202	74.79	0.169
0.6633	2.81	7.778	2.165	79.24	0.132
0.71	2.804	8.248	2.128	83.94	0.106
0.7583	2.799	8.747	2.091	88.93	0.076
0.81	2.793	9.273	2.055	94.21	0.05
0.865	2.782	9.832	2.009	99.8	0.026
0.9233	2.784	10.42	1.973	105.7	0.009
0.985	2.778	11.05	1.922		

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.1279	ft/day
y0	2.839	ft

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
K	0.1361	0.003701	ft/day
y0	2.933	0.02017	ft

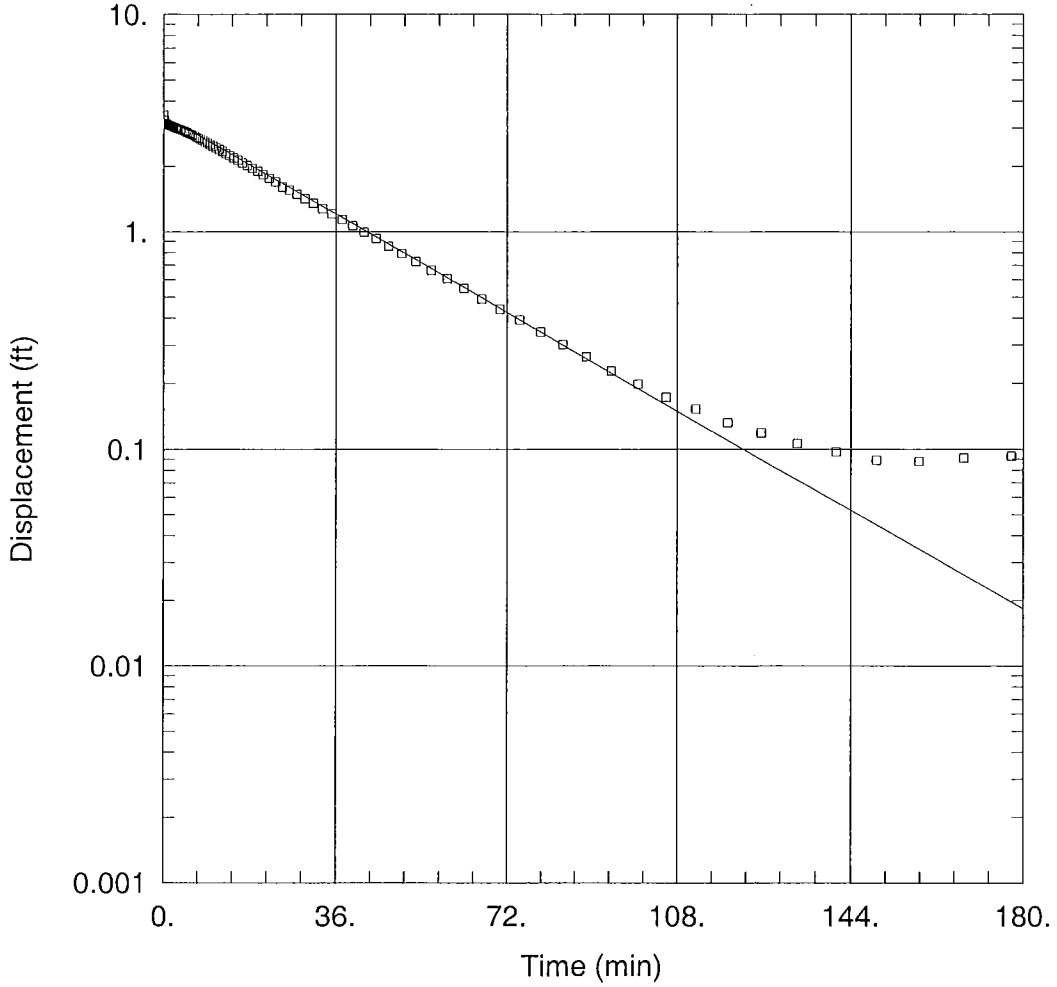
Parameter Correlations

	K	y0
K	1.00	0.49
y0	0.49	1.00

Residual Statistics

for weighted residuals

Sum of Squares ... 2.246 ft^2
Variance ..... 0.02042 ft^2
Std. Deviation..... 0.1429 ft
Mean ..... 0.0005983 ft
No. of Residuals ... 112.
No. of Estimates ... 2



BAILY FARM

Data Set: P:\1500\1541-0~1.-BA\100WAS~1\120HYD~1\SLUGTE~1\MW-6OUT1.AQT
Date: 02/09/04 Time: 09:29:13

PROJECT INFORMATION

Company: Evans Mill Env.
Client: Corrine Development
Project: 1541-00-120
Test Location: Pocopson Township, Chester Co.
Test Well: MW-6
Test Date: 1/12/04

AQUIFER DATA

Saturated Thickness: 30.99 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 3.452 ft Water Column Height: 30.99 ft
Casing Radius: 0.1667 ft Wellbore Radius: 0.3542 ft
Screen Length: 23. ft

SOLUTION

Aquifer Model: Unconfined K = 0.1055 ft/day
Solution Method: Hvorslev y0 = 3.441 ft

Data Set: P:\1500\1541-0~1.-BA\100WAS~1\120HYD~1\SLUGTE~1\MW-6OUT1.AQT
Title: Baily Farm
Date: 02/09/04
Time: 09:29:21

PROJECT INFORMATION

Company: Evans Mill Env.
Client: Corrine Development
Project: 1541-00-120
Location: Pocopson Township, Chester Co.
Test Date: 1/12/04
Test Well: MW-6

AQUIFER DATA

Saturated Thickness: 30.99 ft
Anisotropy Ratio (Kz/Kr): 1.

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: MW-6

X Location: 0. ft
Y Location: 0. ft

No. of observations: 233

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.0007	3.452	19.67	1.905	578.1	0.162
0.0138	3.259	20.85	1.834	588.1	0.162
0.0278	3.272	22.1	1.766	598.1	0.16
0.0427	3.266	23.43	1.699	608.1	0.162
0.0583	3.274	24.83	1.607	618.1	0.162
0.075	3.27	26.32	1.554	628.1	0.162
0.0927	3.274	27.9	1.487	638.1	0.158
0.1113	3.272	29.56	1.42	648.1	0.156
0.1312	3.274	31.33	1.351	658.1	0.153
0.1522	3.276	33.21	1.277	668.1	0.154
0.1743	3.274	35.19	1.208	678.1	0.156
0.1978	3.279	37.29	1.136	688.1	0.156
0.2227	3.276	39.52	1.065	698.1	0.156
0.2477	3.263	41.88	0.996	708.1	0.153
0.2743	3.188	44.37	0.929	718.1	0.154
0.3027	3.181	47.02	0.857	728.1	0.153
0.3327	3.177	49.82	0.792	738.1	0.153
0.3643	3.166	52.79	0.727	748.1	0.151
0.3993	3.161	55.94	0.664	758.1	0.149
0.4358	3.159	59.27	0.606	768.1	0.153

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.4743	3.155	62.8	0.548	778.1	0.149
0.516	3.153	66.54	0.489	788.1	0.153
0.5593	3.151	70.5	0.439	798.1	0.152
0.606	3.146	74.69	0.392	808.1	0.149
0.6543	3.142	79.13	0.346	818.1	0.151
0.706	3.138	83.84	0.303	828.1	0.152
0.761	3.135	88.82	0.266	838.1	0.149
0.8193	3.133	94.1	0.229	848.1	0.149
0.881	3.127	99.7	0.199	858.1	0.147
0.946	3.125	105.6	0.173	868.1	0.147
1.016	3.12	111.9	0.153	878.1	0.143
1.089	3.114	118.5	0.132	888.1	0.143
1.168	3.109	125.6	0.119	898.1	0.143
1.251	3.103	133.	0.106	908.1	0.139
1.339	3.098	140.9	0.097	918.1	0.138
1.433	3.092	149.3	0.089	928.1	0.136
1.531	3.085	158.2	0.088	938.1	0.134
1.636	3.077	167.6	0.091	948.1	0.132
1.746	3.07	177.5	0.093	958.1	0.132
1.863	3.061	188.1	0.095	968.1	0.132
1.988	3.055	198.1	0.099	978.1	0.13
2.119	3.046	208.1	0.102	988.1	0.127
2.259	3.036	218.1	0.108	998.1	0.127
2.408	3.027	228.1	0.106	1008.1	0.123
2.564	3.016	238.1	0.108	1018.1	0.123
2.731	3.007	248.1	0.11	1028.1	0.123
2.908	2.999	258.1	0.11	1038.1	0.123
3.094	2.988	268.1	0.11	1048.1	0.117
3.293	2.979	278.1	0.114	1058.1	0.121
3.503	2.966	288.1	0.117	1068.1	0.119
3.724	2.953	298.1	0.123	1078.1	0.115
3.959	2.938	308.1	0.121	1088.1	0.117
4.208	2.919	318.1	0.126	1098.1	0.11
4.471	2.903	328.1	0.126	1108.1	0.108
4.751	2.886	338.1	0.126	1118.1	0.11
5.048	2.864	348.1	0.126	1128.1	0.11
5.361	2.843	358.1	0.126	1138.1	0.108
5.693	2.819	368.1	0.128	1148.1	0.11
6.044	2.793	378.1	0.13	1158.1	0.108
6.418	2.767	388.1	0.13	1168.1	0.113
6.813	2.732	398.1	0.134	1178.1	0.112
7.231	2.704	408.1	0.132	1188.1	0.112
7.674	2.674	418.1	0.136	1198.1	0.114
8.144	2.637	428.1	0.136	1208.1	0.117
8.643	2.604	438.1	0.14	1218.1	0.114
9.169	2.565	448.1	0.141	1228.1	0.112
9.728	2.526	458.1	0.143	1238.1	0.112
10.32	2.485	468.1	0.145	1248.1	0.113
10.95	2.44	478.1	0.147	1258.1	0.108
11.61	2.397	488.1	0.149	1268.1	0.108
12.31	2.349	498.1	0.152	1278.1	0.112

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
13.06	2.297	508.1	0.152	1288.1	0.113
13.85	2.245	518.1	0.153	1298.1	0.108
14.68	2.195	528.1	0.156	1308.1	0.108
15.57	2.141	538.1	0.158	1318.1	0.108
16.51	2.08	548.1	0.162	1328.1	0.106
17.5	2.022	558.1	0.16	1338.1	0.106
18.55	1.964	568.1	0.162		

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.1055	ft/day
y0	3.441	ft

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
K	0.1003	0.001678	ft/day
y0	3.252	0.0136	ft

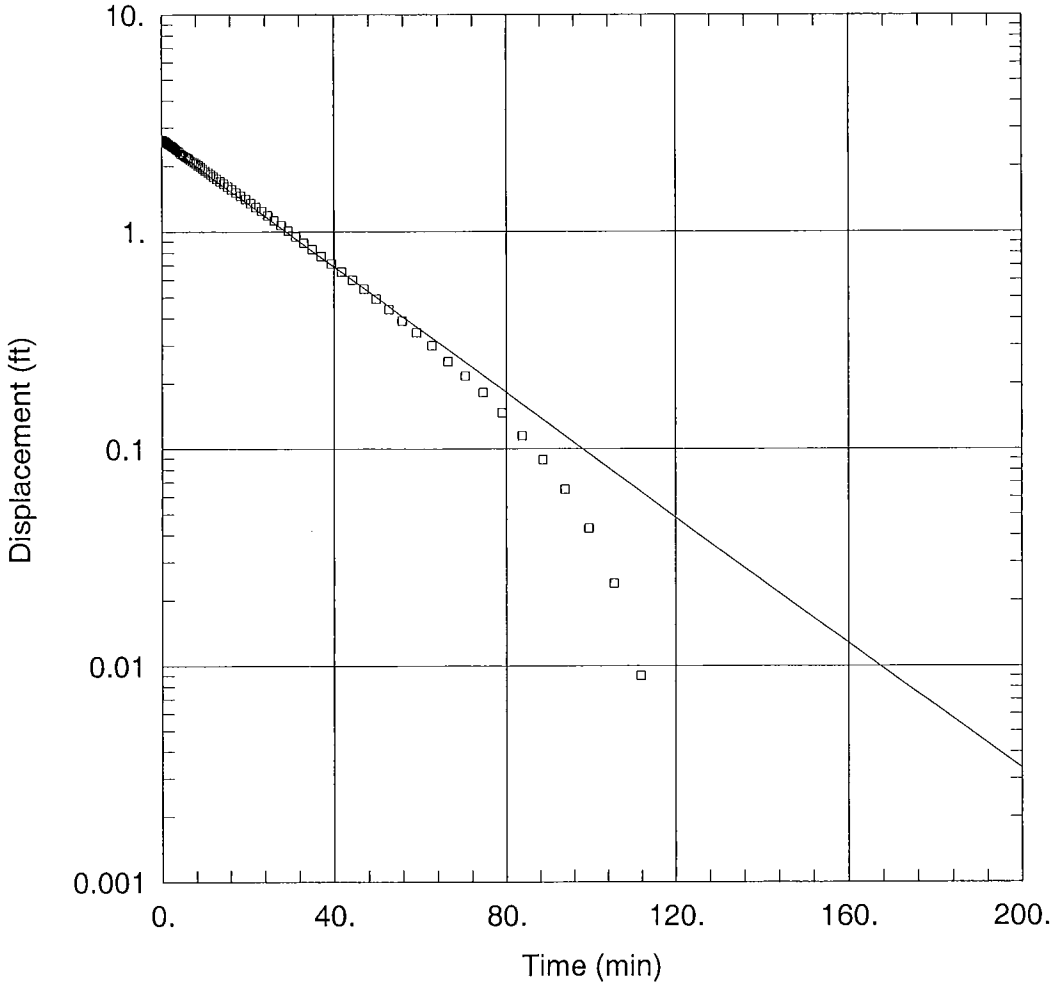
Parameter Correlations

	K	y0
K	1.00	0.48
y0	0.48	1.00

Residual Statistics

for weighted residuals

Sum of Squares ... 2.218 ft^2
Variance..... 0.009604 ft^2
Std. Deviation..... 0.098 ft
Mean ..... 0.06568 ft
No. of Residuals ... 233.
No. of Estimates ... 2



BAILY FARM

Data Set: P:\1500\1541-0~1.-BA\100WAS~1\120HYD~1\SLUGTE~1\MW-6OUT2.AQT
Date: 02/09/04 Time: 09:35:16

PROJECT INFORMATION

Company: Evans Mill Env.
Client: Corrine Development
Project: 1541-00-120
Test Location: Pocopson Township, Chester Co.
Test Well: MW-6
Test Date: 1/13/04

AQUIFER DATA

Saturated Thickness: 31.83 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 2.649 ft
Water Column Height: 31.83 ft
Casing Radius: 0.1667 ft
Wellbore Radius: 0.3542 ft
Screen Length: 23. ft

SOLUTION

Aquifer Model: Unconfined
K = 0.1208 ft/day
Solution Method: Hvorslev
y0 = 2.618 ft

Data Set: P:\1500\1541-0~1.-BA\100WAS~1\120HYD~1\SLUGTE~1\MW-6OUT2.AQT
Title: Baily Farm
Date: 02/09/04
Time: 09:35:21

PROJECT INFORMATION

Company: Evans Mill Env.
Client: Corrine Development
Project: 1541-00-120
Location: Pocopson Township, Chester Co.
Test Date: 1/13/04
Test Well: MW-6

AQUIFER DATA

Saturated Thickness: 31.83 ft
Anisotropy Ratio (Kz/Kr): 1.

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: MW-6

X Location: 0. ft
Y Location: 0. ft

No. of observations: 198

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.0033	2.649	14.58	1.659	617.9	0.05
0.0232	2.647	15.46	1.609	627.9	0.05
0.0442	2.647	16.4	1.561	637.9	0.05
0.0663	2.647	17.39	1.509	647.9	0.052
0.0898	2.647	18.45	1.457	657.9	0.054
0.1147	2.647	19.56	1.407	667.9	0.054
0.1397	2.647	20.74	1.349	677.9	0.056
0.1663	2.647	21.99	1.295	687.9	0.058
0.1947	2.64	23.32	1.241	697.9	0.056
0.2247	2.638	24.72	1.182	707.9	0.058
0.2563	2.636	26.21	1.124	717.9	0.058
0.2913	2.638	27.79	1.067	727.9	0.061
0.3278	2.636	29.46	1.007	737.9	0.059
0.3663	2.633	31.22	0.948	747.9	0.058
0.408	2.627	33.1	0.89	757.9	0.063
0.4513	2.623	35.08	0.829	767.9	0.063
0.498	2.618	37.18	0.771	777.9	0.063
0.5463	2.614	39.41	0.712	787.9	0.061
0.598	2.612	41.77	0.654	797.9	0.063
0.653	2.607	44.27	0.6	807.9	0.063

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.7113	2.601	46.91	0.546	817.9	0.067
0.773	2.599	49.72	0.491	827.9	0.069
0.838	2.605	52.68	0.44	837.9	0.071
0.908	2.59	55.83	0.39	847.9	0.071
0.9813	2.583	59.16	0.344	857.9	0.076
1.06	2.577	62.69	0.299	867.9	0.078
1.143	2.571	66.43	0.253	877.9	0.082
1.231	2.559	70.39	0.217	887.9	0.082
1.325	2.551	74.58	0.182	897.9	0.082
1.423	2.544	79.02	0.147	907.9	0.085
1.528	2.536	83.73	0.115	917.9	0.084
1.638	2.527	88.72	0.089	927.9	0.082
1.755	2.518	94.	0.065	937.9	0.087
1.88	2.503	99.59	0.043	947.9	0.084
2.011	2.501	105.5	0.024	957.9	0.084
2.151	2.488	111.8	0.009	967.9	0.087
2.3	2.475	317.9	0.002	977.9	0.084
2.456	2.462	327.9	0.004	987.9	0.087
2.623	2.449	337.9	0.004	997.9	0.087
2.8	2.436	347.9	0.009	1007.9	0.087
2.986	2.421	357.9	0.009	1017.9	0.089
3.185	2.401	367.9	0.013	1027.9	0.087
3.395	2.38	377.9	0.015	1037.9	0.091
3.616	2.364	387.9	0.019	1047.9	0.089
3.851	2.349	397.9	0.024	1057.9	0.089
4.1	2.33	407.9	0.024	1067.9	0.091
4.363	2.286	417.9	0.026	1077.9	0.091
4.643	2.269	427.9	0.026	1087.9	0.093
4.94	2.254	437.9	0.028	1097.9	0.093
5.253	2.234	447.9	0.03	1107.9	0.095
5.585	2.213	457.9	0.031	1117.9	0.093
5.936	2.191	467.9	0.033	1127.9	0.089
6.31	2.163	477.9	0.033	1137.9	0.087
6.705	2.137	487.9	0.035	1147.9	0.082
7.123	2.109	497.9	0.035	1157.9	0.078
7.566	2.079	507.9	0.037	1167.9	0.071
8.036	2.048	517.9	0.039	1177.9	0.067
8.535	2.016	527.9	0.035	1187.9	0.061
9.061	1.984	537.9	0.041	1197.9	0.054
9.62	1.946	547.9	0.041	1207.9	0.048
10.21	1.91	557.9	0.044	1217.9	0.043
10.84	1.871	567.9	0.043	1227.9	0.039
11.5	1.83	577.9	0.043	1237.9	0.037
12.2	1.791	587.9	0.048	1247.9	0.032
12.95	1.745	597.9	0.045	1257.9	0.03
13.74	1.702	607.9	0.048	1267.9	0.026

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.1208	ft/day
y0	2.618	ft

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
K	0.1214	0.001185	ft/day
y0	2.668	0.007042	ft

Parameter Correlations

	K	y0
K	1.00	0.51
y0	0.51	1.00

Residual Statistics

for weighted residuals

Sum of Squares ... 0.407 ft^2
Variance ..... 0.002087 ft^2
Std. Deviation ..... 0.04568 ft
Mean ..... 0.02579 ft
No. of Residuals ... 197.
No. of Estimates ... 2

APPENDIX C:
GROUNDWATER MOUNDING SIMULATION

RECHARGE RATE	=	.0162 FT/DAY
TRANSMISSIVITY	=	64 SQ.FT/DAY
SPECIFIC YIELD	=	.1
BEGINNING TIME	=	3650 DAYS
FINAL TIME	=	3650 DAYS
TIME INCREMENT	=	3650 DAYS
TIME OF CUT OFF	=	3650 DAYS
BEGINNING DISTANCE	=	0 FT
FINAL DISTANCE	=	1750 FT
DISTANCE INCREMENT	=	125 FT
DEPTH	=	43 FT
WIDTH	=	226 FT
LENGTH	=	750 FT
ANGLE	=	0 DEGREES
STREAM DISTANCE	=	1750 FEET
MOUND PROFILE		YES
STREAM DISCHARGE		NO

TIME (DAYS)	DISTANCE (FT)	HEIGHT (FT)	
3650.000	0.000	17.185	CENTER 17.2' < 25.5'
3650.000	125.000	16.747	
3650.000	125.000	16.877	
3650.000	250.000	15.478	
3650.000	250.000	15.739	PT 1
3650.000	375.000	12.999	13' < 24.8'
3650.000	375.000	13.395	
3650.000	500.000	10.330	
3650.000	500.000	10.867	
3650.000	625.000	8.478	
3650.000	625.000	9.164	
3650.000	750.000	7.030	
3650.000	750.000	7.875	
3650.000	875.000	5.824	
3650.000	875.000	6.840	
3650.000	1000.000	4.777	
3650.000	1000.000	5.980	
3650.000	1125.000	3.842	
3650.000	1125.000	5.249	
3650.000	1250.000	2.989	
3650.000	1250.000	4.620	
3650.000	1375.000	2.194	
3650.000	1375.000	4.074	
3650.000	1500.000	1.441	
3650.000	1500.000	3.597	
3650.000	1625.000	0.714	
3650.000	1625.000	3.178	
3650.000	1750.000	0.000	
3650.000	1750.000	2.808	

APPENDIX D:
BACKGROUND WATER QUALITY ANALYSES

BAILY FARM PROJECT

DRIP DISPOSAL AREA TOTAL NITROGEN CALCULATION
Pocopson Twp., Chester Co., PA

TOTAL NITROGEN = NO_2 + NO_3 + TKN
Note: TKN includes ammonia-nitrogen

		MW-1	MW-2	MW-4	MW-5	MW-6
NO_3	(mg/l)	16.66	20.23	11.4	10.1	14.5
*NO_2	(mg/l)	<0.2	<0.2	<0.2	<0.2	<0.2
*TKN	(mg/l)	≤1	≤1	≤1	≤1	≤1
TOTAL	(mg/l)	17.26	20.83	12.0	10.7	15.1

Average Background Concentration = total MW-1 + total MW-2 + ... total MW-6 / 5

Average Background = 15.18

*One-half (1/2) the value of the laboratory's limit of quantitation was used for NO2 and TKN values in the total nitrogen calculation for each well.

CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

AMENDED

Attention: Scott R. Mundell
Reported To: Evans Mill Environmental, Inc.
101 Fellowship Road
P.O. Box 735
Uwchland PA 19480-000

Date of Report: 02/03/04
Project Number: 0424016
Lab ID: 1626-04-0002692
Date Collected: 01/19/04 08:35
Collected By: CLIENT
Date Received: 01/19/04 10:40

Sample Desc: 1541-00 Baily MW-1

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	0	/100ml	1	1	SM 9222D	01/19	11:20	NCL
Total Coliform Bacteria	0	/100ml	1	1	SM 9222B	01/19	11:20	NCL
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	16.66	mg/l	2	2	EPA 300.0	01/20	16:46	RXS
Nitrogen, Nitrite	<.2	mg/l	.2	2	EPA 300.0	01/20	16:46	RXS
NITROGENS								
Nitrogen, Ammonia	<.1	mg/l	.1	1	SM4500NH3H	01/22	11:54	SJB
Nitrogen, Total Kjeldahl	<1 (J)	mg/l	5	1	EPA 351.2	01/22	08:48	SJB
PHYSICAL								
pH	5.35	su	1	1	SM4500H-B	01/19	12:10	ALD

COMMENTS

01 J = Estimated Value.

02 Amended report changing the value for the TKN to an estimated or "J" value.

Distribution of Reports:

Reviewed and Approved by:

Richard Wolfe
Technical Director

ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
PADEP #06-003 NJDEP #77903 NYDOH #11630 MDDOH #261 VA #0216 FDA #42146

CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

AMENDED

Attention: Scott R. Mundell
Reported To: Evans Mill Environmental, Inc.
101 Fellowship Road
P.O. Box 735
Uwchland PA 19480-000

Date of Report: 02/03/04
Project Number: 0424016
Lab ID: 1626-04-0002691
Date Collected: 01/19/04 07:54
Collected By: CLIENT
Date Received: 01/19/04 10:40

Sample Desc: 1541-00 Baily MW-2

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1.1	mpn/100ml	1.1	1	SM 9221E	01/19	11:00	LJF
Total Coliform Bacteria	<1.1	mpn/100ml	1.1	1	SM 9221B	01/19	11:00	LJF
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	20.23	mg/l	2	2	EPA 300.0	01/20	16:16	RXS
Nitrogen, Nitrite	<.2	mg/l	.2	2	EPA 300.0	01/20	16:16	RXS
NITROGENS								
Nitrogen, Ammonia	<.1	mg/l	.1	1	SM4500NH3H	01/22	11:54	SJB
Nitrogen, Total Kjeldahl	<1 (J)	mg/l	5	1	EPA 351.2	01/22	08:48	SJB
PHYSICAL								
pH	5.73	su	1	1	SM4500H-B	01/19	12:10	ALD

COMMENTS

01 J = Estimated Value.

02 Amended report changing the value for the TKN to an estimated or "J" value.

Distribution of Reports:

Reviewed and Approved by:

Richard Wolfe
Technical Director

ENVIRONMENTAL TESTING LABORATORY 107 ANGELICA STREET, READING, PA 19611
PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
PADEP #06-003 NJDEP #77903 NYDOH #11630 MDDOH #261 VA #0216 FDA #42146

CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

AMENDED

Attention: Scott R. Mundell
Reported To: Evans Mill Environmental, Inc.
101 Fellowship Road
P.O. Box 735
Uwchland PA 19480-000

Date of Report: 02/03/04
Project Number: 0424030
Lab ID: 1626-04-0002734
Date Collected: 01/19/04 11:52
Collected By: CLIENT
Date Received: 01/19/04 14:30

Sample Desc: 1541-00 Baily MW-4

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	0	/100ml	1	1	SM 9222D	01/19	15:00	LJF
Total Coliform Bacteria	12	/100ml	1	1	SM 9222B	01/19	15:00	LJF
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	11.4	mg/l	2	2	EPA 300.0	01/20	21:11	RXS
Nitrogen, Nitrite	<.2	mg/l	.2	2	EPA 300.0	01/20	21:11	RXS
NITROGENS								
Nitrogen, Ammonia	<.1	mg/l	.1	1	SM4500NH3H	01/22	11:54	SJB
Nitrogen, Total Kjeldahl	<1 (J)	mg/l	5	1	EPA 351.2	01/26	12:29	SJB
PHYSICAL								
pH	6.01	su	1	1	SM4500H-B	01/19	14:50	ALD

COMMENTS

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Attention: Scott R. Mundell
Reported To: Evans Mill Environmental, Inc.
101 Fellowship Road
P.O. Box 735
Uwchland PA 19480-000

Date of Report: 02/03/04
Project Number: 0424030
Lab ID: 1626-04-0002732
Date Collected: 01/19/04 09:51
Collected By: CLIENT
Date Received: 01/19/04 14:30

Sample Desc: 1541-00 Baily MW-5

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	0	/100ml	1	1	SM 9222D	01/19	15:00	LJF
Total Coliform Bacteria	20	/100ml	1	1	SM 9222B	01/19	15:00	LJF
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	10.1	mg/l	2	2	EPA 300.0	01/20	20:12	RXS
Nitrogen, Nitrite	<.2	mg/l	.2	2	EPA 300.0	01/20	20:12	RXS
NITROGENS								
Nitrogen, Ammonia	<.1	mg/l	.1	1	SM4500NH3H	01/22	11:54	SJB
Nitrogen, Total Kjeldahl	<1 (J)	mg/l	5	1	EPA 351.2	01/26	12:29	SJB
PHYSICAL								
pH	6.12	su	1	1	SM4500H-B	01/19	14:50	ALD

COMMENTS

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CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

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Attention: Scott R. Mundell
Reported To: Evans Mill Environmental, Inc.
101 Fellowship Road
P.O. Box 735
Uwchland PA 19480-000

Date of Report: 02/03/04
Project Number: 0424030
Lab ID: 1626-04-0002733
Date Collected: 01/19/04 10:53
Collected By: CLIENT
Date Received: 01/19/04 14:30

Sample Desc: 1541-00 Baily MW-6

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	0	/100ml	1	1	SM 9222D	01/19	15:00	LJF
Total Coliform Bacteria	>80	/100ml	1	1	SM 9222B	01/19	15:00	LJF
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	14.5	mg/l	2	2	EPA 300.0	01/20	20:42	RXS
Nitrogen, Nitrite	<.2	mg/l	.2	2	EPA 300.0	01/20	20:42	RXS
NITROGENS								
Nitrogen, Ammonia	<.1	mg/l	.1	1	SM4500NH3H	01/22	11:54	SJB
Nitrogen, Total Kjeldahl	<1 (J)	mg/l	5	1	EPA 351.2	01/26	12:29	SJB
PHYSICAL								
pH	6.31	su	1	1	SM4500H-B	01/19	14:50	ALD

COMMENTS

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02 Amended report changimg the value for the TKN to an estimated or "J" value.

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Reviewed and Approved by:

Richard Wolfe
Technical Director

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PHONE: 610-374-5129 • FAX: 610-374-7234 • www.mjreider.com
PADEP #06-003 NJDEP #77903 NYDOH #11630 MDDOH #261 VA #0216 FDA #42146

M. J. REIDER ASSOCIATES, INC.

LICENSED ANALYTICAL LABORATORIES
USEPA/PADEP 06-003

63641

107 ANGELICA ST.
READING, PA 19611-1999
(610) 374-5129
FAX (610) 374-7234

CHAIN OF CUSTODY

PLEASE PRINT

USE ONLY

SAMPLER: CST
SAMPLING TIME:
EQUIPMENT RENTAL:
SHIPPED OR HAND DELIVERED:
PRESERVATION Y N
TEMP. @ 4° C Y N
CHLORINE RES. Y N
APPROVED BY: KS

CLIENT ACCT. # 1626
PURCHASE ORDER NO.

CLIENT: Evans Mill Environmental
REPORTING ADDRESS: 101 Fellowship Rd Box 735 Uwchland, PA 19480
ATTN: Scott Mundell
PHONE: 610-458-8300

CLIENT: Same
BILLING ADDRESS:
ATTN:
FAX: 610-458-7168

SAMPLER: RHW

SPECIAL INSTRUCTIONS: Fecal Coliform = # and Ratio of 0 col/100mL

OFFICE USE ONLY	SAMPLE IDENTIFICATION	MATRIX	CONTAINER INFO. NO./TYPE/PRESERVATIVE	COLLECTION DATE	COLLECTION TIME	DEP FORM Y/N	ANALYSIS REQUESTED
2691	1541-00 Bailey MW-2	GW	3	1/19/04	7:54		Fecal Strep/Fecal Coliform Counts,
			1 Soil Preserve				pH, TKN
2692	1541-00 Bailey MW-1	GW		1/19/04	8:39		Ammonia-N
							Nitrate-N MS
							Nitrite N

1.5% PER MONTH SURCHARGE WILL BE MADE FOR ACCOUNTS NOT PAID IN 30 DAYS

RELINQUISHED BY	RECEIVED BY	DATE	TIME	RECEIVED FOR LABORATORY BY
		1/19/04	9:24	DATE: 1-19-04 TIME: 10:40

M. J. REIDER ASSOCIATES, INC.

LICENSED ANALYTICAL LABORATORIES
USEPA/PADEP 06-003

63422

107 ANGELICA ST.
READING, PA 19611-1999
(610) 374-5129
FAX (610) 374-7234

CHAIN OF CUSTODY

PLEASE PRINT

USE ONLY

SAMPLER: CST
SAMPLING TIME:
EQUIPMENT RENTAL:
SHIPPED OR HAND DELIVERED:
PRESERVATION Y N
TEMP. @ 4° C Y N
CHLORINE RES. Y N
APPROVED BY: KB

CLIENT ACCT. # 1626 PURCHASE ORDER NO.

CLIENT: Evans Mill Environmental
REPORTING ADDRESS: 101 Fellowship Rd
Uwchland, PA 19480
ATTN: Scott Mundell
PHONE: 610-458-8300 FAX: 610-458-7168 SAMPLER: RHW

CLIENT:
BILLING ADDRESS:
ATTN:

SPECIAL INSTRUCTIONS: Fecal coliform + total PQL of 001/100 mL

OFFICE USE ONLY	SAMPLE IDENTIFICATION	MATRIX	CONTAINER INFO. NO./TYPE/PRESERVATIVE	COLLECTION DATE	COLLECTION TIME	DEP FORM Y/N	ANALYSIS REQUESTED
2732	1541-00 Baily MW-5	GW	3 (1 50ml - Preserve)	1/19/04	9:51		Fecal & total coliform pH, TKN
2733	1541-00 Baily MW-6	GW			10:53		NO3 Ammonia-N
2734	1541-00 Baily MW-4	GW			11:52		NO3 Nitrate-N Nitrite-N

1.5% PER MONTH SURCHARGE WILL BE MADE FOR ACCOUNTS NOT PAID IN 30 DAYS

RELINQUISHED BY	RECEIVED BY	DATE	TIME
		1/19/04	14:25

RECEIVED FOR LABORATORY BY:
DATE: 1-19-04 TIME: 14:30

GROUND WATER MONITORING

CLIENT Baily farm W.O. NO. 1541-00

CONTACT _____ PHONE _____ PREPARED BY RHW DATE 1/19/04

WELL NO.	CASING SIZE	WELL DEPTH	DEPTH TO WATER *	DEPTH OF H_2O COLUMN	PUMPING RATE GAL./MIN.	MINUTES PUMPED	WATER APPEARANCE	PH	TEMP.	SP. COND.	FILTERED IN FIELD	COMMENTS
2	4"	42'	*17.32	24.68	2 gal/min	25	clear 7:38	5.2	10.4°	274	N	Start 7:28 Stop 7:53
			AP 16.97	1wl = 16.0 3wl = 48.0			clear 7:45	5.1	10.6°	272		Sample 7:54 Sample depth 37'
							clear 7:51	5.4	8.6°C	273		
1	4"	55'	*41.19	13.81	2 gal/min	14	clear	5.3	9.0°C	203	N	Start 8:24 Stop 8:38
			AP 41.89	1wl = 8.97 3wl = 26.9			clear	5.4	10.2°C	199		Sample 8:39 Sample depth 50'
							clear	5.4	10.6°C	206		
5	4"	50.5	* 34.61	15.9	2 gal/min	17	clear	6.1	5.9°C	179.1	N	Start 9:33 Stop 9:50
			AP 35.33	1wl = 10.3 3wl = 31			clear	6.1	5.8°C	184.1		Sample 9:51 Sample depth 45.5
							clear	6.0	5.6°C	178.4		

* BP (BEFORE PURGE)
AP (AFTER PURGE)

GAL. WATER IN WELL = .7854 x DIA^2 x 7.48 x DEPTH OF WATER COLUMN

FORM NO. F33 REV. 7/87

GROUND WATER MONITORING

CLIENT Bailey Farms W.O. NO. 154-00

CONTACT _____ PHONE _____ PREPARED BY KHW DATE 11/19/04

WELL NO.	CASING SIZE	WELL DEPTH	DEPTH TO WATER *	DEPTH OF H_2O COLUMN	PUMPING RATE GAL./MIN.	MINUTES PUMPED	WATER APPEARANCE	PH	TEMP.	SP. COND.	FILTERED IN FIELD	COMMENTS
6	4"	60.3	* 31.72	28.6	3/4 gal/min	53	clear 10:04	6.3	10.2°C	184	N	Start 10:01 Stop 10:54
			AP 33.87	1 vol = 18.6 3 vol = 56			clear 10:31	6.3	10.7°C	171.1		Sample #5 Sample Depth 55.3
							clear 10:50	6.2	10.7	170.8		
4	4"	80.9	*45.57	35.33	1½ gal/min	46	Lt Brown	7.4	9.1°C	160.3	N	Start 11:05 Stop 11:51
			AP 47.06	1 vol = 23 3 vol = 69			clear	6.2	10.6°C	136.5		Sample 11:52 Sample Depth 75.9
							clear	6.3	10.9°C	144.5		

* BP (BEFORE PURGE)
AP (AFTER PURGE)

GAL. WATER IN WELL = .7854 x DIA.^{2} x 7.48 x DEPTH OF WATER COLUMN

FORM NO. F33 REV. 7/87

APPENDIX C

APPENDIX C:
Site Plans by Apex Engineering

POCOPSON TOWNSHIP ACT 537 PLAN SPECIAL STUDY FOR LENAPE-POCOPSON STUDY AREA, MAY 2009)

SPECIAL STUDY

ACT 537 SEWAGE FACILITIES PLAN
LENAPE-POCOPSON STUDY AREA

Prepared for
Pocopson Township
740 Denton Hollow Road
Pocopson, PA 19366

May 2009

Castle Valley Consultants, Inc.
Engineers • Planners • Design Professionals
10 South Clinton Street, Suite 302, Doylestown, Pa. 18902
Phone (610) 469-8414 Fax (610) 469-8415
www.casval.com

TABLE OF CONTENTS

TABLE OF CONTENTS

1.1 PLAN SUMMARY

This Act 537 Plan Special Study for Pocopson Township addresses wastewater needs within a designated planning area referred to as the Lenape-Pocopson Study Area. The study area, as depicted on Map 1, is bounded generally by the Brandywine River to the east, Route 926 to the south, Route 52 to the north and Denton Hollow Road to the west.

The study area is dominated by the Sheeder Tract owned by Toll Brothers Inc. (TBI) and slated for a 150 unit residential subdivision. In addition to the proposed development project, there are a small number of other industrial, commercial and residential uses within the study area whose sewage needs are also addressed in the study.

The selected alternative is the construction of a new lagoon treatment/spray irrigation disposal system on the Sheeder Tract. It will rely on a combination of gravity and low-pressure force main collection system to convey wastewater to the treatment facility. All collection, treatment, storage and disposal facilities will be designed in accordance with approved construction documents and will be sold to a public utility or dedicated to the Township for ownership, operation and maintenance responsibilities. The sewer service area is depicted on Map 2.

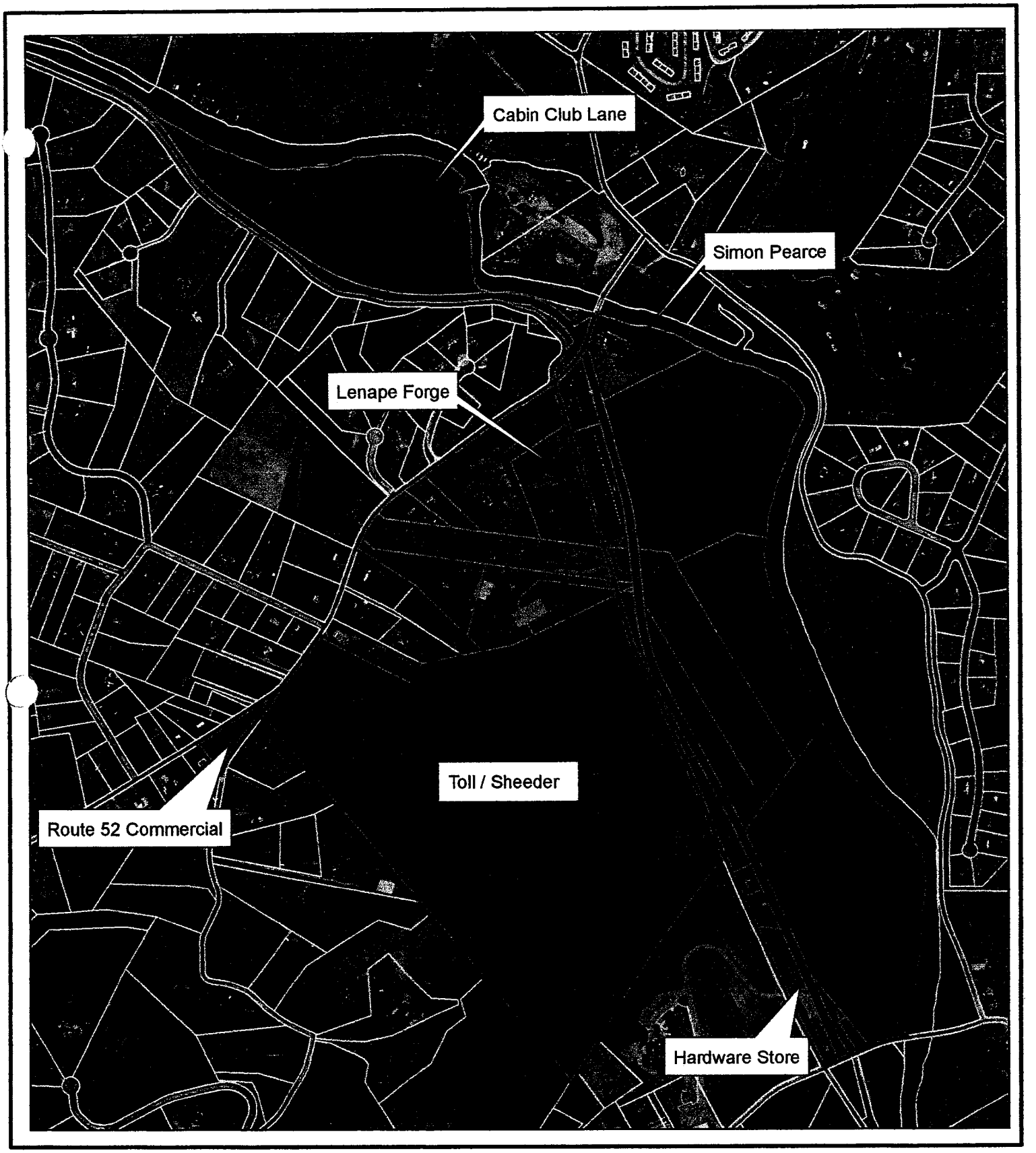
As TBI is the owner and major contributor to the treatment facility, they have agreed to assume a lead role and to work with the Township to address their needs as well as sewage needs of the surrounding area. TBI will also provide the funding for the construction of the onsite collection, treatment and disposal facilities. The Township will be responsible for the off-site collection/conveyance costs unless or until the plant is sold to a public utility. Final ownership however could be ultimately with a public utility.

The cost of the treatment and disposal facilities is estimated a $1.2 million dollars with the off-site collection adding an additional $430,000.

The Township is committed to implement this Plan. Following is the estimated schedule for implementation. After completion of the Act 537 Special Study:

TASK	SCHEDULE
Receive comments on the Special Study from the Chester County Health Department, Planning Commission and Township Planning Commission	30 Days
Advertise and receive public comment	30 Days
Township pass resolution adopting Special Study	At Public Meeting
Submit Plan Update and Conceptual Part II Permit Application to DEP	Immediately after Township Approval
Receive DEP Planning Approval	Time Zero
Receive Part II Permit Application to DEP	210 days after time zero
Complete Construction	450 days after time zero

Initiate Further Planning to Investigate Wastewater Needs of the Pocopson Elementary School	Ongoing



Castle Valley Consultants, Inc.
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Phone (610) 469-8414 Fax (610) 469-8415
Web www.cacval.com

CVC Project #	Date:	By:
59-1.1		CAK

Source:
Chester County GIS

Special Study
Act 537 Sewage Facilities Plan

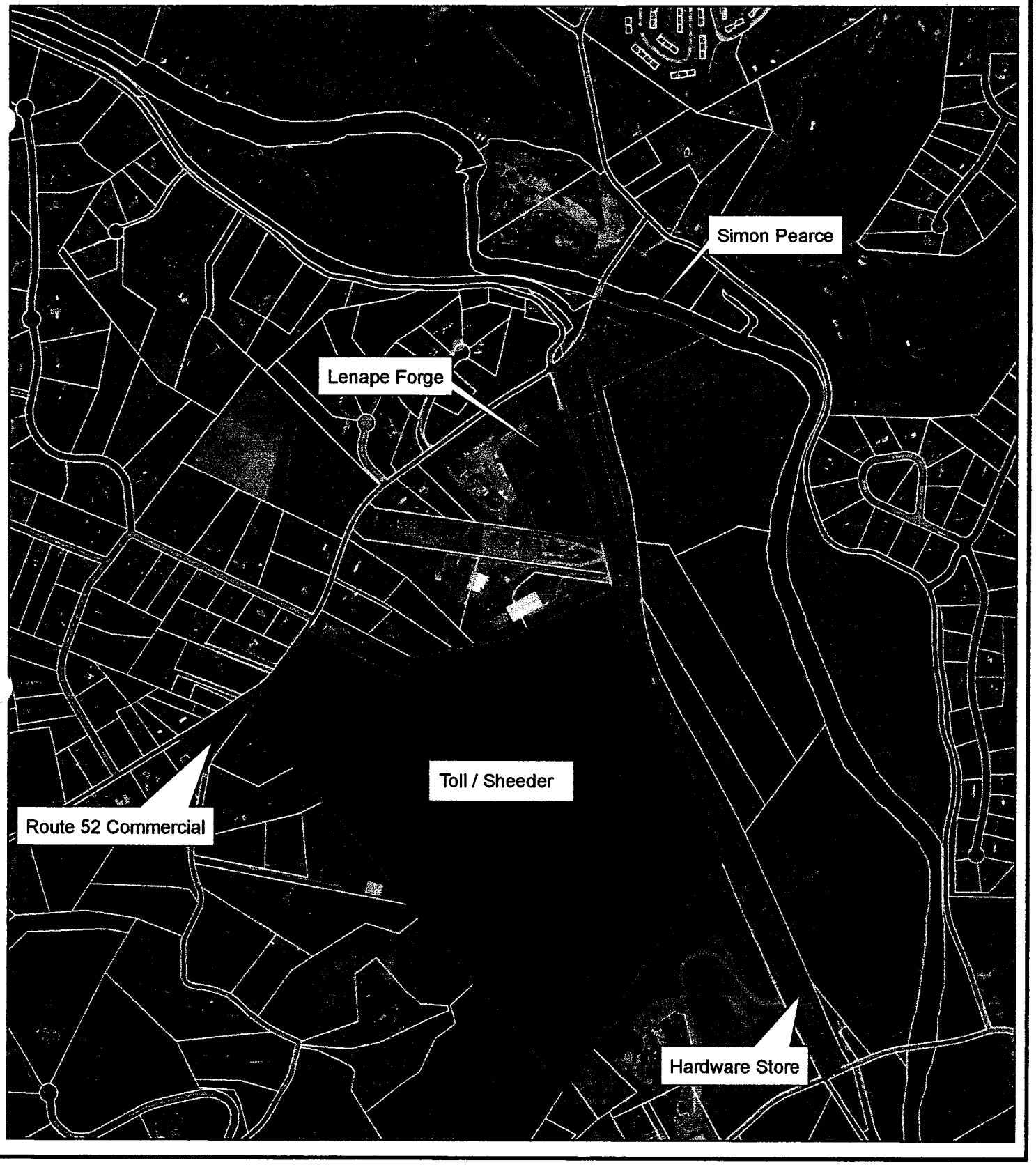
Lenape - Pocopson Study Area

Pocopson Township, Chester County, Pa.

MAP 1
STUDY AREA

0 400 800
Feet

NORTH



Castle Valley Consultants, Inc.
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Phone (610) 469-8414 Fax (610) 469-8415
Web www.cvcnet.com

CVC Project #	Date:	By:
59-1.1		CAK

Source:
Chester County GIS

Special Study
Act 537 Sewage Facilities Plan
Lenape - Pocopson Study Area

Pocopson Township, Chester County, Pa.

MAP 2
SEWER SERVICE AREA

0 400 800
Feet

NORTH

2.1 PREVIOUS SEWAGE FACILITIES PLANNING

2.1.1 Identification and Analysis of Existing Facilities Planning

Pocopson Township does not have its own Sewage Facilities Plan and relies on Chester County's 1970 Plan, which does not encourage any development pattern other than single-family development on large lots.

Pocopson Township participated in the preparation of the *Regional Sewage Study* prepared by the West Chester Regional Planning Commission completed in March 2001. The focus of this report was to present the sewer inventory in the region and establish a list of planning strategies for furtherance of regional cooperation and efficient use of resources.

It is not the intent of this study to plan for the sewage needs of the entire Township. The Plan of Study for this project was approved by the Pennsylvania Department of Environmental Resources (DEP) as a "Special Study" focused on meeting the immediate sewage disposal needs within the villages of Lenape and Pocopson.

2.2 PHYSICAL AND DEMOGRAPHIC ANALYSIS

2.2.1 Sewage Facilities Planning Study Area

The sewage facilities planning study area for this "Special Study" is shown on Map 1. As discussed above, this area is centered on the villages of Lenape and Pocopson and was selected due to anticipated development activity in the area. The area includes properties in the West Creek Road/Pocopson Road corridor from the intersection of Cabin Club Lane to the intersection of Street Road (PA Route 926).

2.2.2 Drainage Basins, Streams, Lakes and Flood Plain

The study area borders the Brandywine Creek, which is the primary drainage and base level for groundwater discharge in the area.

2.2.3 Soils

SCS Soil Name	Typical Limitations	Spray Irrigation Disposal	Subsurface Disposal
Glenleg	None	Generally Suitable	Generally Suitable
Manor	None	Generally Suitable	Generally Suitable
Conagree	None	Generally Suitable	Generally Suitable
Glenville	Seasonal High Water Table	Conditionally Suitable	Conditionally Suitable

Chewacla	Seasonal High Water Table, Alluvial	Conditionally Suitable	Generally Unsuitable
Wehadkee	High Water Table, Hydric Soil	Generally Unsuitable	Generally Unsuitable

2.2.4 Geologic Features

The entire site is mapped as being underlain by the Wissahickon albite-chlorite Schist. This is described as a phyllite composed chiefly of quartz, feldspar, muscovite and chlorite. This rock type has some primary permeability in the weathered zone and low secondary permeability in the unweathered zone. As reported in the hydrogeologic study for this project, during installation of monitoring wells, it was observed that the weathered zone extended to depths of up to 155 feet.

2.2.5 Topographic Features

The topography of the study area includes relatively flat lowland floodplain areas located on the eastern side of Pocopson Road. This is contrasted by the rolling upland topography found on the western side of Pocopson Road.

2.2.6 Potable Water Supplies

The Cabin Club Lane cottages are served by a small community water system. The remainder of the study area is served by individual on-site wells.

As part of the development of the Sheeder Tract, TBI will be extending public water service to the area. The water provider will be Aqua Pennsylvania.

2.2.7 Wetlands

Within the study area, the most significant wetland areas are found on the eastern side of Pocopson Road. There also exists a small wetland area around an endwall on the west side of Pocopson Road. A small wetland crossing is required for the off-site portion of the wastewater collection system. The appropriate clearances have been obtained from the state and federal regulatory agencies and the GP-5 Permit has been obtained.

2.2.8 Demographic Conditions

With the exception of the development of the Sheeder tract, demographic conditions within the study area are anticipated to remain stagnant as there are few opportunities for additional development due to existing land use and environmental constraints related to wetlands and floodplain.

2.3 EXISTING SEWAGE TREATMENT FACILITIES IN THE PLANNING AREA

2.3.1 Existing Public/Community Wastewater Systems

No public sewage systems exist within the planning area. A small community subsurface system serves 17 cottages on Cabin Club Lane. The Chester County Health Department has no reported malfunctions for this system.

The Unionville Chadds Ford School District elementary school located adjacent to the study area is served by a 4,100 GPD aerobic treatment unit with sand filtration followed by drip irrigation disposal.

2.3.2 Existing Individual On-lot Systems

The remaining properties within the study area rely on individual on-lot systems for their sewage disposal needs. There are no failed systems in the study area according to the inventory of failed on-lot systems as contained in the Regional Sewage Study prepared by the West Chester Regional Planning Commission. However, Simon Pierce, the restaurant and retail facility located on the Brandywine River and adjacent to PA Route 52 has been pumping and hauling their wastewater due to the inability to construct an on-lot system.

The Township expects to eliminate many of the on-lot systems in the planning area when wastewater facilities become available. These include the properties along Pocopson Road, Simon Pierce, and the small retail center at the intersection of PA Route 52 and Denton Hollow Road.

2.4 IDENTIFICATION OF FUTURE DEVELOPMENT AND GROWTH AREAS

2.4.1 Existing Developments and Plotted Subdivisions

With the exception of the Sheeder Tract, the planning area consists of currently developed properties. The development of the Sheeder Tract by TBI will be served by the wastewater facility as outlined in this plan.

Existing development is a mix of residential, commercial, and industrial development.

2.4.2 Existing Land Use

Existing land use in the study area includes agricultural, residential, commercial and industrial uses.

2.4.3 Future Growth Areas and Population Projections

As discussed above, with the exception of the development of the Sheeder tract, demographic conditions within the study area are anticipated to remain stagnant as there are few opportunities for additional development due to existing land use and environmental constraints related to wetlands and floodplain.

2.4.4 Sewage Planning Needs for the Planning Area

Within the study area, the need for sewage planning relates to both existing and proposed development. Currently, no public facilities exist in the area; properties area served by a combination of community subsurface, individual subsurface systems and holding tanks. In response to a development proposal on a large tract within the study area, the Township has chosen to seek a sewage planning solution that comprehensively addresses the wastewater needs in the area.

Table 2-1 below show the anticipated sewage flows from the properties within the study area.

TABLE 2-1

ANTICIPATED SEWAGE FLOWS

USE	EDUs	FLOW/EDU	FLOW (GPD)
Sheeder Tract (TBI)	41 Single Family Dwelling Lots	262.5	10,762.5
	67 Village Dwelling Lots	262.5	17,587.5
	42 Carriage Dwelling Units	225	11,025
	TOTAL		39,375
Simon Pearce	12	262.5	3,150
Lenape Forge	2	262.5	525
Hardware Store	2	262.5	525
Pocopson Road Dwellings	6	262.5	1,575
Route 52 Commercial Complex	6	262.5	1,575
TOTAL	178		45,150

3.1 IDENTIFICATION OF WASTEWATER TREATMENT AND DISPOSAL ALTERNATIVES

3.1.1 Regional Wastewater Treatment

Since the primary land use in the Township and surrounding areas is large lot residential development, there has been no need for a regional treatment plant, nor is there a need for such a facility in the future.

It is the goal of the Township to encourage sustainable development patterns where sewage disposal needs are met on the properties generating the sewage. As such, this study area is consistent with the primary method of sewage treatment and disposal as identified in the Township Sewer Ordinance as contained in Appendix E.

3.1.2 Extension and Repair of Existing Facilities

There are no existing municipal treatment, collection, or conveyance systems in the study area, not any close enough to serve the projected needs.

3.1.3 Need for New Facilities

When a new facility is proposed it is customary to determine if there are other sewage disposal needs near the project area that could be served by the new treatment facility – as is the case within this planning area.

The construction of a new community sewage system will involve collection/conveyance, treatment and disposal components. Within each component there are a number of options available as possible alternatives.

3.1.3.1 Collection/Conveyance Alternatives

A combination of gravity sewers and low-pressure sewers will be utilized to convey sewage to the wastewater treatment facility from the study area.

3.1.3.2 Treatment System Alternatives

Level of Treatment

The level of wastewater treatment required, that is, the effluent discharge parameters, are established by the DEP and set forth in the permit for a given facility. Treatment levels for the parameters are based on the type of disposal proposed. Generally, the required treatment levers for stream discharge and spray irrigation are based on "secondary treatment levels". This level of treatment would provide an effluent having both biochemical oxygen demand (BOD) and total suspended solids (TSS) concentration of 30 mg/L or less. Additional treatment steps following secondary biological treatment are referred to as "tertiary treatment". Processes such as filtration and denitrification are considered tertiary treatment.

A summary of anticipated treatment levels for the study area is presented in Table 3-1. Only treatment levels for spray irrigation have been listed as land application via spray irrigation is the preferred method of sewage disposal as it most closely accomplishes Township land use and environmental policies.

TABLE 3-1

ANTICIPATED EFFLUENT QUALITY LEVEL FOR SPRAY IRRIGATION DISPOSAL

Parameter	**Spray Irrigation Disposal**
BOD5	25 mg/l
TSS	30 mg/l
Ammonia – N	20
Nitrate – N	Included above
Phosphorus	N/A
pH	6 to 9
Fecal Coliform	200 Col./100 ml

Methods of Treatment

A number of biological treatment methods are currently in use to produce a "secondary" quality of effluent. Some of the more common methods include:

- Activated Sludge Process
    - Extended Aeration System
    - Sequencing Batch Reactor (SBR) System
- Wastewater Stabilization Lagoons
    - Facultative Lagoons
    - Aerated Lagoons
    - Aerobic Lagoons
    - Anaerobic Lagoons

The approved Plan of Study for this project limited the treatment methods under consideration to two types – Sequencing Batch Reactor and Aerated Lagoons. These systems are described below.

Sequencing Batch Reactor

A single tank is operated sequentially as an aeration reactor and settling basin. Wastewater is added to the basin and bacteria assimilate the organic content of the wastewater during the

"react" phase. Aeration is then discontinued and the wastewater/sludge mixture is allowed to settle. The treated effluent is then "decanted" from the tank and the process is repeated. The SBR is a self-contained treatment system incorporating equalization, aeration, and clarification within the confines of a single basin or tank. Best performance is achieved when two or more reactors are operated in an ordered sequence. The advantage of the SBR system is a reduced area requirement for the treatment plant.

Aerated Lagoons

In aerated lagoons, oxygen is supplied typically through mechanical or diffused air aeration rather than through photosynthesis and surface re-aeration. Aerated ponds are generally 6 to 20 feet deep. Their main advantage over a facultative pond is the reduced land area requirement.

Aerated ponds can also be classified by the amount of mixing provided. Complete mix aerated ponds provide enough energy to keep all solids in suspension. This system approaches an activated sludge process in terms of operation.

3.1.3.3 Disposal Alternatives

Disposal alternatives can be classified in three categories – stream discharge, subsurface, or land application. Again, in accordance with Township land use and environmental policies, the approved Plan of Study has limited the disposal alternatives under consideration to spray irrigation. Spray irrigation falls under the land application category.

Spray irrigation is a slow rate land treatment process in which treated wastewater is applied on to the land surface where further treatment occurs through natural, physical, chemical and biological processes within the plant-soil-water matrix. Other methods of land treatment exist; however, spray irrigation is the most widely used land disposal method in Chester County.

The benefits of spray irrigation include:

- Groundwater recharge;
- Nutrient removal;
- Crop production; and
- Water conservation.

It should be noted that winter storage of effluent is required for spray irrigation systems. Application of effluent ceases during periods of time when the ground is saturated or frozen to prevent surface runoff. Currently, DEP standards for spray irrigation require storage capacity for a minimum of 72 "no spray" days during a calendar year. During the "no spray" period, effluent is stored in a lagoon until weather conditions permit spraying again.

Soils Evaluation

A range of soil depths and drainage classifications can be acceptable for spray irrigation as described in Section 2.2.3. The greater the soil limitations, the lesser amount of water can be applied. Ideal soils have greater than 40 inches to rock or drainage mottles. Such soils may currently be approved by the Southeastern Region of DEP for a summer application rate of 2.5

inches of effluent per week. The lowest limit of soil suitability established for spray irrigation is a depth of not less than 10 inches to drainage mottles or excessive rock. Such soils might be approved for summer application rates or 0.5 inches per week. These soils typically would be approved for seasonal use only, with little or no spraying in wet weather or cold temperatures.

The soils evaluation for this site as prepared by DelVal Soils and Environmental Consultants finds that the site and soil conditions as displayed on Map 3-1 meet the current DEP guidelines for spray irrigation disposal. Based upon the soil morphologic characteristics of texture, structure and consistency, the soil can assimilate the standard PA DEP application rates for deep, well drained soil.

A detailed soils evaluation of the area selected for the spray irrigation area is included in the Appendix.

Hydrogeologic Evaluation

A detailed hydrogeologic evaluation of the Sheeder Tract was conducted in December 2004 by INTEX Environmental Group, Inc. This investigation was prepared to determine the feasibility for spray irrigation on three proposed spray fields.

Spray fields #1 and #3 are essentially one field separated by a small strip of steep slopes. These combined fields will receive an average of 35,615 gallons per day (gpd) of treated effluent. Spray field #2 will receive an average of 16,122 gpd of treated effluent for disposal.

The hydrogeologic investigation performed at spray fields #1, #2 and #3 indicate that potential groundwater mounding beneath the spray fields after 10 years of continuous operation will be within acceptable parameters. At spray fields #1 and #3, clearance between the top of the groundwater mound and the ground surface will be at least 15 feet after 10 years. At spray field #2, the clearance between the top of the groundwater mound and the ground surface will be at least 7 feet after 10 years.

This investigation was performed during a year when precipitation and groundwater recharge were above normal, and regional groundwater levels were at or near historic highs. It is likely that water table elevation beneath the spray fields are also at or near historic highs.

Background groundwater nitrate concentrations in two of the monitoring wells exceeded 10 mg/l. This is attributable to the agricultural use of the property. Crop management during operation of the spray fields will maintain the average nitrate concentrations in the percolate below 10 mg/l.

The complete hydrogeologic report along with a water balance analysis and crop management plan are included in the Appendix.

3.1.4 Individual Sewage Disposal Systems

Individual sewage systems were not considered as an acceptable alternative due to the density of the proposed development on the Sheeder Tract (TBI). Additionally, the property on which Simon Pierce is located is unable to address the sewage disposal needs with an on lot system due to poor site conditions.

3.1.5 Small Flow Treatment Facilities

Small flow treatment facilities were not considered an acceptable alternative for the same reasons as sited above.

3.1.6 Community Treatment Plants

Refer to Section 3.1.3.2 above.

3.1.7 Community Land Disposal Alternatives

Refer to Section 3.1.3.3 above.

3.1.8 Retaining Tank Alternatives

A retaining tank alternative was not considered as an acceptable alternative as retaining tanks are not a permanent solution for new subdivisions. The Township may allow temporary use of retaining tanks in the event that housing units are ready for settlement before an approved treatment plan is completed.

3.1.9 Sewage Management Programs

Pocopson Township has been, and will continue to be actively involved in the planning, design, permitting and review of construction for this sewage facility. The Township will be the system permittee, will own the facility and will be responsible for the operation and maintenance of the facility. The Township reserves the right to transfer ownership of this facility to an approved public utility at any time.

3.1.10 Non-Structural Comprehensive Planning Alternatives

The Township has previously enacted land use ordinances and adopted policies which consider management of existing and future sewage disposal needs. Additional non-structural alternatives are not necessary at this time for this study area. Construction of lagoon treatment/spray irrigation community sewage system is an environmentally sound method of meeting the immediate and long-term needs of the study area and is consistent with the environmental and land use planning policies of Pocopson Township.

3.1.11 No Action Alternative

A no-action alternative is not an option as the Sheeder Tract and Simon Pierce are in immediate need of sewage facilities.

3.2 EVALUATION OF ALTERNATIVES

3.2.1 Technically Feasible Alternatives

Two technically feasible treatment/disposal alternatives were developed in Section 3.1.3.2 above. They are:

- SBR/spray irrigation
- Lagoon/spray irrigation

It is important to determine the consistency of these alternatives with the laws and policies of the Commonwealth, the goals and objectives of various comprehensive plans, and the need to protect important environmental resources. This allows potential problems to be resolved before major resources are committed to any one alternative. The consistency review will help in the selection of a sewage facilities alternative which is implementable.

3.2.2 Consistency Evaluation

The technically feasible alternatives must be evaluated for consistency with respect to a number of regulations and comprehensive plans. Following are summaries of these evaluations.

3.2.2.1 COWAMP/208 Water Quality Management Plan

The Comprehensive Regional Water Quality Management Plan (COWAMP) for southeastern Pennsylvania was completed in 1978 with the goal that it would serve as the blueprint for water pollution control until the year 2000. Much of the data in this plan is now over 25 years old and does not reflect current conditions. However, at the time the studies were performed, the following information was obtained.

The study area is in the Brandywine sub basin. The COWAMP Plan cites variable water quality in this sub basin. The COWAMP document recommends protection of headwaters and the consideration of land application as a waste disposal option.

Both technically feasible alternatives identified above utilize land application as the disposal method and are therefore consistent the COWAMP recommendations.

3.2.2.2 Chapter 94 Wasteload Management Report

Since no municipal wastewater treatment plants currently exist in the study area, this consistency evaluation is not applicable.

3.2.2.3 Title II Clean Water Act; Titles II and IV, Water Quality Act of 1987

Consistency requirements under the Water Quality Act of 1987 relate primarily to projects that will be seeking Pennvest Funding. At this point funding through Pennvest will not be pursued by the Township. If financial assistance is sought through Pennvest, as assessment of the requisite consistency will be made.

3.2.2.4 Pocopson Township Comprehensive Plan

The Township Comprehensive Plan recommends protection of ground water and surface water quality. Land application via spray irrigation is the only method of disposal under consideration in this study and is therefore consistent with Township water quantity and quality goals.

3.2.2.5 Water Quality Antidegradation

An objective of the Pennsylvania Clean Streams Law is to prevent further pollution of the waters of the Commonwealth and restore streams which are presently polluted.

The use of spray irrigation for wastewater disposal is consistent with Pennsylvania Code Title 25, Chapters 93, 95 and 102.

3.2.2.6 State Water Plan

Wastewater disposal through spray irrigation as proposed in this plan is consistent with the State Water Plan policies aimed at replenishing groundwater and avoiding stream discharge.

3.2.2.7 Pennsylvania Prime Agricultural Land Policy

Soils within the study area include those with a Class I, II, or III designation. However, the study area does not contain areas designated as "prime", "important", or "unique" by the Natural Resource Conservation Service (NRCS) in its Important Farmlands Map of Chester County (June 1980). Additionally, there is no Township land use policy or regulation to sustain agriculture within the study area.

3.2.2.8 County Stormwater Plan

Chester County currently does not have a Stormwater Management Plan; therefore, there is no conflict for any of the alternatives with respect to this issue.

3.2.2.9 Wetlands

Wetland areas within the study area are found primarily on the east side of Pocopson Road; however, there exists a small wetland area around an endwall on the west side of Pocopson Road. A small wetland crossing is required for the off-site portion of the wastewater collection system. The appropriate clearances have been obtained from the state and federal regulatory agencies and the GP-5 Permit has been obtained.

3.2.2.10 PNDI

A Pennsylvania Natural Diversity Inventory Search was performed for the study area. A bog turtle habitat evaluation was also conducted by TBI for the development of the Sheeder Tract. A copy of the clearance letters from the various regulatory agencies in included in the Appendix.

3.2.2.11 Historic Properties

A clearance letter from the Pennsylvania Historic and Museum Commission is included in the Appendix. This letter confirms that no properties either on or eligible for listing on the National Register of Historic Properties exist within the study area.

3.2.3 Resolution of Inconsistencies

Upon evaluation of the consistency requirements, it was determined that neither the location of improvements nor method of treatment and disposal create inconsistencies with aforementioned requirements.

3.2.4 Alternative Evaluation

An evaluation of the two technically feasible treatment/disposal alternatives, with respect to water quality standards, effluent limitations, and other technical requirements is provided below.

3.2.4.1 Activated Sludge (SBR)/Spray Irrigation Disposal

Spray irrigation is found to be consistent with all of the plans, policies and regulations evaluated. The use of an activated sludge treatment facility in the form of a Sequencing Batch Reactor (SBR) can be constructed on a relatively small footprint and can be easily expanded if necessary as compared to the lagoon treatment alternative. Lagoon construction is still required for the activated sludge option as storage for inclement weather conditions are still required. Operation and maintenance costs associated with the SBR would be higher as compared to the lagoon treatment alternative.

3.2.4.2 Lagoon/Spray Irrigation Disposal

As discussed above, spray irrigation disposal is the best and only option being considered to meet the long-term needs of the study area. Because sufficient land area is available and significant expansion of the facility is neither necessary nor desired, the use of lagoons for treatment is technically feasible. Due to the fewer operational and maintenance demands and associated lower costs, lagoon treatment with spray irrigation disposal is the preferred alternative to meet the long-term sewage needs of the study area.

3.2.5 Cost Estimates

As part of the planning process, Pocopson Township and TBI have been working with local contractors with experience in the construction of lagoon treatment and spray irrigation systems. Preliminary construction cost estimates from these contractors are approximately $1.2 million dollars. The offsite collection system costs are estimated to be $430,255 for installation of a low-pressure force main to serve these areas.

3.2.6 Funding

Funding for the selected alternative will be primarily through TBI. The Township may need to finance portions of the collection system construction needed to serve existing homes and commercial establishments. If the Township needs to procure financing, they will borrow for banks or other private funding sources. Through a negotiated agreement between the Township and TBI, there will be no tapping fees charged for the treatment capacity to the off-site users.

Cost recovery for the collection component would be done through a combination of tapping fees and debt service to be incorporated into the annual user fee for the system.

3.2.7 Phased Implementation

As this is a relatively small facility of approximately 50,000 gpd, the system will be constructed in a single phase.

3.2.8 Administrative and Legal Issues

The Township will coordinate with TBI and other property owners in the study area as required to implement the selected alternative. Since TBI is the lead in providing the land and treatment facilities, an agreement between TBI and the Township has been prepared and is included in the Appendix. Ultimately, the Township will assume ownership of the system and will be responsible for all administrative and legal issues. In the event the facility is transferred to an approved public utility, that entity would assume all administrative and legal responsibilities.

4.1 INSTITUTIONAL EVALUATION

4.1.1 Pocopson Township

Pocopson Township will be the permitee and owner/operator of the selected alternative. Day-to-day operational responsibilities along with billing and reporting functions will be performed by a firm or firms contracted by the Township. The Township will not need to organize any additional municipal departments or authorities to implement the selected alternative.

In the event the facility is transferred to an approved public utility, that entity would assume all operational responsibilities with the system.

5.1 WASTEWATER TREATMENT AND DISPOSAL ALTERNATIVE

Various alternatives have been developed and evaluated in the previous sections with the system described below being selected as the preferred alternative. The layout of the selected alternative is displayed on Map 3.

The selected alternative will address sewage needs of proposed and existing development in the study area. TBI will be responsible for the construction of the treatment facility, pump station and collection system on the Sheeder Tract. Pocopson Township and the properties served will be responsible for the off-site collection system. The use of lagoon treatment and spray irrigation will minimize operation and maintenance costs and provides a method of sewage disposal that is sensitive to the surface and groundwater quality and quantity protection goals of the Township and other regulatory agencies.

5.1.1 Collection

Gravity sewers, pump stations, force mains and grinder pump systems will be constructed to collect the sewage from within the planning area and convey it to the Sheeder Tract for treatment and disposal. The system relies on placement of sewers and force main within existing and proposed road rights-of-way and will require easements through private property in some areas.

5.1.2 Treatment

A two-lagoon system treatment/storage facility is proposed for construction on the Sheeder Tract with a permitted capacity of 45,150 gpd. The plant will be designed and constructed by TBI in conjunction with the home construction on the Sheeder Tract.

5.1.3 Disposal

Spray irrigation of the treated effluent will occur on three spray fields occupying approximately six acres located on the Sheeder Tract.

5.2 CAPITAL FINANCING

The primary method for financing will be through TBI as they will be responsible for construction of the on-site collection, treatment and disposal components of the project. If the Township needs to finance portions of the off-site collection system, they could borrow money from banks or utilize municipal bonds and recover those costs through tapping fees and debt service.

Operating authorities are found managing natural monopolies such as water supply or sewage disposal where the revenue from the sale of the service can be estimated with considerable accuracy. Joint authorities in these fields are usually operating authorities. Transportation authorities operating mass transit systems are also usually operating authorities.

Authority Service Area

The service area of an authority is a discrete area, typically identified in the articles of incorporation, within which it has the exclusive power to set its rates.[11] Lack of clear definition of the service area can give rise to disputes over the rights or obligations for an authority to serve areas beyond the boundaries of the incorporating municipality. Recent amendments to the Act require further coordination of consent by the host municipality when an authority proposes to require property or conduct projects outside of their incorporating municipality or municipalities. Where the articles of incorporation fail to specify a service area, the courts can interpret the service area to be the limits of the incorporating municipality,[12] or they can refer to some other document such as a county comprehensive plan.[13] A municipality may not transfer a portion of an authority's existing service area to another authority. The existing authority is protected by Section 4A(b)(2) of the Act which prohibits the new authority from establishing duplicative or competitive enterprises.[14] However, this section of the Act did not preclude a township from establishing a public water system for a planned residential development which then lacked water service.[15] The service duplication has to be real and not potential, that is the service must be existing already and not just a possibility. Sale of water by one authority to another is governed by contract; the buyer is not within the "service area" of the seller.[16]

Within the defined service area, no matter how poorly defined, the authority cannot discriminate in access to its services between customers located inside and outside the incorporating municipality's boundaries.[17] The best solution to defining the service area of an authority outside the boundaries of its incorporating municipality is through an intergovernmental agreement between the authority and the municipality to be served. The agreement should include an accurate description of the extraterritorial service area, designation of the authority as the exclusive agent to provide service under the outside municipality's comprehensive plan and/or Act 537 plan, right of the authority to use and open public rights of way, allocation of financial responsibility for needed capacity or system upgrades, right of the authority to set rates and charges by board resolution in place of fixing them by contract and the duration of the agreement. In a case where an authority provided sewer service to an outside developer on a contractual basis, the court required the authority to charge only the fees and charges stipulated in the original 1980 contract rather than those set later by board resolution.[18]

Keeping Authorities Competitive

With competition for local electric and gas utilities and long distance telephone service a reality in Pennsylvania, its citizens are accustomed to look for alternative service providers for one-time monopolies, seeking lower rates or improved services. Services provided by authorities are not subject to direct competition, but local elected officials, business leaders and citizens are well aware that inadequate authority service can be replaced. Authorities, therefore, are competing against potential acquirers of their projects. Authorities must improve the effectiveness of their operations, reengineering to employ the latest in technology. Upgrade of data systems in all phases of the operation will provide management more information and allow staff to work more effectively, resulting in greater productivity, improved service to customers and lower rates for all customers. This can only be achieved by a real commitment from the board and authority management for retraining and continuing education of the staff.

Pennsylvania Department of Environmental Protection

Lee Park, Suite 6010
555 North Lane
Conshohocken, PA 19428
November 16, 2001

Southeast Regional Office

610-832-6130
Fax 610-832-6133

Mr. Bruce B. Yelton, Manager
Pocopson Township
P.O. Box 1
Pocopson, PA 19366

Re: Act 537 - Plan of Study
Lenape-Pocopson Special Study
Pocopson Township, Chester County

Dear Mr. Yelton:

We have completed our review of your municipality's proposed plan of study, as prepared by Castle Valley Consultants, Inc., dated September 7, 2001.

The plan of study proposes to focus on the immediate needs of the villages of Lenape and Pocopson.

Approval of this proposed plan of study is hereby granted. The estimated cost of the plan is $110,244.00.

Please note, however, that this does not constitute a final action by the Department until you submit the completed plan to us and we have acted upon it consistent with PA Code Title 25, Chapter 71.

Please note that your municipality's Act 537 Official Plan Update should be formatted as suggested under Appendix H of the "A Guide for Preparing Act 537 Update Revisions" including the necessary items under Appendix I - "Act 537 Plan Content Checklist".

Ican 11-21 / Pocopson
Dep Act 537 Approval

TALL TREES AT THORNBURY
TOLL BROTHERS, INC.
4 STRICKLAND WAY
GLEN MILLS, PA 19342
(610) 399-3049 - Phone
(610) 399-9659 – Fax

Fax

To: Craig
From: Llyod Miller Tom Kessler

Fax 610 469-8415
215. 348.8267
Pages:

Phone:
Date:

Re:
CC:

☐ Urgent ☐ For Review ☐ Please Comment ☒ Please Reply ☐ Recycle

Comments:

PADE letter as requested

Pennsylvania Fish & Boat Commission

established 1866

Division of Environmental Services
Natural Diversity Section
450 Robinson Lane
Bellefonte, PA 16823-9620
(814) 359-5237 Fax: (814) 359-5175

August 16, 2004

IN REPLY REFER TO
SIR# 16302

Andrea M. Teti
31 Boulder Drive, Suite A
Sellersville, PA 18960

RE: Species Impact Review (SIR) – Rare, Candidate, Threatened and Endangered Species
Bog Turtle Survey
Sheeder Tract
Pocopson Township, Chester County, Pennsylvania

Dear Ms. Teti:

The staff of the Natural Diversity Section reviewed your recent correspondence regarding the above-referenced project and its potential to adversely impact the bog turtle (*Clemmys muhlenbergii*), Pennsylvania endangered, federally listed as threatened.

In prior correspondence on this project, we reviewed the results of a bog turtle presence/absence survey conducted in 2002. An approved bog turtle surveyor following the U.S. Fish and Wildlife Service Guidelines conducted a Phase 2 presence/absence survey for bog turtles, during the appropriate seasonal and climatic conditions in 2002. No bog turtles were found during the surveys. We concur with the conclusion our 2002 evaluation; bog turtles do not inhabit on-site wetlands.

Provided that best management practices are employed and strict erosion and sedimentation controls are used, I do not foresee the proposed project resulting in adverse impacts to the bog turtle or any other rare or protected species under Pennsylvania Fish and Boat Commission jurisdiction. Thank you for your cooperation and attention to this matter of threatened and endangered species conservation.

Sincerely,

Christopher A. Urban, Chief
Natural Diversity Section

KLD/mjp

cc: B. Dershem, USFWS
DEP-SC Region

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

KURT CARR

Forward To:
100 North St
Harrisburg PA 17120-0024

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) AUG 24 2004 C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

☐ Express Mail
☐ Return Receipt for Merchandise
☐ C.O.D.

Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label): 7003 1680 0004 8948 9016

PS Form 3811, August 2001

7003 1680 0004 8948 9016

2595-02-M-1540

7003 1680 0004 8948 9016

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Return Reciept Fee (Endorsement Required)	1.75
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$ 4.88

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AUG 20 2004
USPS

Sent To: KURT CARR PHMC
Street, Apt. No.; or PO Box No.: PO BOX 1026
City, State, ZIP+4: HARRISBURG PA 17108-1026

PS Form 3800, June 2002 See Reverse for Instructions

**** U.S. POSTAL SERVICE ****
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416672 55.00
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08-20-04 15:06:56

CUSTOMER RECEIPT

169 POST VAL INP	4.88
TOTAL	4.88
CASH *	4.88
CHANGE	.00

*** THANK YOU ***

Commonwealth of Pennsylvania
Pennsylvania Historical and Museum Commission
Bureau for Historic Preservation
Commonwealth Keystone Building, 2nd Floor
400 North Street
Harrisburg, PA 17120-0093

September 9, 2004

TO EXPEDITE REVIEW USE
BHP REFERENCE NUMBER

Craig A. Kologie, AICP
Castle Valley Consultants, Inc.
1011 Daisy Point Road
Pottstown, PA 19465

Re: File No. ER 2002-1689-029-B
DEP ACT 537 Program: ACT 537 Program, Lenape/Pocopson ACT 537 Plan Update, Pocopson Twp., Chester Co.

Dear Mr. Kologie:

The Bureau for Historic Preservation has reviewed the above named project under the authority of the Environmental Rights amendment, Article 1, Section 27 of the Pennsylvania Constitution and the Pennsylvania History Code, 37 Pa. Cons. Stat. Section 500 et seq. (1988). This review includes comments on the project's potential effect on both historic and archaeological resources.

A HIGH PROBABILITY EXISTS THAT ARCHAEOLOGICAL RESOURCES MAY OCCUR WITHIN THE PROPOSED PERMIT AREA

Based on an evaluation by our staff, there is a high probability that significant archaeological sites are located in this project area and could be adversely affected by project activities. Although there are no recorded archaeological sites within the project boundaries, the soil type, topographic setting, slope direction, and distance to water of the project area are similar to the settings of known archaeological sites in the vicinity. A Phase I archaeological survey of the project area to locate potentially significant archaeological resources is recommended but not required.

If a survey is not conducted and you encounter archaeological resources during construction, you must stop the project, notify the Pennsylvania Historical and Museum Commission's Bureau for Historic Preservation and the Department of Environmental Resources and allow the Bureau for Historic Preservation 60 days to conduct a survey to determine the significance of the archaeological resources. If the Bureau determines that the resources are significant, you must submit a mitigation plan to protect the significant resources on the site. We will review the plan within 30 days.

MORE INFORMATION IS NEEDED

We are unable to proceed with our review until the additional information on the attached sheet is provided.

FOR YOUR INFORMATION

The Pennsylvania Historical and Museum Commission will keep the Determination Notice and the materials you submitted in its files. Please attach this letter to your copy of the Notice and materials then submit the entire package of materials to DEP.

If this project will require any federal permits or will receive federal funding, the federal agency, under the National Historic Preservation Act of 1966, may require the appropriate surveys to be conducted. We suggest that you consider conducting the survey early in the development or planning process to avoid delays in the future. Guidelines and instructions for conducting Phase I surveys are available from our office upon request.

Thank you for notifying us of your proposed activity.

If you need further information regarding archaeological survey please contact Mark Shaffer at (717) 783-9900. If you need further information concerning historic structures please consult Ann Safley at (717) 787-9121.

Sincerely,

Kurt W. Carr, Chief
Division of Archaeology &
Protection

Attachment

CC: DEP, Southeast Region
KWC/lmm

ER#02-1689-029-B

PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION (PA 11/99)
BUREAU FOR HISTORIC PRESERVATION: INFORMATION REQUEST SHEET
(Please supply items checked below for PHMC to proceed with review)

PROJECT INITIATION

( )A. FUNDING/PERMITTING/LICENSING/APPROVAL PROGRAM
- ( ) 1. Contact person for federal/state/local agency, address, phone number.
- ( ) 2. Letter from federal agency initiating consultation, or a letter from federal agency authorizing an alternate agency or a consultant to initiate consultation.
- ( ) 3. Identify the Federal/State Agency and funding program or permit/license.
- ( ) 4. Identification of all Federal agencies involved in project.
- ( ) 5. Designated "lead" Federal Agency in complex or multi-agency project.

( )B. PROJECT DESCRIPTION
- ( ) 1. Narrative description of the project and related actions resulting from the project.
- ( ) 2. Proposed boundary of the project's Area of Potential Effect (APE) (remember to consider visual impacts)
- ( ) 3. Description and Justification of selection of the Area of Potential Effect
- ( ) 4. Plans of existing conditions (as-built or as-found)
- ( ) 5. Preliminary drawings or plans (floor plans, elevations, specifications)
- ( ) 6. Work write-ups
- ( ) 7. Plans and specifications

( ) C. PROJECT LOCATION
- ( ) 1. U.S.G.S. 7.5 min. series quadrangle with the PROJECT LOCATION(S) AND LIMITS CLEARLY MARKED using a colored pen. Please include name of the quadrangle
- ( ) 2. U.S.G.S. 7.5 min. series quadrangle with Area of Potential Effect marked (potential area of direct effect can be delineated inside area of indirect effect)
- ( ) 3. Street map (for properties in densely populated areas)
- ( ) 4. Street map showing location and historic district boundaries (if appropriate)
- ( ) 5. Street address of property
- ( ) 6. Municipality in which project is located (not mailing address location)

(over)

ER# 02-1689-029-

( ) D. PROJECT SIZE (supply as appropriate for project)
( ) 1. Acreage of project area
( ) 2. Miles/feet of project and right-of-way width
( ) 3. Extent and nature of ground disturbing activities (i.e. grading, trenching, foundation excavation)

(X) E. PHOTOGRAPHS (no Polaroids, copies or scanned images)
(X) 1. Exterior of building(s) in project area property on TBI project site.
( ) 2. Interior of building(s) in project area
( ) 3. Interior of building(s) illustrating the proposed work areas/features
( ) 4. Buildings, streetscape, setting of features in Area of Potential Effect (APE)
( ) 5. Views of project site
( ) 6. Other_____

PUBLIC PARTICIPATION

( ) 1. Measures which will be/or have been taken to identify consulting parties.
( ) 2. List of proposed consulting parties.
( ) 3. Measures which will be/or have been taken to notify and involve the public.

RESOURCE IDENTIFICATION, EVALUATION AND PROJECT EFFECT

(X) A. Cultural Resource Identification
( ) 1. Description of methodology used for identification and sources examined.
( ) 2. Plan proposed for identification of historical (including historic districts, buildings, structures, objects) and archaeological resources and proposed methodology to be used.
(X) 3. Pennsylvania Historic Resource form(s) for property on TBI project site all properties 50 years or older and potentially eligible for the National Register identified in the APE.
( ) 4. Historical background/context report/information for historic resources identified.
( ) 5. Pennsylvania Archaeological Site Survey form(s) (P.A.S.S) for archaeological sites identified in surveys of APE.
( ) 6. Phase I, II, III Archaeological Survey Reports
( ) 7. 5 Copies of Final Phase I, II, III Archaeological Survey Report(s) (4 bound and 1 unbound copies)

( ) B. Evaluation of Project Effect on Cultural Resources (Physical, visual, atmospheric, direct and indirect, secondary)

( ) C. Other:_____

_____

Castle Valley Consultants, Inc.
Engineers • Planners • Design Professionals

September 21, 2004

Kurt Carr
PA Historical & Museum Commission
400 North St.
Harrisburg, PA 17120-0024

Subject: File No. ER 2002-1689-029-B
Lenape / Pocopson Sewage Facilities Plan Special Study –
Pocopson Township, Chester County, Pennsylvania

Dear Mr. Carr

In response to your request for more information as contained in your September 9, 2004 correspondence, enclosed please find a completed Pennsylvania Historic Resource Survey Form including Data Sheet and Photo/Site Plan Sheet with the information as checked on the Information Request Sheet.

Additionally, please be advised that Pocopson Township has elected not to undertake a Phase I archaeological survey of the project area. However, if archaeological resources are encountered during construction, the project will be stopped and the Pennsylvania Historical and Museum Commission's Bureau for Historic Preservation will be notified and will be provided 60 days to conduct a survey to determine the significance of the archaeological resources.

We trust the enclosed information will enable your agency to complete your review.

If you have any questions or comments, please contact me at 610-469-8414.

Sincerely,

Craig A. Kologie, AICP
Project Manager

CAK

Enclosures Pennsylvania Historic Resource Survey Form – Photo/Site Plan Sheet and Data Sheet

cc: Karen Eckerd – Pocopson Township

59-1

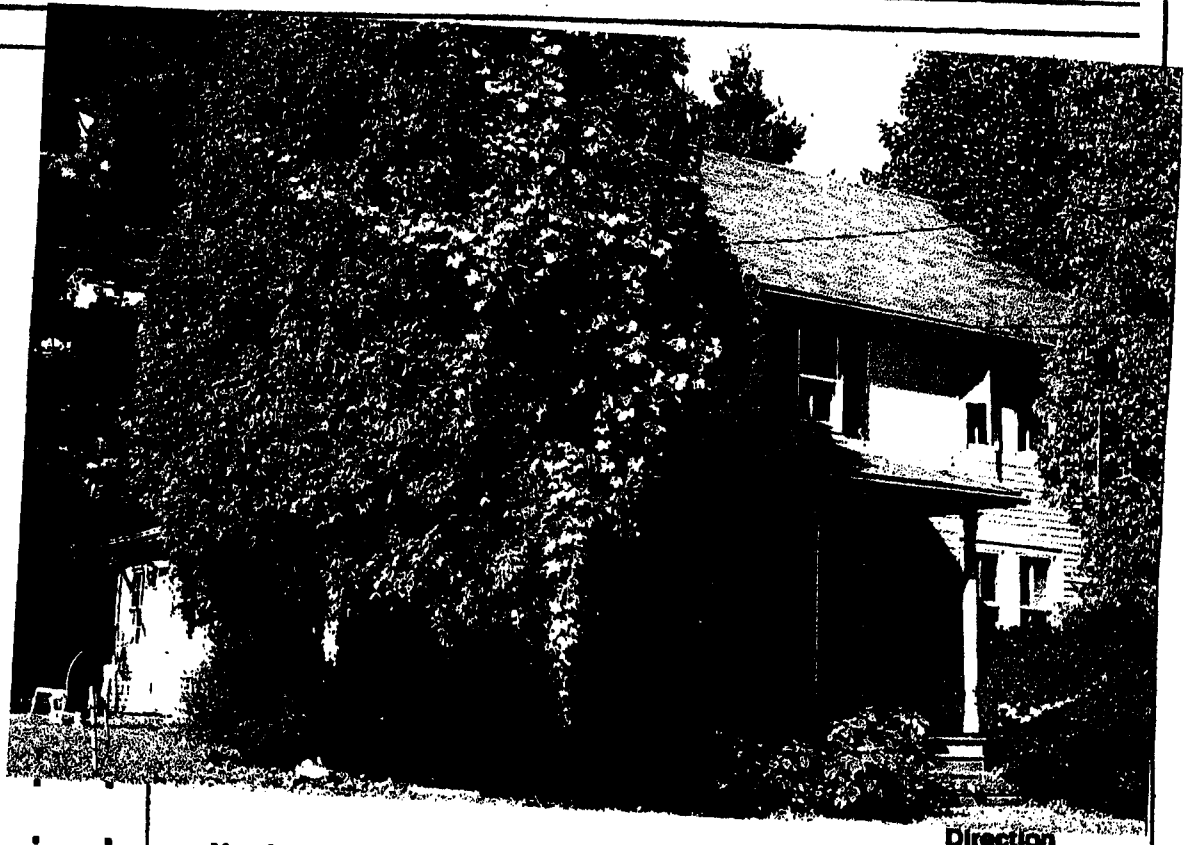
S:\Pocopson\09-21-2004 Response to PHMC.doc

1011 Daisy Point Road, Pottstown, Pennsylvania 19465
Telephone: 610.469.8414 Fax: 610.469.8415 www.casval.com

PENNSYLVANIA HISTORIC RESOURCE SURVEY FORM – PHOTO/SITE PLAN SHEET
Pennsylvania Historical and Museum Commission
Bureau of Historic Preservation
Commonwealth Keystone Building, 2nd Floor
400 North Street, Harrisburg, PA 17120-0093

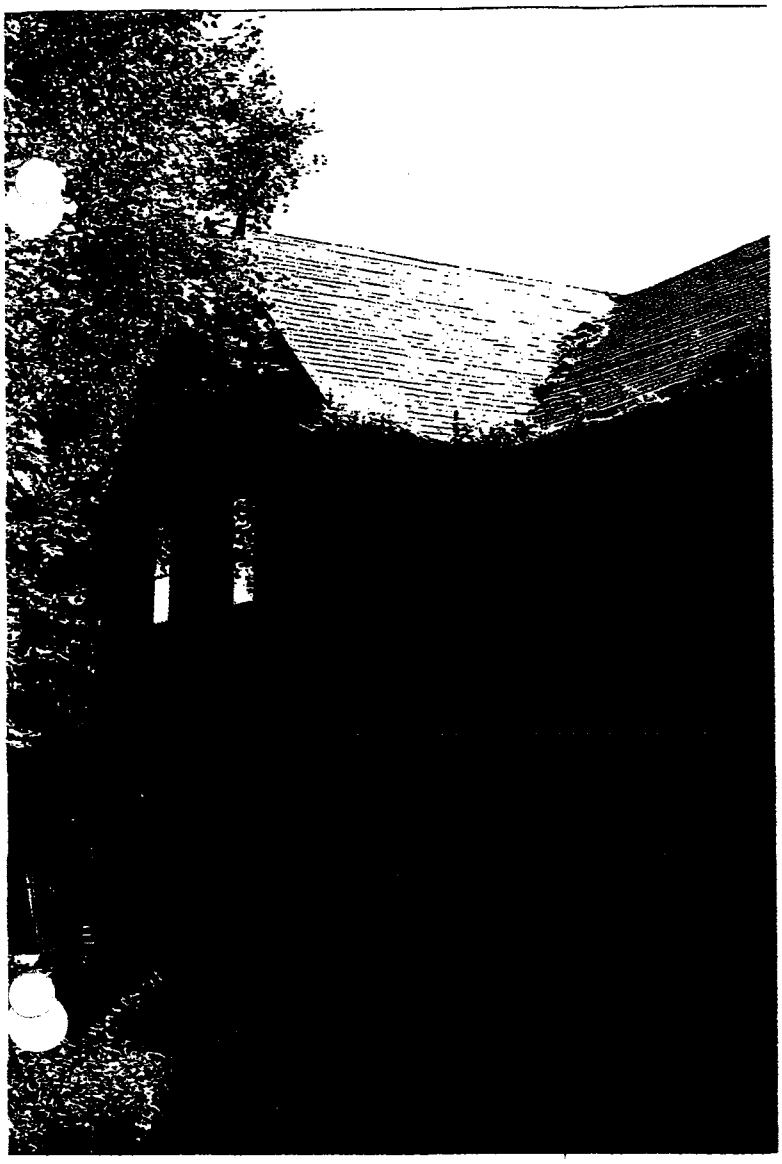
89A

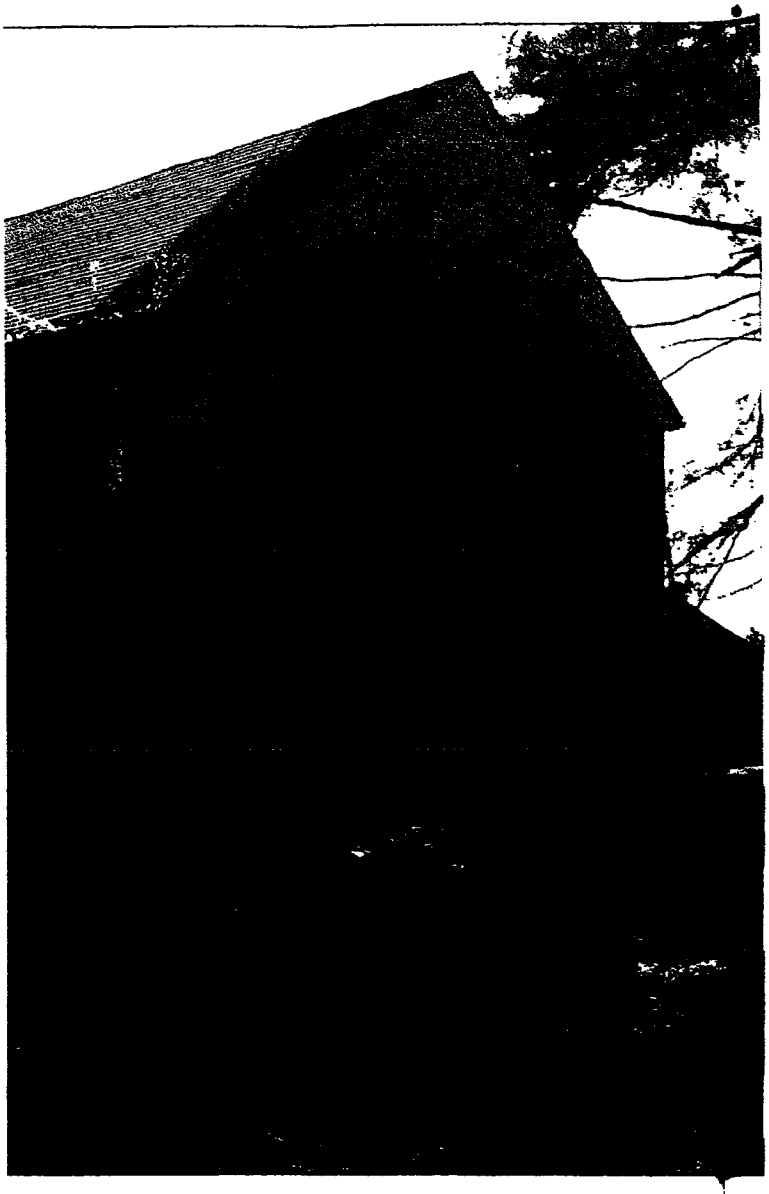
Survey Code/Tax Parcel/Other No.: tax parcel #63-4-144
Municipality: Pocopson Township **County:** Chester
Historic Name/Other Name: Sheeder house **Address:** 921 Pocopson Road, West Chester, PA 19382
SITE PLAN

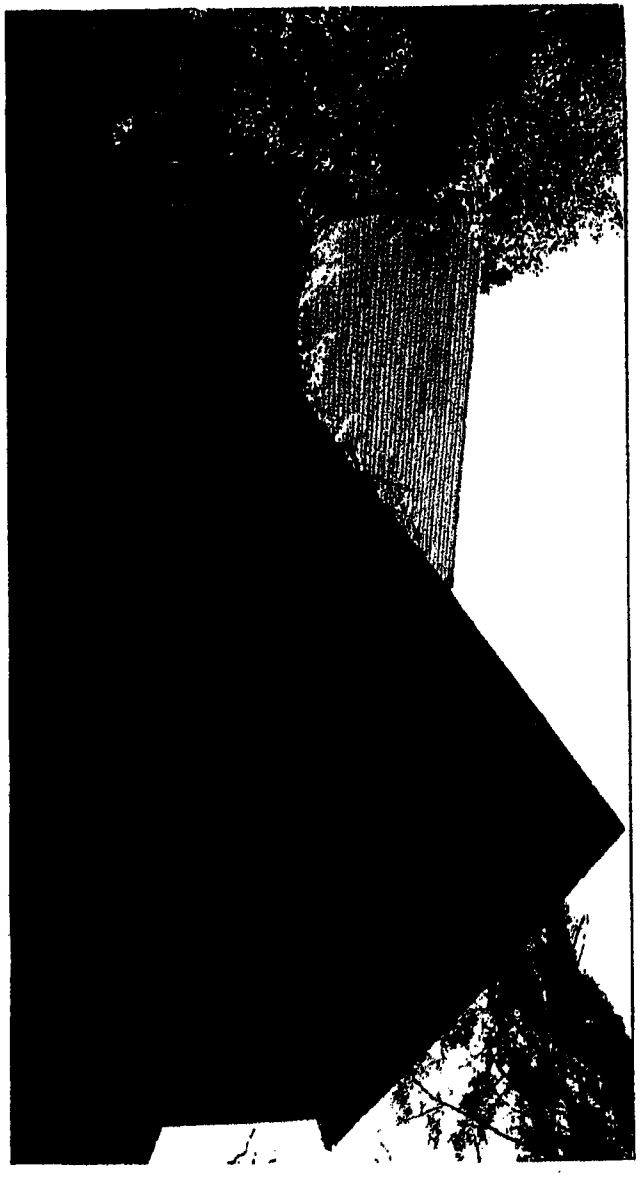


Number	Description of View	Direction of Camera
1	front right corner	west
2	front	west
3	left side	east
4	left rear corner	southeast
5	rear	east
6	right rear corner	north

Photographer Name: Allen G. Heist **Date:** 9/20/04
Negative Location: 1011 Daisy Point Rd., Pottstown, PA







PENNSYLVANIA HISTORIC RESOURCE SURVEY FORM – PHOTO/SITE PLAN SHEET 39A

Pennsylvania Historical and Museum Commission
Bureau of Historic Preservation
Commonwealth Keystone Building, 2nd Floor
400 North Street, Harrisburg, PA 17120-0093

rey Code/Tax Parcel/Other No.: tax parcel #63-4-144 **County:** Chester
nicipality: Pocopson Township **Address:** 921 Pocopson Road, West Chester, PA 19382
oric Name/Other Name: Sheeder house

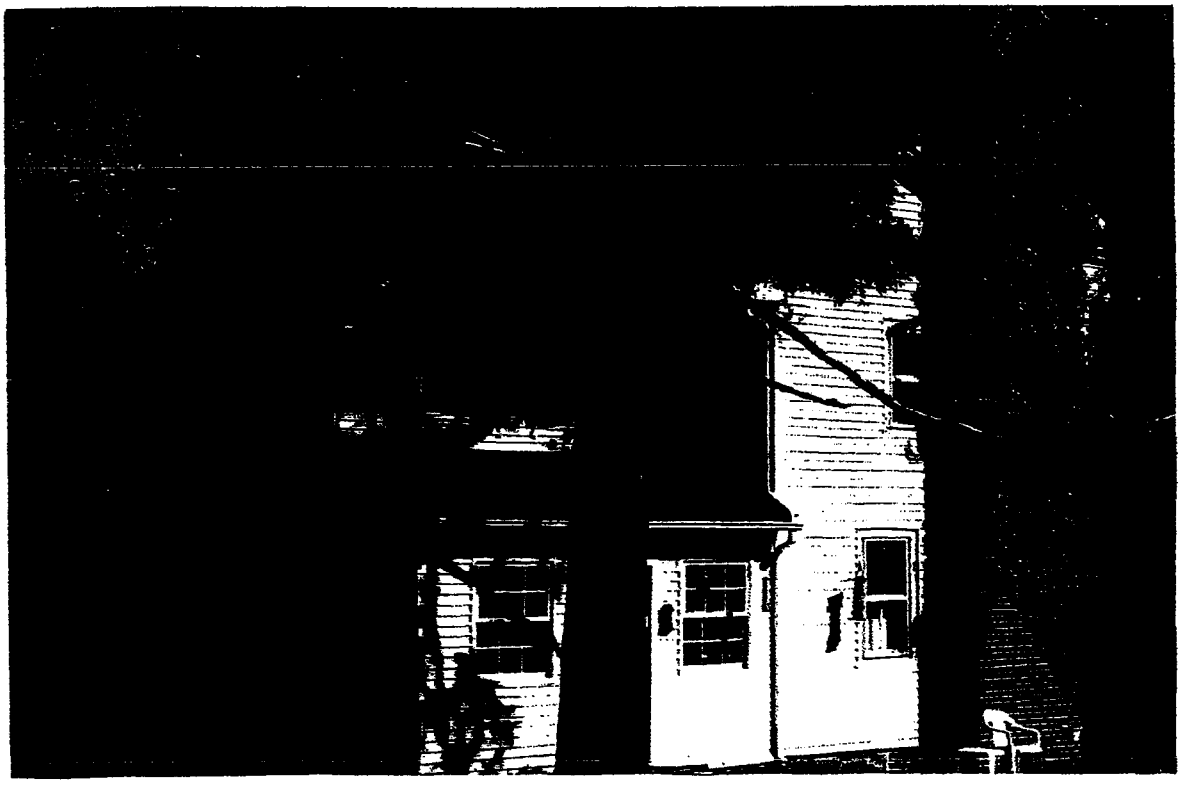
E PLAN

PHOTO INFORMATION

Attach Photo Here

Number	Description of View	Direction of Camera
7	right side	north
8	right side	northwest

Photographer Name: Allen G. Heist **Date:** 9/20/04
Negative Location: 1011 Daisy Point Rd., Pottstown, PA



PENNSYLVANIA HISTORIC RESOURCE SURVEY FORM - DATA SHEET 89B

Pennsylvania Historical and Museum Commission, Bureau for Historic Preservation

IDENTIFICATION AND LOCATION

Survey Code: _____ Tax Parcel/Other No.: 63-4-144

County: 1. 029 Chester 2. _____

Municipality: 1. Pocopson Township 2. _____

Address: 921 Pocopson Road, West Chester, PA 19382

Historic Name: Sheeder house

Other Name: _____

Owner Name/Address: Toll Bros., Inc., 3103 Philmont Ave., Huntingdon Valley, P

Owner Category: X Private ___ Public-local ___ Public-state ___ Public-federal

Resource Category: X Building ___ District ___ Site ___ Structure ___ Object

Number/Approximate Number of Resources Covered by This Form: 1

USGS Quad: 1. Unionville 2. _____

UTM References A. 75°37'50.85" W C. _____

B. 39°54'27.64" N D. _____

HISTORIC AND CURRENT FUNCTIONS

	Historic Function Category:	Subcategory:	Code:
A	Domestic	Single Dwelling	0 1 A
B.			
C.			
D.			

Particular Type: A. Farm House

B. _____

C. _____

D. _____

	Current Function Category:	Subcategory:	Code:
A	Vacant/Not In Use		9 8
B.			
C.			
D.			

PHYSICAL DESCRIPTION

Architectural Classification: A. Late 19th & early 20th Revival: Colonial 5 1

B. _____ C. _____

D. _____ Other: _____

Exterior Materials: Foundation Stone 4 2 Roof Asphalt 6 3

Walls Vinyl 7 2 Walls _____

Other _____ Other _____

Structural System: 1. Wood - General 1 0 2. _____

Width 33 ft. Depth 22 ft. A Stories/Height 2½ B

HISTORICAL INFORMATION

Year Built: C. 1900 to _____ **Additions/Alterations:** C. _____ C. _____

Basis for Dating: X **Documentary** _____ **Physical**

Explain: Chester County Assessment Office records

Cultural/Ethnic Affiliation: 1. none 2. _____

Associated Individuals: 1. none 2. _____

Associated Events: 1. none 2. _____

Architects/Engineers: 1. unknown 2. _____

Builders: 1. unknown 2. _____

MAJOR BIBLIOGRAPHICAL REFERENCES

none

PREVIOUS SURVEY, DETERMINATIONS

None

EVALUATION (Survey Director/Consultants Only)

Individual NR Potential: ___ Yes X No **Context[s]:** _____

Contributes to a Potential District: ___ Yes X No **District Name/Status:** _____

Explain:

THREATS

Threats: 3 1. None 2. Public Development 3. Private Development 4. Neglect 5. Other

Explain: Building proposed for demolition as part of the construction of a 160 unit residential subdivision

SURVEYOR INFORMATION

Surveyor Name/Title: Allen G. Heist, Consultant **Date:** Sept. 20, 2004
Project Name: Lenape/Pocopson Sewage Facilities Plan
Organization: Castle Valley Consultants **Telephone:** 610-469-8414
Street and No.: 1011 Daisy Point Road
City, State: Pottstown, PA **Zip Code:** 19465
Additional Survey Documentation:
Associated Survey Codes:

Survey Code: _____ **Tax Parcel/Other No.:** 63-4-144

County: Chester **Municipality:** Pocopson Township

Address: 921 Pocopson Rd., West Chester, PA 19382

Historic Name/Other Name: Sheeder house

PHYSICAL DESCRIPTION:

The building is situated on an 109.1 acre parcel. Less than 1 acre of lawn surrounds the building, with the remaining property containing overgrown vegetation.

The building is currently vacant and in a state of neglect (e.g. - overgrown landscaping, chipped paint, clogged rain gutters, unwashed siding, etc.). The main bay is 22'x33', with a smaller bay attached perpendicular in the rear. The building is covered with vinyl siding and contains an exterior brick chimney. A small porch is located in the front of the building.

Historic Name/Other Name: Sheeder house

HISTORICAL NARRATIVE:

According to Chester County Tax Assessment Office records, the building was constructed in 1900. Prior to the purchase by Toll Bros. Inc., the property was owned by Everett & Mary C. Sheeder. The building does not appear to be of historic significance.

Commonwealth of Pennsylvania
Pennsylvania Historical and Museum Commission
Bureau for Historic Preservation
Commonwealth Keystone Building, 2nd Floor
400 North Street
Harrisburg, PA 17120-0093
www.phmc.state.pa.us

October 7, 2004

Craig A. Kologie
Castle Valley Consultants, Inc.
1011 Daisy Point Road
Pottstown, PA 19465

TO EXPEDITE REVIEW USE
BHP REFERENCE NUMBER

Re: ER 02-1689-029-C
DEP 537 Program: Lenape/Pocopson Act 537 Plan Update,
Pocopson Twp., Chester Co.

Dear Mr. Kologie:

The Bureau for Historic Preservation has reviewed the above named project under the authority of the Environmental Rights amendment, Article 1, Section 27 of the Pennsylvania Constitution and the Pennsylvania History Code, 37 Pa. Cons. Stat. Section 500 et seq. (1988). This review includes comments on the project's potential effect on both historic and archaeological resources.

Thank you for submitting the additional information concerning the above referenced project. It is the opinion of the Bureau for Historic Preservation that the Sheeder House is not eligible for listing in the National Register of Historic Places. Therefore, no further evaluation of historic structures will be necessary for this project area and your responsibility for consultation on historic structures for this project is complete.

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

Sincerely,

Kurt W. Carr, Chief
Division of Archaeology &
Protection

KWC/ras

PUBLIC NOTICE

Pocopson Township, Chester County, Pennsylvania has prepared a Special Study as an update to the Township's Act 537 Sewage Facilities Plan titled "Act 537 Sewage Facilities Plan Lenape-Pocopson Study Area". The purpose of the study is to address the long term sewage disposal needs of the study area which includes an area along Pocopson Road between PA Route 52 and PA Route 926. The study area includes a proposed subdivision of 150 homes, known as the Sheeder Tract, as well as existing commercial, residential, and industrial land uses.

Wastewater flows from the project are expected to be 45,150 gallons per day. The sewage will be collected and treated at a new sewage treatment facility with land application sewage disposal to be located on the site of the new subdivision. Publication is required because the proposed project consists of a sewage treatment plant for sewage flows greater that 10,000 gallons per day, and potential conflicts with prime agricultural land preservation policies.

All comments must be submitted to the Township in writing within thirty (30) days of the date of publication of this notice. A copy of the proposed Special Study is available for review during Township business hours, Monday – Thursday 9:00 am -12:00 pm, at the Pocopson Township Municipal Building, 740 Denton Hollow Road, Pocopson, PA 19366, Telephone 610-793-2151. Written comments should be mailed to Pocopson Township, PO Box 1, Pocopson, PA 19366.

Proof of Publication of Notice in the Daily Local News

Under Newspaper Advertising Act No. 587, Approved May 16, 1929

State of Pennsylvania
County of Chester {ss:

{No. _____ Term, 2004

Meghan D. Cavanaugh, Legal Representative of the Daily Local News Company, a corporation, of the County and State aforesaid, being duly affirmed, deposes and says that the Daily Local News, a newspaper of general circulation, published at 250 N. Bradford, Ave., West Chester, PA, County and State aforesaid, was established November 19, 1872, and Incorporated December 11, 1911, since which date the Daily Local News has been regularly issued in said county, and that the printed notice or publication attached hereto is exactly the same as printed and published in the regular editions and issues of the said Daily Local News on the following dates viz:

December 27 A.D. 2004

Affiant further deposes that he/she is the proper person duly authorized by the Daily Local News Company, a corporation, publishers of said Daily Local News, a newspaper of general circulation, to verify the foregoing statement under oath, and that affiant is not interested in the subject matter of the aforesaid notice or advertisement, and that all allegations in the foregoing statements as to time, place and character of publication are true.

COPY OF NOTICE OR PUBLICATION

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affirmed to and subscribed before me this 28th

day of December , 2004

Notary Public

My Commission Expires:

Notarial Seal
Beverly A. Wolfe, Notary Public
East Bradford Twp., Chester County
My Commission Expires June 4, 2005
Member, Pennsylvania Association of Notaries

Statement of Advertising Costs

Craig Kologie

Castle Valley Consultants, Inc.

1011 Daisy Point Road

Pottstown, PA 19465

To DAILY LOCAL NEWS COMPANY, Dr.
For publishing the notice or publication attached
hereto on the above stated dates .....$ _____
Probating same .....$ _____
Total .....$ _____

Publisher's Receipt for Advertising Costs

The Daily Local News Company, a corporation, publishers of the Daily Local News, a newspaper of general circulation, hereby acknowledges receipt of the aforesaid notice and publication costs and certifies that the same has been duly paid.
DAILY LOCAL NEWS, a Corporation, Publishers of the DAILY LOCAL NEWS, a newspaper of General Circulation.

DelVal Soil & Environmental Consultants Inc.

Sky Run II • Suite A1 • 4050 Skyron Drive • Doylestown, PA 18901
Phone (215) 345-5545 Fax (215) 345-8138

August 12, 2004

Castle Valley Consultants
10 S. Clinton Street, Suite 302
Doylestown, PA 18901

Attn: Craig Kologi

RE: Detailed Soil Evaluation Test Results
Sheeder Tract
PADEP Code No. 1-15946-128-3IKLMN
East Nottingham Township, Chester County, PA
DelVal Job #01-672

Dear Mr. Kologi:

As requested, DelVal Soil & Environmental Consultants, Inc. (DelVal) has completed a soil evaluation of the above referenced parcel to determine the suitability of the site for community land-based sewage disposal. A DelVal staff qualified Soil Scientist utilizing backhoe-excavated soil test pits evaluated the site in September 2003 and January 2004. The evaluation was conducted in conjunction with a representative of PADEP, Nancy Sansoni.

The DelVal qualified Soil Scientist, Michael S. Sowers, is an member of the Pennsylvania Association of Professional Soil Scientists (PAPSS) with over 10 years of soil science experience in the characterization, classification, mapping and interpretation of soils as they relate to the function of on-lot sewage disposal systems. The soil scientist also has a Bachelor's of Science Degree in Agronomy, is a certified Sewage Enforcement Officer, and an ARCPACS Certified Professional Soil Scientist #25019.

A morphologic soil evaluation was performed at each test location and a detailed soil profile description was prepared (see attached). A table summarizing the limiting zone and the soil depth and drainage class at each test location is also attached. The enclosed plan shows the surveyed locations of all the soil test excavations performed, as well as, the limits of the deep, well-drained soil within the tested areas.

Our findings indicate that the site and soil conditions in the areas identified on the attached plan meet the current PA Department of Environmental Protection (PADEP) guidelines for spray irrigation disposal. Based upon the soil morphologic characteristics

Scan

of texture, structure and consistency, the soil can assimilate the standard PADEP application rates for deep, well-drained soil.

If you have any questions or require additional information, please do not hesitate to call.

Sincerely,

DelVal Soil & Environmental Consultants, Inc.

Jamie Sundermier
Soil Scientist

Cc: Andrew Semon, Toll Brothers, Inc.- Via U.S. Mail: 130 Concord Road, Boothwyn, PA 19061
Vic Kelly, Commonwealth Engineers, Inc.- Via U.S. Mail: 501 Trestle Place, Downingtown, PA 19335

Sheeder Tract - Pocopson Road Toll Brothers, Inc.		
Test Pit #	**Limiting Zone (inches)**	**Drainage Class**
9-9-1	78+	Deep, Well Drained
9-9-2	61	Deep, Well Drained
9-9-3	27R	Moderately Deep, Well Drained
9-9-4	92+	Deep, Well Drained
9-9-5	89+	Deep, Well Drained
9-9-6	82+	Deep, Well Drained
9-9-7	89+	Deep, Well Drained
9-9-8	78+	Deep, Well Drained
9-9-9	89+	Deep, Well Drained
9-9-10	84+	Deep, Well Drained
9-9-11	74+	Deep, Well Drained
9-9-12	80+	Deep, Well Drained
9-9-13	27 M	Deep, Moderately Well Drained
9-9-14	84+	Deep, Well Drained
9-9-15	84+	Deep, Well Drained
9-10-16	37 M	Deep, moderately well drained
9-10-17	13	Deep, Somewhat Poorly Drained
9-10-18	31 M	Deep, moderately well drained
9-10-19	75+	Deep, Well Drained
9-10-20	80+	Deep, Well Drained
9-10-21	29 M	Deep, moderately well drained
9-10-22	81+	Deep, Well Drained
9-10-23	87+	Deep, Well Drained
9-10-24	87+	Deep, Well Drained
9-10-25	78+	Deep, Well Drained
9-10-26	77+	Deep, Well Drained
9-10-27	66 R	Deep, Well Drained
9-10-28	84+	Deep, Well Drained
9-10-29	37 R	Moderately Deep, Well Drained
9-10-30	64 R	Deep, Well Drained
9-10-31	73+	Deep, Well Drained
9-10-32	12 M	Deep, Somewhat Poorly Drained
1-6-33	67+	Deep, Well Drained
1-6-34	30 M	Deep, Moderately Well Drained
1-6-35	71+	Deep, Well Drained
1-6-36	88+	Deep, Well Drained
1-6-37	90+	Deep, Well Drained
1-6-38	72+	Deep, Well Drained
1-6-39	91+	Deep, Well Drained
1-6-40	83+	Deep, Well Drained
1-6-41	81+	Deep, Well Drained

Del Val Soil & Environmental Consultants, Inc. Sky Run II • Suite A1 • 4050 Skyron Drive • Doylestown, PA 18901 • Phone (215) 345-5545 • Fax (215) 345-8138

1-6-42	85+	Deep, Well Drained
1-6-43	91+	Deep, Well Drained
1-6-44	43 ECF	Deep, Well Drained
1-6-45	49 FR	Deep, Well Drained
1-6-46	74+	Deep, Well Drained

* **M** – Mottling; **R** – Rock; **ECF** – Excessive Coarse Fragments; **FR** – Fractured Rock

DelVal Soil & Environmental Consultants Inc.

Date: 9/9/03 Pit # 9-9-1 DelVal Job #01-672
Project: Sheeder Tract
Location:
Pocopson Twp., Chester Co., PA

Limiting Zone 78+"

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundary
Ap	0-6	7.5YR 3/2	gravelly l	1 co gr	friable		abrupt wavy
Bw	6-27	10YR 4/4	gravelly l	1 f sbk	friable		clear wavy
C	27-78	Variegated	very gravelly micaceous ls	0 sg	loose		

DEP Representative: Nancy Sansoni Soil Scientist: Michael Sowers

Notes:

Drainage Class:
Deep Well Drained

COARSE FRAGMENTS (% of Vol.)
15-35% 35-65% >65%
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - *1*
Moderate - *2*
Strong - *3*
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc

Date: 9/9/03 Pit # 9-9-2 DelVal Job #01-672
Project: Sheeder Tract
Location:
Pocopson Twp., Chester Co., PA

Limiting Zone Excessive CS 61"

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundary
Ar	0-6	7.5YR 3/3	micaceous l	1 m gr	friable		abrupt smooth
Bt	6-19	10YR 4/6	micaceous l	2 m sbk	friable		clear wavy
BC	19-36	Variegated	micaceous sl	1 f sbk	very friable		clear wavy
C1	36-61	Variegated	gravelly micaceous sl	0 m	very friable		abrupt wavy
C2	61-89	Variegated	extremely channery micaceous sl	0 sg	loose		

DEP Representative : Nancy Sansoni Soil Scientist: Michael Sowers

Notes:

Drainage Class:
Deep Well Drained

COARSE FRAGMENTS (% of Vol.)
15-35% 35-65%
>65%
gravelly very gravelly
extr. gravelly
channery very channery
extr.channery
cobbly very cobbly
extr. cobbly
flaggy very flaggy
extr. flaggy
stony very stony
extr. stony

TEXTURE
cos - coarse sand
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sicl - silty clay loam
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STRUCTURE
Grade
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Moderate - 2
Strong - 3
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Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc.

Date: 9/9/03 Pit # 9-9-3 DelVal Job #01-672
Project: Sheeder Tract
Location:
Pocopson Twp., Chester Co., PA

Limiting Zone Voids at 27"

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundar
Ap	0-7	10YR 3/2	Gravelly micaceous l	1 m gr	friable		abrupt smooth
Bw	7-27	10YR 4/6	gravelly micaceous l	2 f sbk	friable		clear wavy
C	27-60	Variegated	extremely channery ls w/voids	0 sg	loose		

DEP Representative : Nancy Sansoni Soil Scientist: Michael Sowers

Notes:

Drainage Class:
Deep Well Drained

COARSE FRAGMENTS (% of Vol.)
15-35% 35-65% >65%
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
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lcos - loamy coarse sand
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fsl - fine sandy loam
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scl - sandy clay loam
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sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - 1
Moderate - 2
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m - massive
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Size
vf - very fine
f - fine
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BOUNDARY
Distinctness
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Clear 1-2.5"
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Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc.

Date: 9/9/03 Pit # 9-9-4 DelVal Job #01-672
Project: Sheeder Tract
Location:
Pocopson Twp., Chester Co., PA

Limiting Zone 92+"

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundary
Ap	0-8	10YR 3/2	micaceous sl	2 m gr	friable		abrupt smooth
B+	8-20	10YR 4/6	micaceous sl	2 m sbk	friable		clear wavy
C	20-92	Variegated	gravelly micaceous sl	0 m	very friable		

DEP Representative : Nancy Sansoni Soil Scientist: Michael Sowers

Notes:

Drainage Class:
Deep Well Drained

COARSE FRAGMENTS (% of Vol.)
15-35% 35-65% >65%
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand

STRUCTURE
Grade
Structureless - 0
Weak - *1*
Moderate - *2*
Strong - *3*
Type
pl - platy

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY

DelVal Soil & Environmental Consultants Inc.

Date: 9/9/03 Pit # 9-9-5 DelVal Job #01-672
Project: Sheeder Tract
Location:
Pocopson Twp., Chester Co., PA

Limiting Zone 89+"

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundary
Ap	0-8	10YR 3/3	micaceous sil	1 co gr	friable		abrupt smooth
Bt	8-31	10 YR 4/6	micaceous sil	2 m sbk	friable		clear wavy
BC	31-49	Variegated	micaceous sl	1 m sbk	friable		gradual wavy
C	49-89+	Variegated	channery micaceous ls	0 m	very friable		

DEP Representatitve : Nancy Sansoni Soil Scientist: Michael Sowers

Notes:

Drainage Class:
Deep Well Drained

COARSE FRAGMENTS (% of Vol.)
15-35% 35-65% >65%
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand

STRUCTURE
Grade
Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY

DelVal Soil & Environmental Consultants Inc.

Date: 9/9/03 Pit # 9-9-6 DelVal Job #01-672
Project: Sheeder Tract
Location:
Pocopson Twp., Chester Co., PA

Limiting Zone 82+"

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundary
Ap	0-7	10YR 4/3	micaceous l	1 m gr	friable		abrupt smooth
Bt	7-24	10YR 4/6	micaceous sil	2 m sbk	friable		clear wavy
BC	24-39	10YR 5/6	micaceous l	1 m sbk	friable		gradual wavy
C	39-82	Variegated	micaceous sl	0 m	very friable		

DEP Representative : Nancy Sansoni Soil Scientist: Michael Sowers

Notes:

Drainage Class:
Deep Well Drained

COARSE FRAGMENTS (% of Vol.)
15-35% 35-65% >65%
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc

Date: 9/9/03 Pit # 9-9-7 DelVal Job #01-672
Project: Sheeder Tract
Location:
Pocopson Twp., Chester Co., PA

Limiting Zone 89+"

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundary
Ap	0-11	7.5YR 3/2	micaceous sil	2 m gr	friable		abrupt smooth
Bt	11-23	10YR 4/6	micaceous sil	2 m sbk	friable		clear wavy
BC	23-39	Variegated	micaceous l	1 m sbk	very friable		gradual wavy
C	39-89	Variegated	channery micaceous sl	0 m	very friable		

DEP Representative : Nancy Sansoni Soil Scientist: Michael Sowers

Notes:

Drainage Class:
Deep Well Drained

COARSE FRAGMENTS (% of Vol.)
15-35% **35-65%** **>65%**
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - *1*
Moderate - *2*
Strong - *3*
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct.
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc.

Date: 9/9/03 Pit # 9-9-8 DelVal Job #01-672
Project: Sheeder Tract
Location:
Pocopson Twp., Chester Co., PA
Limiting Zone 78+"

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundary
Ap	0-8	10YR 4/2	micaceous sil	2 m gr	friable		abrupt smooth
Bt	8-20	10 YR 4/6	gravelly micaceous l	1 m sbk	friable		clear wavy
BC	20-29	Variegated	micaceous l	1 m sbk	very friable		gradual wavy
C	29-78	Variegated	micaceous l	0 m	very friable		

DEP Representative : Nancy Sansoni Soil Scientist: Michael Sowers

Notes:

Drainage Class:
Deep Well Drained

COARSE FRAGMENTS (% of Vol.)
15-35% 35-65% >65%
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc

Date: 9/9/03 Pit # 9-9-9 DelVal Job #01-672
Project: Sheeder Tract
Location:
Pocopson Twp., Chester Co., PA

Limiting Zone 89+"

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundary
Ap	0-9	10YR 4/3	micaceous l	1 m sbk	friable		abrupt smooth
Bt	9-24	10YR 4/6	channery micaceous l	1 m sbk	friable		abrupt wavy
BC	24-37	Variegated	micaceous l	1 m sbk	friable		gradual wavy
C	37-89	Variegated	channery micaceous sl	0 m	friable		

DEP Representative : Nancy Sansoni Soil Scientist: Michael Sowers

Notes:

Drainage Class:
Deep Well Drained

COARSE FRAGMENTS (% of Vol.)
15-35% **35-65%** **>65%**
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c - clay

STRUCTURE
Grade
Structureless - 0
Weak - *1*
Moderate - *2*
Strong - *3*
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc

Date: 9/9/03 Pit # 9-9-10 DelVal Job #01-672
Project: Sheeder Tract
Location:
Pocopson Twp., Chester Co., PA

Limiting Zone 84"

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundary
Ap	0-13	10YR 4/3	micaceous l	1 m sbk	friable		gradual smooth
Bt	13-29	10YR 4/6	micaceous sil	2 m sbk	friable		clear wavy
BC	29-40	Variegated	gravelly micaceous l	1 m sbk	friable		gradual wavy
C	40-84	Variegated	micaceous l	0 m	friable		

DEP Representative : Nancy Sansoni Soil Scientist: Michael Sowers

Notes:

Drainage Class:
Deep Well Drained

COARSE FRAGMENTS (% of Vol.)
15-35% 35-65% >65%
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc.

Date: 9/9/03 Pit # 9-9-11 DelVal Job #01-672
Project: Sheeder Tract
Location:
Pocopson Twp., Chester Co., PA

Limiting Zone 74+"

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundary
Ap	0-6	10YR 4/3	micaceous sil	1 m pl 1 m sbk	friable		abrupt smooth
Bt	6-26	10 YR 4/4	micaceous sil	2 m sbk	friable		clear wavy
C	26-74	Variegated	channery sl	0 m	friable		

DEP Representative : Nancy Sansoni Soil Scientist: Michael Sowers

Notes:

Drainage Class:
Deep Well Drained

COARSE FRAGMENTS (% of Vol.)
15-35% 35-65% >65%
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc

Date: 9/9/03 Pit # 9-9-12 DelVal Job #01-672
Project: Sheeder Tract
Location:
PocopsonTwp., Chester Co., PA

Limiting Zone 80+

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundar
Ap	0-9	10YR 4/3	micaceous sil	1 pl 1 sbk	friable		abrupt smooth
Bt	9-23	10 YR 4/6	channery micaceous sil	2 m sbk	friable		clear wavy
BC	23-41	Variegated	channery micaceous sil	1 m sbk	friable		clear wavy
C	41-80	Variegated	micaceous l	0 m	friable		

DEP Representative : Nancy Sansoni Soil Scientist: Michael Sowers

Notes:

Drainage Class:
Deep Well Drained

COARSE FRAGMENTS (% of Vol.)
15-35% **35-65%** **>65%**
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

TEXTURE
cos - coarse sand
s - sand

STRUCTURE
Grade
Structureless - 0

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%

DelVal Soil & Environmental Consultants Inc.

Date: 9/9/03 Pit # 9-9-13 DelVal Job #01-672
Project: Sheeder Tract
Location:
PocopsonTwp., Chester Co., PA

Limiting Zone 27" Redox

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundary
Ap	0-8	10YR 4/3	sil	2 m gr	friable		abrupt smooth
Bt1	8-27	7.5YR 5/6	sil	2 m sbk	friable		clear wavy
Bt2	27-35	7.5 YR 5/6	heavy sil	2 co sbk	friable	c d	clear wavy
BC	35-47	10YR 4/4	heavy sil	2 m sbk	friable firm	m d	clear wavy
C	47-70	10YR 5/4	micaceous sil	1 sbk	friable	m p	

: Soil Scientist: Michael Sowers

DEP Soil Scientist Nancy Sansoni
Notes:

Drainage Class:
Deep, Moderately well Drained

COARSE FRAGMENTS (% of Vol.)
15-35% 35-65% >65%
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Graduai 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc.

Date: 9/9/03 Pit # 9-9-14 DelVal Job #01-672
Project: Sheeder Tract
Location:
PocopsonTwp., Chester Co., PA

Limiting Zone 84+"

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundary
Ap	0-7	10YR 4/4	micaceous 1	1 m pl 1 m sbk	friable		abrupt smooth
Bt	7-16	10 YR 4/6	channery micaceous 1	2 m sbk	friable		clear wavy
BC	16-27	Variegated	channery micaceous 1	1 m sbk	friable		gradual wavy
C	27-84	Variegated	micaceous 1	0 m	friable		

: Soil Scientist: Michael Sowers
DEP Soil Scientist Nancy Sansoni

Notes:

Drainage Class:
Deep Well Drained

COARSE FRAGMENTS (% of Vol.)
15-35% **35-65%** **>65%**
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

TEXTURE
cos - coarse sand

STRUCTURE
Grade

REDOX FEATURES
Abundance

DelVal Soil & Environmental Consultants Inc.

Date: 9/9/03 Pit # 9-9-15 DelVal Job #01-672
Project: Sheeder Tract
Location:
PocopsonTwp., Chester Co., PA

Limiting Zone: 84+

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundary
Ap	0-12	10YR 4/4	micaceous 1	1 m pl 1 m sbk	friable		abrupt smooth
Bt	12-30	10YR 4/6	channery 1 Micaceous	2 m sbk	friable		clear wavy
BC	30-44	Variegated	channery 1 micaceous	1 m sbk	friable		gradual wavy
C	44-84	Variegated	micaceous 1	0 m	friable		

DEP Representative: Nancy Sansoni Soil Scientist: Michael Sowers

Notes

Drainage Class:
Deep Well Drained

COARSE FRAGMENTS (% of Vol.)
15-35% 35-65% >65%
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc.

Date: 9/10/03 Pit # 9-10-16 DelVal Job #01-672
Project: Sheeder Tract
Location:
PocopsonTwp., Chester Co., PA

Limiting Zone: 37" Redox

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundary
Ap	0-13	7.5YR 3/3	micaceous sil	1 m sbk	friable		abrupt smooth
Bt	13-28	7.5YR 5/6	micaceous sil	2 m sbk	friable		clear wavy
BC	28-49	Variegated	channery l micaceous	1 m sbk	friable	c f @37"	clear wavy
C	49-80+	10YR 4/3	micaceous sl	0 m	friable		

DEP Representative: Nancy Sansoni Soil Scientist: Michael Sowers

Notes

Drainage Class:
Deep, Moderately well drained

COARSE FRAGMENTS (% of Vol.)
15-35% 35-65% >65%
gravelly very gravelly
extr. gravelly
channery very channery
extr.channery
cobbly very cobbly
extr. cobbly
flaggy very flaggy
extr. flaggy
stony very stony
extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c clay

STRUCTURE
Grade
Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth

DelVal Soil & Environmental Consultants Inc.

Date: 9/10/03 Pit # 9-10-17 DelVal Job #01-672
Project: Sheeder Tract
Location:
PocopsonTwp., Chester Co., PA

Limiting Zone 13" Redox

Conduct Percolation Test at "

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundar
Ap	0-13	7.5YR 4/3	sil	1 m sbk	friable		abrupt smooth
Bt	13-30	7.5YR 5/6	sil micaceous	2 m sbk	friable	c d	clear wavy
BC	30-58	7.5YR 5/6	l micaceous	1 m sbk	friable	m d	gradual wavy
C	58-87+	Variegated	l Micaceous	0 m	friable	c d	

DEP Representative: Nancy Sansoni Soil Scientist: Michael Sowers

Notes:
GW @ 78"; 13" redox

DRAINAGE CLASS
Deep
Somewhat poorly drained

COARSE FRAGMENTS (% of Vol.)
15-35% **35-65%** **>65%**
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc

Date: 9/10/03 Pit # 9-10-18 DelVal Job #01-672
Project: Sheeder Tract
Location:
PocopsonTwp., Chester Co., PA

Limiting Zone: 31" redox

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundary
Ap	0-10	7.5YR 4/3	sil	1 m sbk	friable		abrupt smooth
Bt	10-22	7.5YR 5/6	l	2 m sbk	friable		clear wavy
BC	22-50	Variegated	micaceous l	1 m sbk	friable	f f @31"	clear wavy
C	50-75+	Variegated	micaceous l	0 m	friable	c d	

DEP Representative: Nancy Sansoni Soil Scientist: Michael Sowers

Notes

Drainage Class:
Deep, Moderately well drained

COARSE FRAGMENTS (% of Vol.)
15-35% 35-65% >65%
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc.

Date: 9/10/03 Pit # 9-10-19 DelVal Job #01-672
Project: Sheeder Tract
Location:
PocopsonTwp., Chester Co., PA

Limiting Zone: 75+

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundary
Ap	0-6	7.5YR 4/3	sil	1 co gr	friable		abrupt smooth
Bt	6-16	7.5YR 5/6	sil	2 m sbk	friable		clear wavy
BC	16-40	Variegated	channery 1 micaceous	1 m sbk	friable		clear wavy
C1	40-52	Variegated	micaceous 1	1 co pl	friable		clear wavy
C2	52-75+	Variegated	gravelly sl micaceous	0 m	very friable		

DEP Representative: Nancy Sansoni Soil Scientist: Michael Sowers

Notes

Drainage Class:
Deep well drained

COARSE FRAGMENTS (% of Vol.)
15-35% 35-65% >65%
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c - clay

STRUCTURE
Grade
Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc.

Date: 9/10/03 Pit # 9-10-20 DelVal Job #01-672
Project: Sheeder Tract
Location:
PocopsonTwp., Chester Co., PA

Limiting Zone: 80+

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundary
Ap	0-7	7.5YR 4/2	sil	1 m sbk	friable		abrupt smooth
Bt	7-23	7.5YR 5/6	sil	2 m sbk	friable		clear wavy
Bt2	23-49	10YR 4/6	l	1 co sbk	friable		clear wavy
BC	49-57	Variegated	micaceous cl	1 m sbk	friable		gradual wavy
C	57-80+	Variegated	micaceous l	1 co pl	friable		

DEP Representative: Nancy Sansoni Soil Scientist: Michael Sowers

Notes

Drainage Class:
Deep well drained

COARSE FRAGMENTS (% of Vol.)
15-35% 35-65% >65%
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - *1*
Moderate - *2*
Strong - *3*
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater tha width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc.

Date: 9/10/03 Pit # 9-10-21 DelVal Job #01-672
Project: Sheeder Tract
Location:
PocopsonTwp., Chester Co., PA

Limiting Zone: 29" redox

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundar
Ap	0-5	10YR 4/3	sil	1 co gr	friable		abrupt smooth
Bt	5-29	7.5YR 5/6	sil	2 m sbk	friable		clear smooth
BC	29-41	7.5YR 5/6	l	1 m sbk	friable	c f	abrupt smooth
C1	41-59	Variegated	micaceous l	1 t pl	friable		abrupt smooth
C2	59-82+	Variegated	very channery l micaceous	0 m	friable		

DEP Representative: Nancy Sansoni Soil Scientist: Michael Sowers

Notes

Drainage Class:
Deep moderately well drained

COARSE FRAGMENTS (% of Vol.)
15-35% 35-65% >65%
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc.

Date: 9/10/03 Pit # 9-10-22 DelVal Job #01-672
Project: Sheeder Tract
Location:
PocopsonTwp., Chester Co., PA

Limiting Zone: 81+

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundar
Ap	0-5	10YR 4/3	sil	1 co gr	friable		abrupt smooth
Bt	5-19	10YR 4/6	micaceous l	2 m sbk	friable		clear wavy
BC	19-34	Variegated	micaceous l	1 m sbk	friable		clear wavy
C	34-81+	Variegated	channery sl micaceous	0 m	friable very friable		

DEP Representative: Nancy Sansoni Soil Scientist: Michael Sowers

Notes

Drainage Class:
Deep well drained

COARSE FRAGMENTS (% of Vol.)
15-35% 35-65% >65%
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc.

Date: 9/10/03 Pit # 9-10-23 DelVal Job #01-672
Project: Sheeder Tract
Location:
PocopsonTwp., Chester Co., PA

Limiting Zone: 87+

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundar
Ap	0-9	7.5YR 4/3	sil	1 m sbk	friable		abrupt smooth
Bt	9-27	7.5YR 5/6	sl	2 m sbk	friable		clear wavy
BC	27-41	Variegated	micaceous l	1 m sbk	friable		gradual wavy
C	41-87+	Variegated	very channery sl micaceous	0 m	very friable		

DEP Representative: Nancy Sansoni Soil Scientist: Michael Sowers

Notes

Drainage Class:
Deep well drained

COARSE FRAGMENTS (% of Vol.)
15-35% 35-65% >65%
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc.

Date: 9/10/03 Pit # 9-10-24 DelVal Job #01-672
Project: Sheeder Tract
Location:
PocopsonTwp., Chester Co., PA

Limiting Zone: 80+

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundar
A	0-5	10YR 4/3	sil	1 m pl gr	very friable		clear smooth
AB	5-21	10YR 4/4	sil	1 m sbk	friable		abrupt smooth
Ab	21-25	10YR 4/3	sil	1 m sbk	friable		clear smooth
Bt	25-53	10YR 5/6	sil	2 m sbk	friable		clear wavy
BC	53-68	10YR 5/8	micaceous l	1 m sbk	friable		gradual wavy
C	68-80+	Variegated	sl	1 m pl	friable		

DEP Representative: Nancy Sansoni Soil Scientist: Michael Sowers

Notes

Drainage Class:
Deep well drained

COARSE FRAGMENTS (% of Vol.)
15-35% 35-65% >65%
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc.

Date: 9/10/03 Pit # 9-10-25 DelVal Job #01-672
Project: Sheeder Tract
Location:
PocopsonTwp., Chester Co., PA

Limiting Zone: 78+

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundar
Ap	0-6	7.5YR 4/3	micaceous sil	1 m gr	friable		abrupt smooth
Bt	6-23	7.5YR 5/6	micaceous sil	2 m sbk	friable		clear wavy
BC	23-35	Variegated	micaceous l	1 m sbk	friable		clear smooth
C	35-78+	Variegated	very channery sl micaceous	0 m	very friable		

DEP Representative: Nancy Sansoni Soil Scientist: Michael Sowers

Notes

Drainage Class:
Deep well drained

COARSE FRAGMENTS (% of Vol.)
15-35% 35-65% >65%
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc.

Date: 9/10/03 Pit # 9-10-26 DelVal Job #01-672
Project: Sheeder Tract
Location:
PocopsonTwp., Chester Co., PA

Limiting Zone: 77+

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundar
Ap	0-11	7.5YR 4/3	sil	2 m sbk	friable		abrupt smooth
Bt	11-25	7.5YR 5/6	sil	2 m sbk	friable		clear wavy
BC	25-49	Variegated	very gravelly 1 micaceous	1 m sbk	friable firm		gradual wavy
C	49-77+	Variegated	gravelly 1 micaceous	0 m			

DEP Representative: Nancy Sansoni Soil Scientist: Michael Sowers

Notes

Drainage Class:
Deep well drained

COARSE FRAGMENTS (% of Vol.)
15-35% **35-65%** **>65%**
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc

Date: 9/10/03 Pit # 9-10-27 DelVal Job #01-672
Project: Sheeder Tract
Location:
PocopsonTwp., Chester Co., PA

Limiting Zone: 66" Rock

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundai
Ap	0-8	10YR 4/3	micaceous l	1 m sbk	friable		abrupt smooth
BC	8-27	7.5YR 5/6	gravelly l micaceous	1 m sbk	friable		clear wavy
C	27-66	Variegated	micaceous sl	0 m	very friable		abrupt wavy
Cr	66-80	Variegated	fractured schist				

DEP Representative: Nancy Sansoni Soil Scientist: Michael Sowers

Notes

Drainage Class:
Deep well drained

COARSE FRAGMENTS (% of Vol.)
15-35% 35-65% >65%
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc

Date: 9/10/03 Pit # 9-10-28 DelVal Job #01-672
Project: Sheeder Tract
Location:
PocopsonTwp., Chester Co., PA

Limiting Zone: 84+

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundar
Ap	0-7	7.5YR 4/3	channery sil	2 m gr	friable		abrupt smooth
Bt	7-16	7.5YR 5/6	channery sil	1 m sbk	friable		clear wavy
BC	16-26	Variegated	channery l	1 m sbk	friable		clear wavy
C1	26-61	Variegated	very channery sl	0 m	very friable		gradual wavy
C2	61-84+	Variegated	channery sl	0 m	very friable		

DEP Representative: Nancy Sansoni Soil Scientist: Michael Sowers

Notes

Drainage Class:
Deep well drained

COARSE FRAGMENTS (% of Vol.)
15-35% 35-65% >65%
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c - clay

STRUCTURE
Grade
Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc

Date: 9/10/03 Pit # 9-10-29 DelVal Job #01-672
Project: Sheeder Tract
Location:
PocopsonTwp., Chester Co., PA

Limiting Zone: 37" fractured schist

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundary
Ap	0-9	10YR 4/3	gravelly l	1 m sbk	very friable		
BC	9-19	10YR 5/6	channery l	1 m sbk	very friable		
C1	19-37	Variegated	very channery sl	1 m sbk	very friable		
C2	37-72+	Variegated	extremely flaggy sl	0 m	very friable		

DEP Representative: Nancy Sansoni Soil Scientist: Michael Sowers

Notes

Drainage Class:
Deep, well drained

COARSE FRAGMENTS (% of Vol.)
15-35% **35-65%** **>65%**
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc.

Date: 9/10/03 Pit # 9-10-30 DelVal Job #01-672
Project: Sheeder Tract
Location:
PocopsonTwp., Chester Co., PA

Limiting Zone: 64"

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundary
Ap	0-8	10YR 4/3	l	1 m gr	very friable		abrupt smooth
Bt	8-23	10YR 5/6	channery l	1 m sbk	friable		gradual wavy
C	23-64	Variegated	very channery l	0 m	very friable		gradual wavy
Cr	64-80+		fractured schist				

DEP Representative: Nancy Sansoni Soil Scientist: Michael Sowers

Notes

Drainage Class:
Deep well drained

COARSE FRAGMENTS (% of Vol.)
15-35% 35-65% >65%
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c - clay

STRUCTURE
Grade
Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc.

Date: 9/10/03 Pit # 9-10-31 DelVal Job #01-672
Project: Sheeder Tract
Location:
PocopsonTwp., Chester Co., PA

Limiting Zone: 73+"

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundary
Ap	0-10	10YR 4/3	gravelly l	1 m gr	friable		abrupt smooth
BC	10-28	10YR 5/6	channery sl	1 m sbk	very friable		clear wavy
C1	28-48		very flaggy sl	0 m	very friable		clear wavy
C2	48-73+		flaggy sl	0 m	very friable		

DEP Representative: Nancy Sansoni Soil Scientist: Michael Sowers

Notes

Drainage Class:
Deep well drained

COARSE FRAGMENTS (% of Vol.)
15-35% 35-65% >65%
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc.

Date: 9/10/03 Pit # 9-10-32 DelVal Job #01-672
Project: Sheeder Tract
Location:
PocopsonTwp., Chester Co., PA

Limiting Zone: 12" redox

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundar
Ap	0-12	10YR 4/3	sil	2 m gr	friable		abrupt smooth
Bt	12-26	10YR 5/6	sil	2 m sbk	friable	c d	clear wavy
BC	26-50	Variegated	gravelly l	1 m sbk	friable	c p	clear wavy
C	50-79+	Variegated	channery sl	0 m	friable	m d	

DEP Representative: Nancy Sansoni Soil Scientist: Michael Sowers

Notes
GW @ 61"
Drainage Class:
Deep Somewhat poorly drained

COARSE FRAGMENTS (% of Vol.)
15-35% **35-65%** **>65%**
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc.

Date: 01-06-04 Pit # 1-6-33 DelVal Job #01-672
Project: SHEEDER
Location: Pocopson Road
Pocopson Twp., Chester Co., PA

Limiting Zone: 67"+

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundary
A	0-5	7.5YR 3/2	sil	2 m gr	very friable		abrupt smooth
BA	5-12	10YR 4/4	l	1 m sbk	friable		clear smooth
C1	12-25	Variegated	channery l	1 m sbk	friable		clear wavy
C2	25-67	Variegated	channery fsl	0 m	very friable		

DEP Representative: Nancy Sansoni Soil Scientist: Michael Sowers

COARSE FRAGMENTS (% of Vol.)
15-35% **35-65%** **>65%**
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc

Date: 01-06-04 Pit # 1-6-34 DelVal Job #01-672
Project: SHEEDER
Location: Pocopson Road
Pocopson Twp., Chester Co., PA

Limiting Zone: 30" Redox

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundary
Ap	0-13	7.5YR 3/3	sil	1 m sbk gr	friable		abrupt smooth
Bt1	13-30	7.5YR 4/6	sil (heavy)	2 m sbk	friable		clear smooth
Bt2	30-39	10YR 5/8	sil	2 m sbk	friable	c d	clear smooth
Bt3	39-66+	10YR 5/6	sil	2 m sbk	firm friable	m d	

DEP Representative: Nancy Sansoni Soil Scientist: Michael Sowers

COARSE FRAGMENTS (% of Vol.)
15-35% **35-65%** **>65%**
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc

Date: 01-06-04 Pit # 1-6-35 DelVal Job #01-672
Project: SHEEDER
Location: Pocopson Road
Pocopson Twp., Chester Co., PA

Limiting Zone: 71"+

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundary
Ap	0-12	7.5YR 3/3	sil	1 m sbk gr	friable		abrupt smooth
Bt1	12-26	7.5YR 4/6	sil	2 m sbk	friable		clear wavy
Bt2	26-42	7.5YR 5/6	sil	2 co sbk	friable firm		clear wavy
C1	42-53	Variegated	channery l	1 m sbk	friable		clear wavy
C2	53-71	Variegated	channery sl	0 m	very friable		

DEP Representative: Nancy Sansoni Soil Scientist: Michael Sowers

COARSE FRAGMENTS (% of Vol.)
15-35% **35-65%** **>65%**
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - *1*
Moderate - *2*
Strong - *3*
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc.

Date: 01-06-04 Pit # 1-6-36 DelVal Job #01-672
Project: SHEEDER
Location: Pocopson Road
Pocopson Twp., Chester Co., PA

Limiting Zone: 88"+

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundary
A	0-5	7.5YR 3/2	sil	2 m gr	very friable		abrupt smooth
Bt	5-22	7.5YR 5/6	channery sil	2 m sbk	friable		clear smooth
CB	22-32	Variegated	very channery sl	1 m sbk	very friable		gradual wavy
C	32-88	Variegated	micaceous sl	0 m	very friable		

DEP Representative: Nancy Sansoni Soil Scientist: Michael Sowers

COARSE FRAGMENTS (% of Vol.)
15-35% 35-65% >65%
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - *1*
Moderate - *2*
Strong - *3*
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc.

Date: 01-06-04 Pit # 1-6-37 DelVal Job #01-672
Project: SHEEDER
Location: Pocopson Road
Pocopson Twp., Chester Co., PA

Limiting Zone: 90"+

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundary
A	0-7	7.5YR 3/2	sil	2 m gr	very friable		abrupt smooth
BE	7-16	10YR 5/6	channery l	1 m sbk	friable		clear smooth
Bt	16-39	7.5YR 5/6	channery sil	2 m sbk	friable		clear wavy
C	39-90	Variegated	very channery sl	0 m	very friable		

DEP Representative: Nancy Sansoni Soil Scientist: Michael Sowers

COARSE FRAGMENTS (% of Vol.)
15-35% **35-65%** **>65%**
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - *1*
Moderate - *2*
Strong - *3*
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc.

Date: 01-06-04 Pit # 1-6-38 DelVal Job #01-672
Project: SHEEDER
Location: Pocopson Road
Pocopson Twp., Chester Co., PA

Limiting Zone: 72"+

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundary
A	0-5	7.5YR 3/2	sil	2 m gr	very friable		abrupt smooth
Bt	5-23	10YR 5/8	channery l	1 m sbk	friable		clear wavy
C	23-72	Variegated	gravelly fsl	0 m	very friable		

DEP Representative: Nancy Sansoni Soil Scientist: Michael Sowers

COARSE FRAGMENTS (% of Vol.)
15-35% **35-65%**
>65%
gravelly very gravelly
extr. gravelly
channery very channery
extr.channery
cobbly very cobbly
extr. cobbly
flaggy very flaggy
extr. flaggy
stony very stony
extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc.

Date: 01-06-04 Pit # 1-6-39 DelVal Job #01-672
Project: SHEEDER
Location: Pocopson Road
Pocopson Twp., Chester Co., PA

Limiting Zone: 91"+

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundar
A	0-6	7.5YR 3/2	sil	3 m gr	friable		abrupt smooth
Bt	6-17	7.5YR 4/6	gravelly sil	2 m sbk	friable		clear smooth
BC	17-24	7.5YR 5/6	gravelly l	1 m sbk	friable		clear wavy
C1	24-59	Variegated	channery fsl micaceous	0 m	very friable		clear wavy
C2	59-91	Variegated	very channery ls micaceous	0 sg	loose		

DEP Representative: Nancy Sansoni Soil Scientist: Michael Sowers

COARSE FRAGMENTS (% of Vol.)
15-35% 35-65% >65%
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc.

Date: 01-06-04 Pit # 1-6-40 DelVal Job #01-672
Project: SHEEDER
Location: Pocopson Road
Pocopson Twp., Chester Co., PA

Limiting Zone: 83"+

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundar
A	0-5	7.5YR 3/2	sil	2 m gr	very friable		abrupt smooth
Bt	5-24	7.5YR 5/6	sil	2 m sbk	friable		clear wavy
C1	24-47	7.5YR 5/6	channery sl micaceous	1 m pl	friable		gradual wavy
C2	47-83	Variegated	fsl	0 m	very friable		

DEP Representative: Nancy Sansoni Soil Scientist: Michael Sowers

COARSE FRAGMENTS (% of Vol.)
15-35% **35-65%** **>65%**
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc.

Date: 01-06-04 Pit # 1-6-41 DelVal Job #01-672
Project: SHEEDER
Location: Pocopson Road
Pocopson Twp., Chester Co., PA

Limiting Zone: 81"+

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundar
A	0-3	7.5YR 3/2	sil	1 m sbk gr	friable		abrupt smooth
BA	3-9	10YR 4/6	sil	1 m sbk	friable		clear smooth
Bt	9-22	7.5YR 5/6	gravelly sil	2 m sbk	friable		clear wavy
C1	22-47	Variegated	very channery sl	0 m	friable		gradual wavy
C2	47-81	Variegated	gravelly sl	0 m	very friable		

DEP Representative: Nancy Sansoni Soil Scientist: Michael Sowers

COARSE FRAGMENTS (% of Vol.)
15-35% 35-65% >65%
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc

Date: 01-06-04 Pit # 1-6-42 DelVal Job #01-672
Project: SHEEDER
Location: Pocopson Road
Pocopson Twp., Chester Co., PA

Limiting Zone: 85"+

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundar
A	0-4	7.5YR 3/2	sil	2 m gr	very friable		abrupt smooth
Bt	4-20	10YR 5/8	gravelly l	2 m sbk	friable		clear wavy
CB	20-26	7.5YR 4/6	very channery sl micaceous	1 m sbk	friable		gradual wavy
C	26-85	Variegated	very channery sl micaceous	0 m	friable		

DEP Representative: Nancy Sansoni Soil Scientist: Michael Sowers

COARSE FRAGMENTS (% of Vol.)
15-35% **35-65%** **>65%**
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - *1*
Moderate - *2*
Strong - *3*
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc.

Date: 01-06-04 Pit # 1-6-43 DelVal Job #01-672
Project: SHEEDER
Location: Pocopson Road
Pocopson Twp., Chester Co., PA

Limiting Zone: 91"+

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundar
A	0-5	7.5YR 3/2	l	1 m sbk gr	friable		abrupt smooth
Bt1	5-11	7.5YR 4/6	sil	2 m pl	friable firm		clear smooth
Bt2	11-20	7.5YR 5/6	sil	2 m sbk	friable firm		clear wavy
BC	20-29	10YR 5/6	sil	1 m sbk	friable firm		gradual wavy
C	29-91	Variegated	channery fsl micaceous	0 m	very friable		

DEP Representative: Nancy Sansoni Soil Scientist: Michael Sowers

COARSE FRAGMENTS (% of Vol.)
15-35% 35-65% >65%
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc.

Date: 01-06-04 Pit # 1-6-45 DelVal Job #01-672
Project: SHEEDER
Location: Pocopson Road
Pocopson Twp., Chester Co., PA

Limiting Zone: 49" fractured rock

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundar
A	0-6	10YR 3/3	sil	2 m gr	very friable		abrupt smooth
Bt	6-26	10YR 4/6	channery sil	2 m sbk	friable		clear wavy
CB	26-33	10YR 3/6	channery sil/l	1 m sbk	friable		clear wavy
C	33-49	Variegated	very channery sl	0 m	friable		clear smooth
Cr	49-90	Fractured	Gneiss				

DEP Representative: Nancy Sansoni Soil Scientist: Michael Sowers

COARSE FRAGMENTS (% of Vol.)
15-35% 35-65% >65%
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - *1*
Moderate - *2*
Strong - *3*
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc

Date: 01-06-04 Pit # 1-6-44 DelVal Job #01-672
Project: SHEEDER
Location: Pocopson Road
Pocopson Twp., Chester Co., PA

Limiting Zone: 43" excessive coarse fragments

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundary
Ap	0-10	10YR 3/2	l	1 m sbk gr	friable		abrupt smooth
B	10-19	10YR 4/6	channery l	2 m sbk	friable		clear wavy
C	19-43	10YR 3/4	very channery sl	1 m sbk	friable		clear smooth
Cr	43-69	Variegated	extremely channery sl	1 m sbk	friable		clear smooth
2C	69-81	Variegated	very gravelly sl	0 m	very friable		

DEP Representative: Nancy Sansoni Soil Scientist: Michael Sowers

COARSE FRAGMENTS (% of Vol.)
15-35% **35-65%** **>65%**
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c – clay

STRUCTURE
Grade
Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

DelVal Soil & Environmental Consultants Inc

Date: 01-06-04 Pit # 1-6-46 DelVal Job #01-672
Project: SHEEDER
Location: Pocopson Road
Pocopson Twp., Chester Co., PA

Limiting Zone: 74"+

Horizon	Depth (In.)	Color	Texture	Structure	Consistence	Redox Features	Boundar
A	0-8	10YR 3/2	sil	2 f gr	very friable		abrupt smooth
Bt1	8-23	10YR 5/6	sil	2 m sbk	friable		clear wavy
Bt2	23-45	10YR 5/6	cobbly sil/l	2 m sbk	friable		clear wavy
C	45-74	Variegated	gravelly sl	0 m	very friable		

DEP Representative: Nancy Sansoni Soil Scientist: Michael Sowers

COARSE FRAGMENTS (% of Vol.)
15-35% **35-65%** **>65%**
gravelly very gravelly extr. gravelly
channery very channery extr.channery
cobbly very cobbly extr. cobbly
flaggy very flaggy extr. flaggy
stony very stony extr. stony

TEXTURE
cos - coarse sand
s - sand
fs - fine sand
vfs - very fine sand
lcos - loamy coarse sand
ls - loamy sand
lfs - loamy fine sand
lvfs - loamy very fine sand
cosl - coarse sandy loam
sl - sandy loam
fsl - fine sandy loam
vfsl - very fine sandy loam
l - loam
sil - silt loam
si - silt
scl - sandy clay loam
cl - clay loam
sicl - silty clay loam
sc - sandy clay
sic - silty clay
c -- clay

STRUCTURE
Grade
Structureless - 0
Weak - 1
Moderate - 2
Strong - 3
Type
pl - platy
pr - prismatic
cpr - columnar
gr - granular
abk - angular blocky
sbk - subangular blocky
m - massive
s - single grain
Size
vf - very fine
f - fine
m - medium
co - coarse
vc - very coarse
vt - very thin
t - thin
th - thick
vth - very thick

REDOX FEATURES
Abundance
f - Few <2%
c - Common 2-20%
m - Many >20%
Contrast
f - Faint
d - Distinct
p - Prominent

BOUNDARY
Distinctness
Abrupt <1" (thick)
Gradual 2.5 -5"
Clear 1-2.5"
Diffuse >5
Topography
Smooth - boundary is nearly level
Wavy - pockets with width greater than depth
Irregular - pockets with depth greater than width
Broken discontinuous

HYDROGEOLOGIC REPORT
PROPOSED SPRAY IRRIGATION FIELDS
SHEEDER TRACT,
POCOPSON TOWNSHIP,
CHESTER COUNTY, PA

Prepared For:

Castle Valley Consultants, Inc.
10 South Clinton Street, Suite 302
Doylestown, PA 18901

Prepared By:

INTEX Environmental Group, Inc.
6205 Easton Road
Pipersville, PA 18947-1025
Ph: 215.766.7230 ▪ Fax: 215.766.9730

December, 2004

Hydrogeologic Report, Proposed Spray Irrigation Fields
Sheeder Tract, Pocopson Twp., Chester Co., Pa.

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FIGURES AND TABLES

APPENDICES

1.0 INTRODUCTION

A hydrogeologic investigation has been completed in support of an application for spray irrigation of treated wastewater at the Sheeder Tract, located in Pocopson Township, Chester County, Pennsylvania (Figure 1). Three sprayfields are proposed. Sprayfields #1 and #3 are essentially one field separated by a small strip of steep slopes. These combined fields will receive an everage of 35,615 gallons per day (gpd) of effluent. Sprayfield #2 will receive an average of 16,122 gpd of spray effluent.

2.0 SCOPE OF WORK

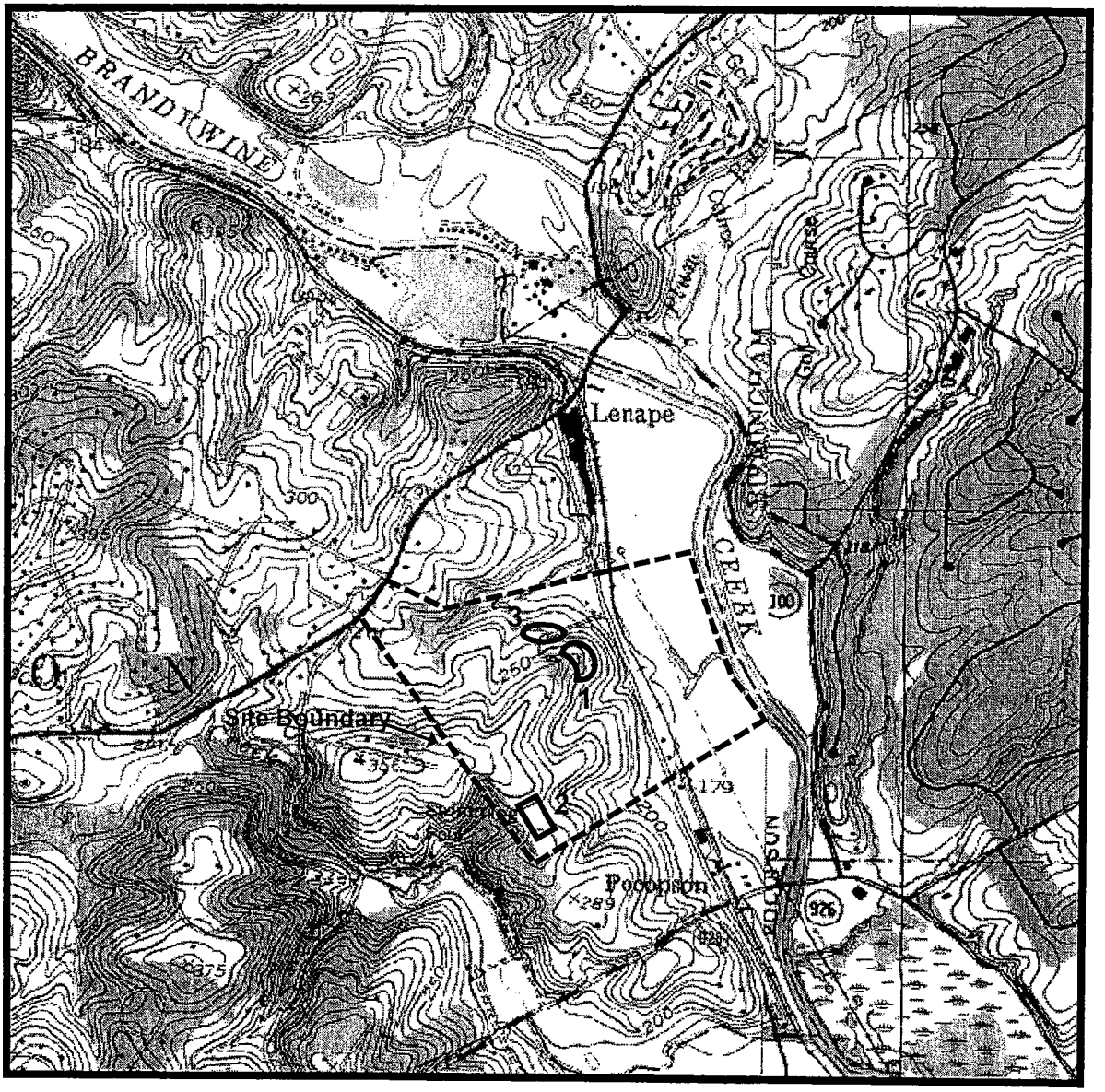
The following tasks were completed for the hydrogeologic investigation.

1) Installation of six groundwater monitoring wells.
2) Conduct pumping tests or piezometer tests on five of the six wells.
3) Sampling of each well for background nitrate concentrations.
4) Conduct flush bottom infiltrometer tests on deep sub-soils.
5) Perform groundwater modeling for long-term groundwater mound formation beneath each sprayfield.
6) Prepare a comprehensive hydrogeologic report.

3.0 REGIONAL GEOLOGY AND HYDROGEOLOGY

The entire site is mapped as being underlain by the Wissahickon albite-chlorite Schist (Figure 2). This is described as a phyllite composed chiefly of quartz, feldspar, muscovite and chlorite (Geyer & Wilshusen, 1982). This rock type has some primary permeability in the weathered zone and low secondary permeability in the unweathered zone. During installation of monitoring wells at the site, it was observed that the weathered zone extended to depths of up to 155 feet.

The site borders the Brandywine Creek, which is the primary drainage and base level for groundwater discharge in the area. Based on topography, it is anticipated that water applied to sprayfields #1 and #3 would follow a short groundwater flow path, and discharge directly into Brandywine Creek. It is anticipated that water applied to sprayfield #2 would discharge into Pocopson Creek, and then flow into Brandywine Creek.



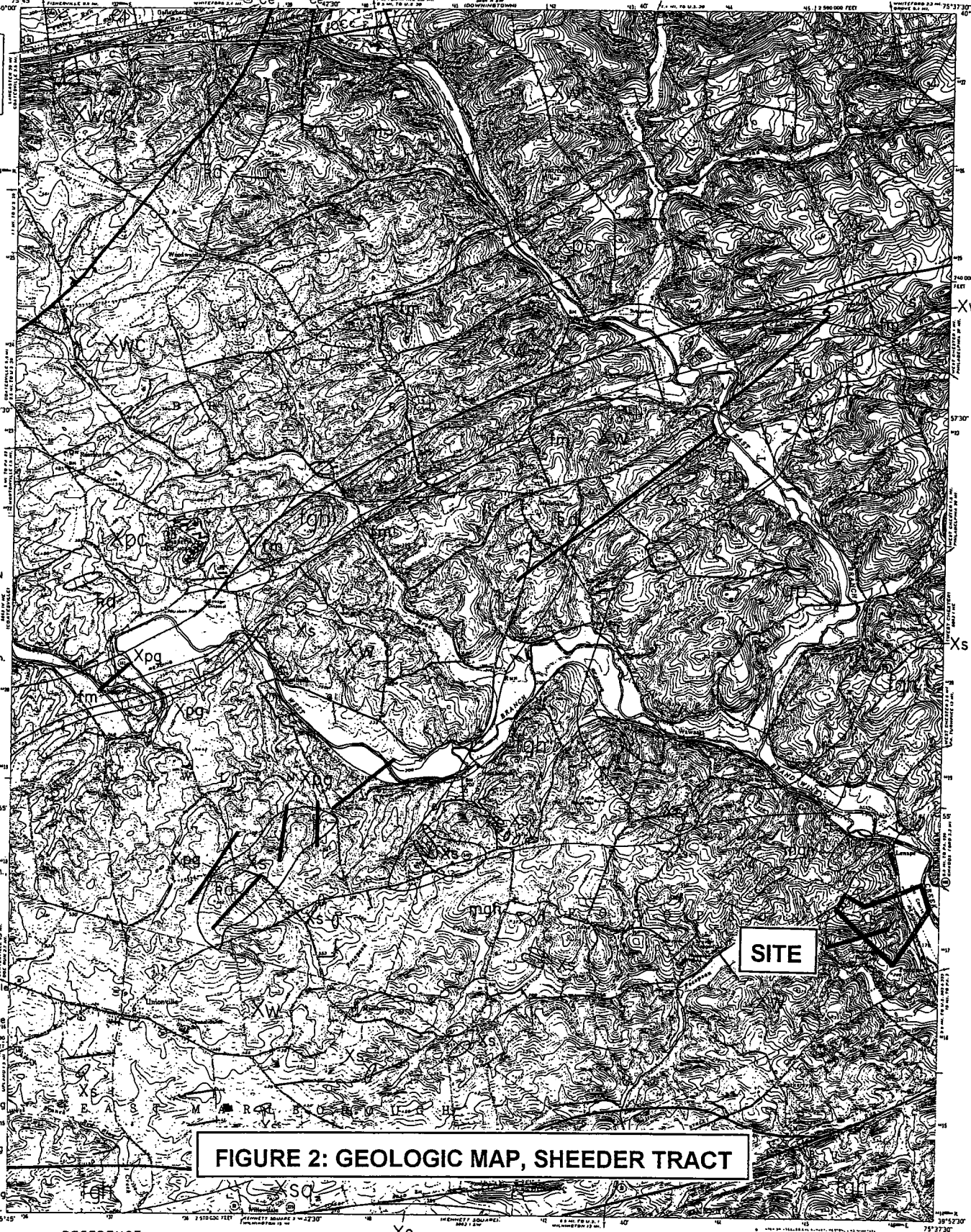
INTEX Environmental Group, Inc 6205 Easton Road Pipersville, PA 18947 215-766-7230 fax 215-766-9730 info@intexenv.com	FIGURE 1 LOCATION MAP		
	Sheeder Property Pocopson Township, Chester County, Pennsylvania		
	Drawn by: MOT	Date: 12/13/04	Source : USGS Unionville Quad.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

UNIONVILLE QUADRANGLE
PENNSYLVANIA—CHESTER CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

SOURCE

U.S.G.S. Folio 223



EXPLANATION

- Rd Diabase
- OEc Conestoga Fm.
- Ce Elbrook Fm.
- Cl Ledger Fm.
- Xpg Pegmatite
- Xs Serpentinite
- Xpc Peters Creek Schist
- Xwc Wissahickon Fm., albite-chlorite schist
- Xw Wissahickon Fm., oligoclase-mica schist
- Xc Cockeysville Marble
- Xsq Setters Quartzite
- fm Franklin Marble
- fgh Felsic gneiss, hornblende-bearing
- fgp Felsic gneiss, pyroxene-bearing
- mgh Mafic gneiss, hornblende-bearing

FIGURE 2: GEOLOGIC MAP, SHEEDER TRACT

REFERENCE

Bascom, F., and Stose, G. W. (1932), *Coatesville-West Chester folio, Pennsylvania-Delaware*, U. S. Geological Survey Geologic Atlas of the U. S., Folio 223, 15 p.

SCALE 1:62500

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

ROAD CLASSIFICATION
Heavy-duty — Light duty —
Medium-duty — Unimproved dirt .....
U.S. Route ○ State Route

Compiled by A. A. SOCOLOW, 1978

UNIONVILLE

4.0 SOIL PERMEABILITY TESTING

Due to the large thickness of weathered material at the site, and the deep water table on parts of the site, permeability testing was performed on the deeper sub-soils. Two tests were performed on each sprayfield as shown on Exhibit I.

Constant head flush bottom infiltrometer tests were used to test permeability in this case. Four-inch diameter PVC was driven approximately one inch into the bottom of a 36-inch deep auger hole. The annulus around the PVC was grouted with bentonite and backfilled with soil. The PVC was filled with water, and the time for the water level to drop one inch was recorded. This step was repeated until the time between one inch drops became uniform. Data plots for the four infiltrometer tests are contained in Appendix I.

At sprayfields #1 and #3, the final saturated infiltrometer rates were between 6 and 7 minutes per inch (19.99 to 17.14 ft/day). At sprayfield #2, the final saturated infiltrometer rates were between 16 and 23 minutes per inch (7.49 to 5.2 ft/day). All of the infiltration rates obtained are sufficient to accommodate the proposed application rates.

5.0 MONITORING WELL INSTALLATION

Six groundwater monitoring wells were installed at the site, three at sprayfields #1 and #3, and three at sprayfield #2. Well locations are shown on Exhibit I.

Wells #1 and #2 were drilled along the downslope perimeter of sprayfield #1 and #3, at the lowest topographic elevation anywhere along the sprayfields. These wells encountered water at shallow depths (5.5 to 10 feet) and did not encounter competent bedrock to their total depths of 15 and 40 feet, respectively. The material into which these wells are installed is essentially a sandy overburden. It was necessary to insert screens and casings to keep the boreholes from collapsing. Well #6 was drilled at a later date to obtain information on depth to groundwater at the top of the sprayfield.

The wells around sprayfield #2 were generally deeper, and encountered water at greater depths. The depths to water at sprayfield #2 ranged from 45 to 62 feet, and well depths ranged from 100 to 155 feet. All wells required inner screens and casings to prevent collapse of the boreholes. The wells at sprayfield #2 encountered the same type of sandy overburden material as was found to occur at sprayfield #1. The thickness of this material was generally about 30 feet, although its

transition into the slightly harder, but still highly weathered, underlying saprolite was difficult to determine.

Table 1 lists construction information for the wells. Appendix II contains well construction summaries.

TABLE 1: Well Construction Data

Well	Depth (ft.)	Screened Interval (ft.)	Diameter (in.)	Depth to Water (ft/ BTC)
1	40	20-40	4	11.04[1]
2	15	5-15	4	6.65[1]
3	120	60-120	4	45.85[2]
4	155	75-155	4	48.95[2]
5	100	60-100	4	30.20[2]
6	120	60-120	4	16.60[1]

[1] 12/03/04
[2] 10/22/04

6.0 AQUIFER TESTING

6.1 Sprayfields #1 and #3

Aquifer testing was performed on wells #1 and #2 at sprayfields #1 and #3. Well #6 was installed at a later date and was not tested.

Wells #1 and #2 are relatively shallow and are finished in very unconsolidated overburden and highly weathered bedrock.

Well #1 was subjected to two pumping tests and associated recovery periods, each lasting approximately 80 minutes. This well was found to have a relatively high yield, with a specific capacity of 1.8 gpm/ft at a pumping rate of 27 gpm. Pumping test data is contained in Appendix III.

The data was analyzed using the Jacob straight line method to obtain transmissivity values. Table 2 contains the results of the transmissivity calculations. The average transmissivity determined

from the pumping and recovery phases was 23,276 gpd/ft. (3,111 ft/day).

Well #2 was shallower than well #1, and had a lower yield and could not be pumped. A piezometer test was performed as an alternative. Appendix III contains the results of this test. The hydraulic conductivity obtained from this test was 17.29 ft/day. This is the same range as the saturated infiltration rates from the infiltration tests performed at Sprayfields #1 and #3. Multiplying the hydraulic conductivity of 17.29 ft/day by the length of the water column in the well (approximately 11 feet), yields a transmissivity of 190.19 ft/day (1,422 gpd/ft). This is likely a conservatively low transmissivity, since it is known that the saturated weathered zone into which the well is drilled is thicker than 11 feet. If the hydraulic conductivity of well #2 is multiplied by the length of the water column in well #1 (29.8 ft), a transmissivity of 515.25 ft/day (3,854 gpd/ft) is obtained.

TABLE 2. Transmissivity Values (gpd/ft) at Sprayfields #1 and #3

Well	#1	#2
Drawdown	20,365	
Recovery	35,640	
Drawdown	8,587	
Recovery	28,512	
Hydraulic Conductivity		17.29 ft/day

6.2 Sprayfield #2

Wells #3, #4 and #5 were tested using low rate pumping tests. Well #3 was pumped at a rate of 6.5 gpm, well #4 was pumped at a rate of 3 gpm, and well #5 at 15 gpm. Drawdown data from the tests on wells #3 and #5 was usable for calculation of aquifer characteristics. However, in general, the recovery data is considered more valid. Pumping test data is contained in Appendix III.

The data was analyzed using the Jacob straight line method to obtain transmissivity (T) values. The T values obtained are listed in Table 3.

TABLE 3. Transmissivity Values (gpd/ft) at Sprayfield #2			
Well	#3	#4	#5
Drawdown	114.4	NC	99.0
Recovery	190.0	36.0	88.0

NC - Not Calculated

The average T values for the wells at sprayfield #2 is 111.48 gpd/ft (14.9 ft/day).

7.0 GROUNDWATER MOUNDING EVALUATION

7.1 General Approach

Sprayfields #1, #3 and #2 were modeled separately because of their distance of separation and their slightly different hydrogeologic characteristics. For both sprayfields, the model used was the Colorado State Groundwater Mounding Model (Sunada, 1985). At sprayfields #1 and #3, the water table is already present in the near-surface, high permeability, weathered zone. The infiltrating effluent, and groundwater mound, will drain directly through thick, relatively high permeability overburden, directly to the nearby Brandywine Creek. Because of their proximity to each other, these fields were modeled as a single field.

At sprayfield #2, the water table is located below this higher permeability zone, in the more competent, and less permeable bedrock. At sprayfield #2, a few scenarios are possible: 1) the groundwater mound will form on the water table within the bedrock, 2) the groundwater mound will form in the bedrock and extend into the weathered zone, and 3) the groundwater mound may form in the weathered zone on top of the bedrock/weathered zone interface.

7.2 Sprayfield #1

The hydraulic gradient calculated for sprayfields #1 and #3 indicates that it trends east toward the Brandywine Creek, and that the depth to water in the center of the field is approximately 16 to 19 feet (Appendix IV). It is clear that the overburden and weathered bedrock in which wells #1 and #2 are located will provide a high permeability pathway through which infiltrating effluent will flow toward Brandywine Creek.

Sprayfields #1 and #3 have an area of 6.09 acres and will receive an average of 35,615 gpd of

effluent. The per unit area application rate will be 0.01795 ft/day. The transmissivity values used in the model was the average from wells #1 and #2 (1,650 ft/day). This is a very conservative value.

The input data for the model is as follows:

Application Rate:	0.01795 ft/day
Transmissivity:	1,650 ft/day
Specific Yield:	0.15
Timeframe:	3,650 days
Depth to Water Table:	16 feet
Distance to Stream:	375 feet
Field Width:	900 feet
Field Length:	295 feet

The results of the modeling calculation are contained in Appendix V. The results indicate an increase of only 0.606 feet beneath the center of the sprayfield, which would provide a clearance of at least 15 to 18 feet between the ground surface and the top of the water table after 10 years of operation. At the downgradient edge of the sprayfield, approximately 200 feet from the center, the increase in water table elevation would be only 0.322 feet. The depth to the water table at the downgradient edge of the sprayfields, at wells #1 and #2 is 10.0 and 5.6 feet, respectively (accounting for casing stickup), and these wells are at least 4 feet lower in elevation than the lowest elevation of the sprayfields, so sufficient clearance will exist in this area as well.

7.3 Sprayfield #2

Sprayfield #2 is 3.44 acres and will receive an average of 16,122 gpd of spray effluent. This translates to an average application rate of 0.01438 ft/day over the sprayfield. The hydraulic gradient was calculated to slope in the direction of Pocopson Creek, 650 feet away and that the depth to groundwater in the center of the field is 45 feet (Appendix IV).

The first mounding model was run assuming that the entire section in which mound formation would occur has a uniform low transmissivity of 14.9 ft/day. Model input was as follows:

Application Rate:	0.01438 ft/day
Transmissivity:	14.9 ft/day
Specific Yield:	0.15
Timeframe:	3,650 days
Depth to Water Table:	45 feet
Distance to Stream:	650 feet
Field Width:	250 feet
Field Length:	600 feet

The results of the mounding calculations are contained in Appendix V. The results indicate that a

clearance on the order of 7.25 feet will exist between the ground surface and the top of the groundwater mound after 10 years of operation.

8.0 NITRATES

Water samples were collected from wells MW-1 through MW-5 and sent to a laboratory to be analyzed for nitrate concentration. Nitrate concentrations ranged from 1.74 mg/ℓ to 15.1 mg/ℓ, with concentrations in well MW-1 and MW-5 exceeding 10 mg/ℓ. This type of nitrate concentration is typical of areas that have been farmed and fertilized historically. During operation of the sprayfields, they will be planted and harvested so that the percolate that reaches the groundwater will have an average nitrate concentration of less than 10 mg/ℓ. Laboratory data packages are contained in Appendix VI.

9.0 SUMMARY AND CONCLUSIONS

The hydrogeologic investigation performed at sprayfields #1, #3 and #2 indicate that potential groundwater mounding beneath the sprayfields after 10 years of continuous operation will be within acceptable parameters. At sprayfields #1 and #3, clearance between the top of the groundwater mound and the ground surface will be at least 15 feet after 10 years. At sprayfield #2, the clearance between the top of the groundwater mound and the ground surface will be at least 7 feet after 10 years.

This investigation was performed durng a year when precipitation and groundwater recharge were above normal, and regional groundwater levels were at or near historic highs. It is likely that water table elevation beneath the sprayfields are also at or near historic highs.

Background groundwater nitrate concentrations in two of the monitoring wells exceeded 10 mg/ℓ. This is attributable to the agricultural use of the property. Crop management during operation of the sprayfields will maintain the average nitrate concentrations in the percolate below 10 mg/ℓ.

10.0 RECOMMENDATIONS

A groundwater monitoring program should be proposed to monitor groundwater around the sprayfields and storage and treatment lagoons.

11.0 REFERENCES

Geyer & Wilshusen, 1982, Engineering Characteristics of Rocks in Pennsylvania; Pa. Topographic and Geologic Survey.

APPENDIX I
Infiltrometer Test Data

Tes #1

min.	sec.	time
1	12.16	745.6
2	12.35	776
3	26.3	1608
4	25.51	1581.6
5	23.2	1412
6	23.51	1461.6
7	23.44	1450.4

Test #2

min.	sec.	time
1	4	276
2	6	360
3	8	512
4	9	588
5	11	670
6	12	737
7	13	817
8	15	956
9	16	962
10	16	961
11	16	963

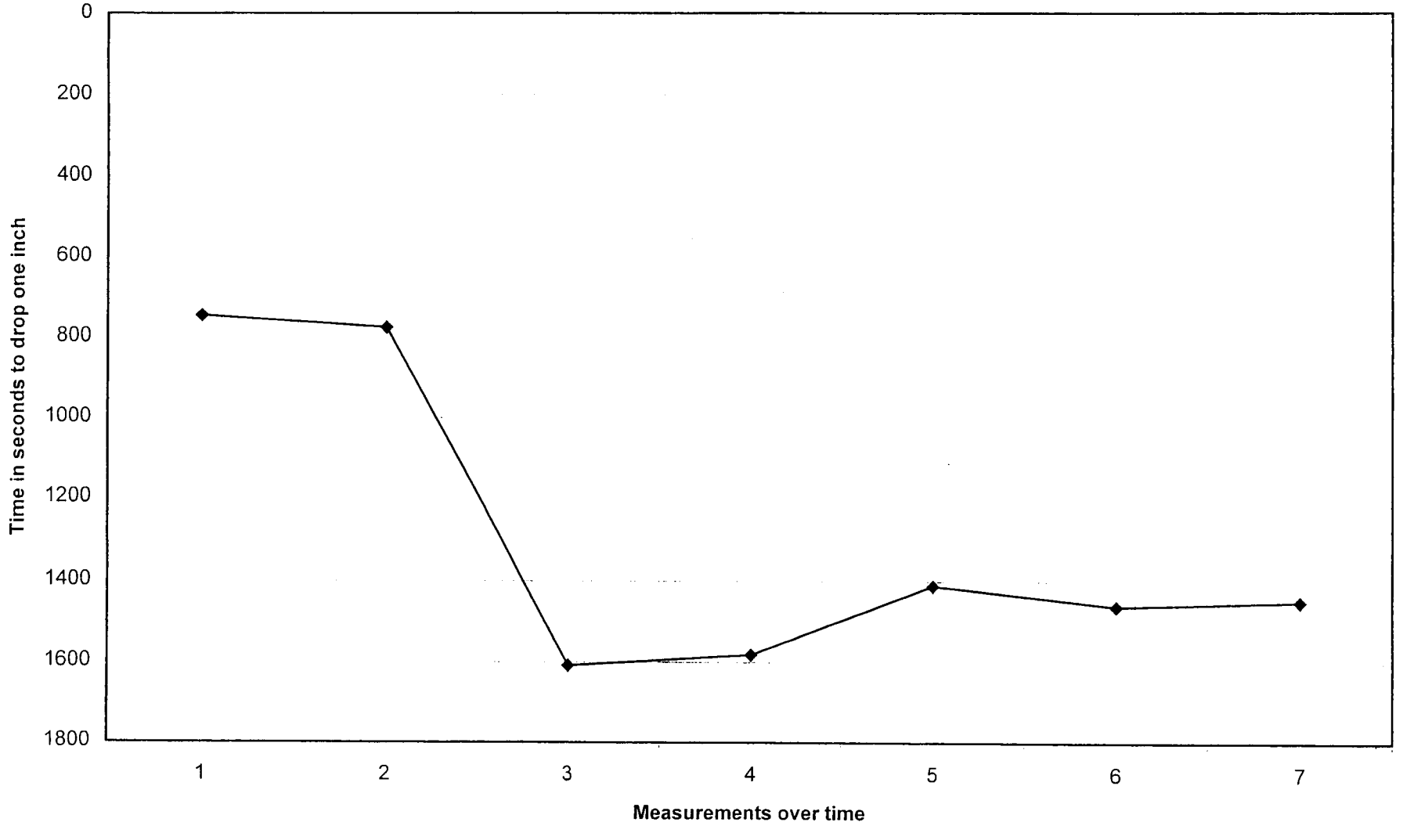
Test #3

min.	sec.	time
1	3	214
2	5	321
3	5	350
4	6	364
5	6	392
6	6	404
7	6	406
8	6	419
9	7	426
10	7	427
11	7	427
12	7	429

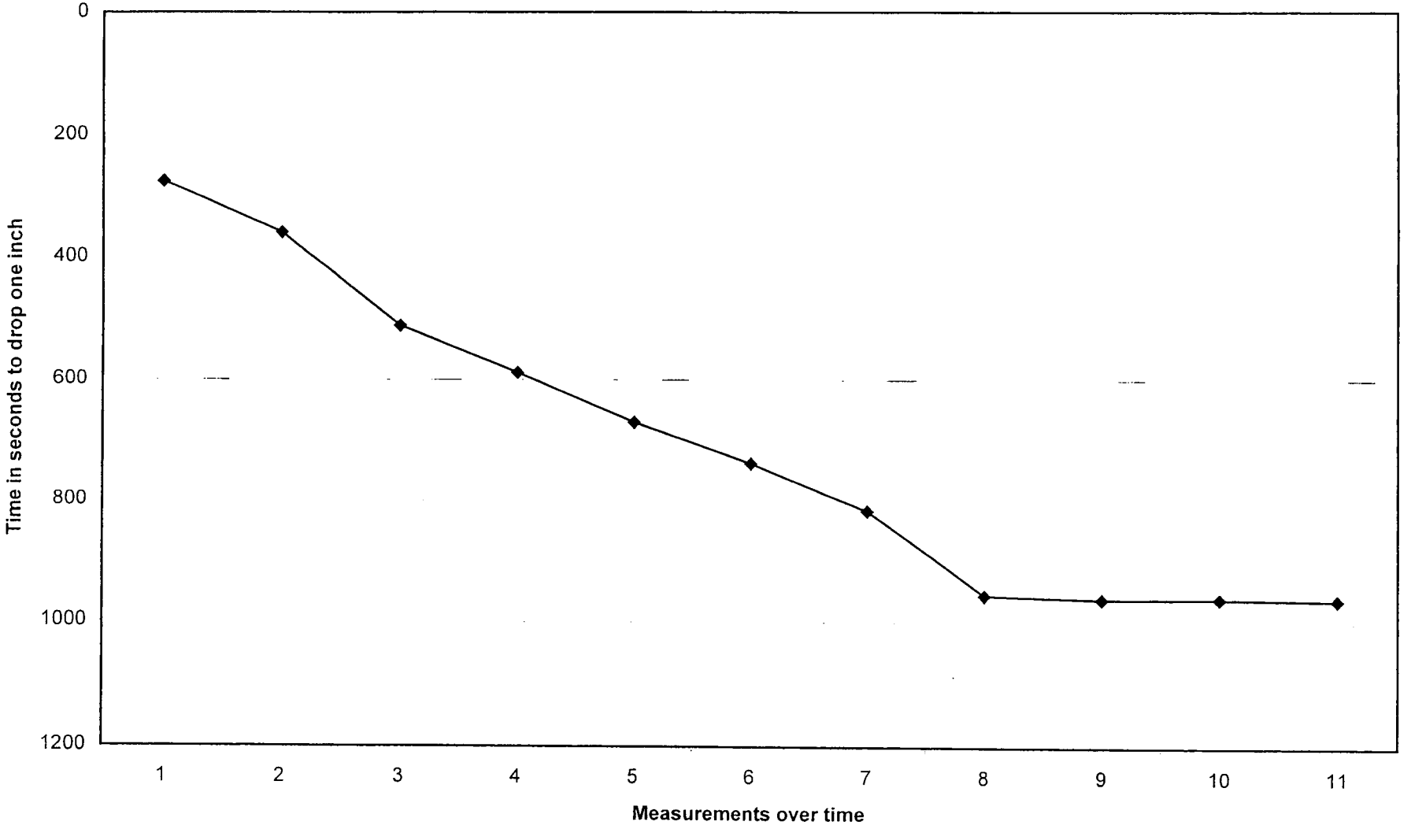
Test #4

min.	sec.	time
1	2	127
2	4	260
3	4	296
4	5	309
5	5	318
6	5	331
7	5	325
8	5	311
9	5	325
10	5	355
11	5	356
12	5	355

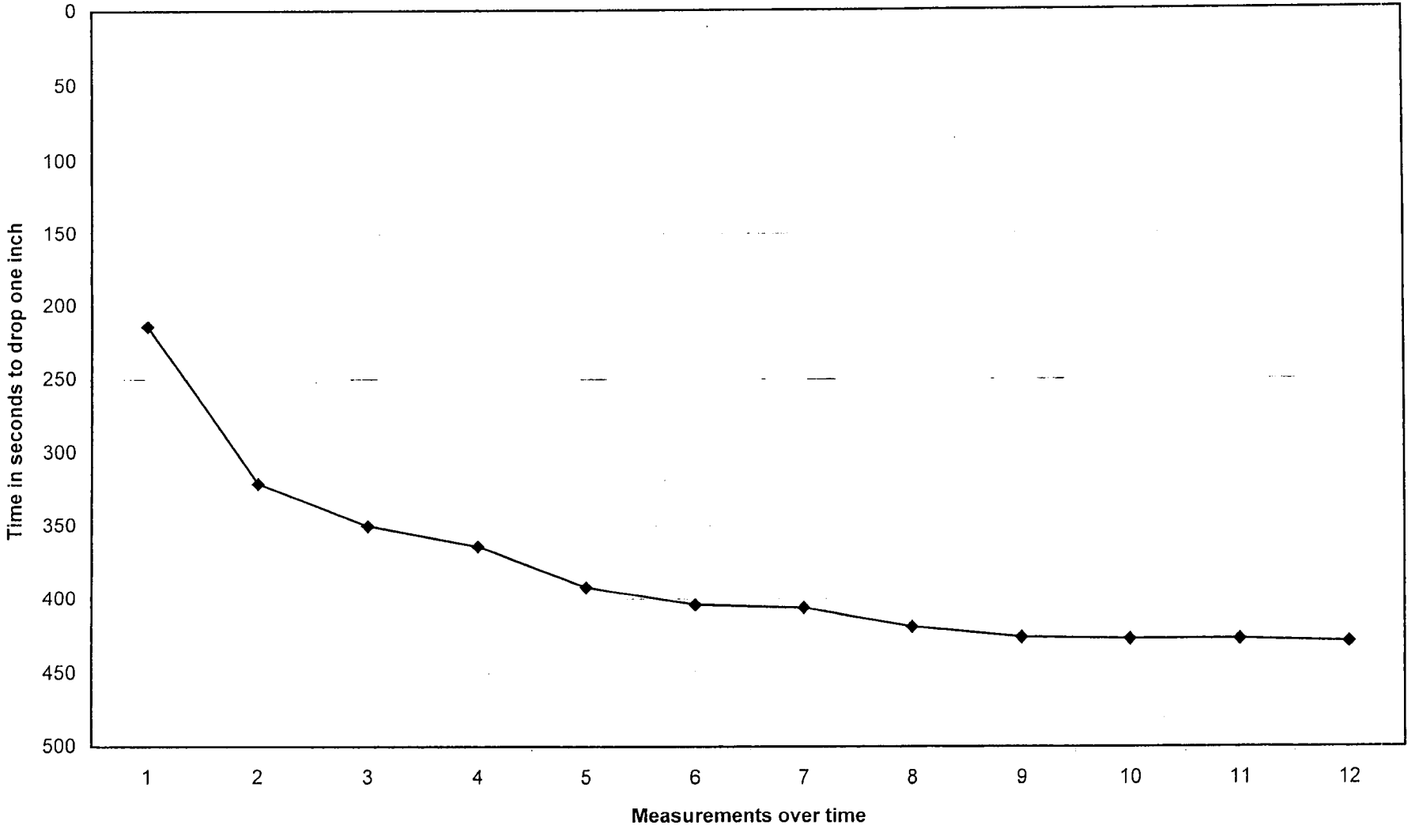
Infiltrometer Test #1



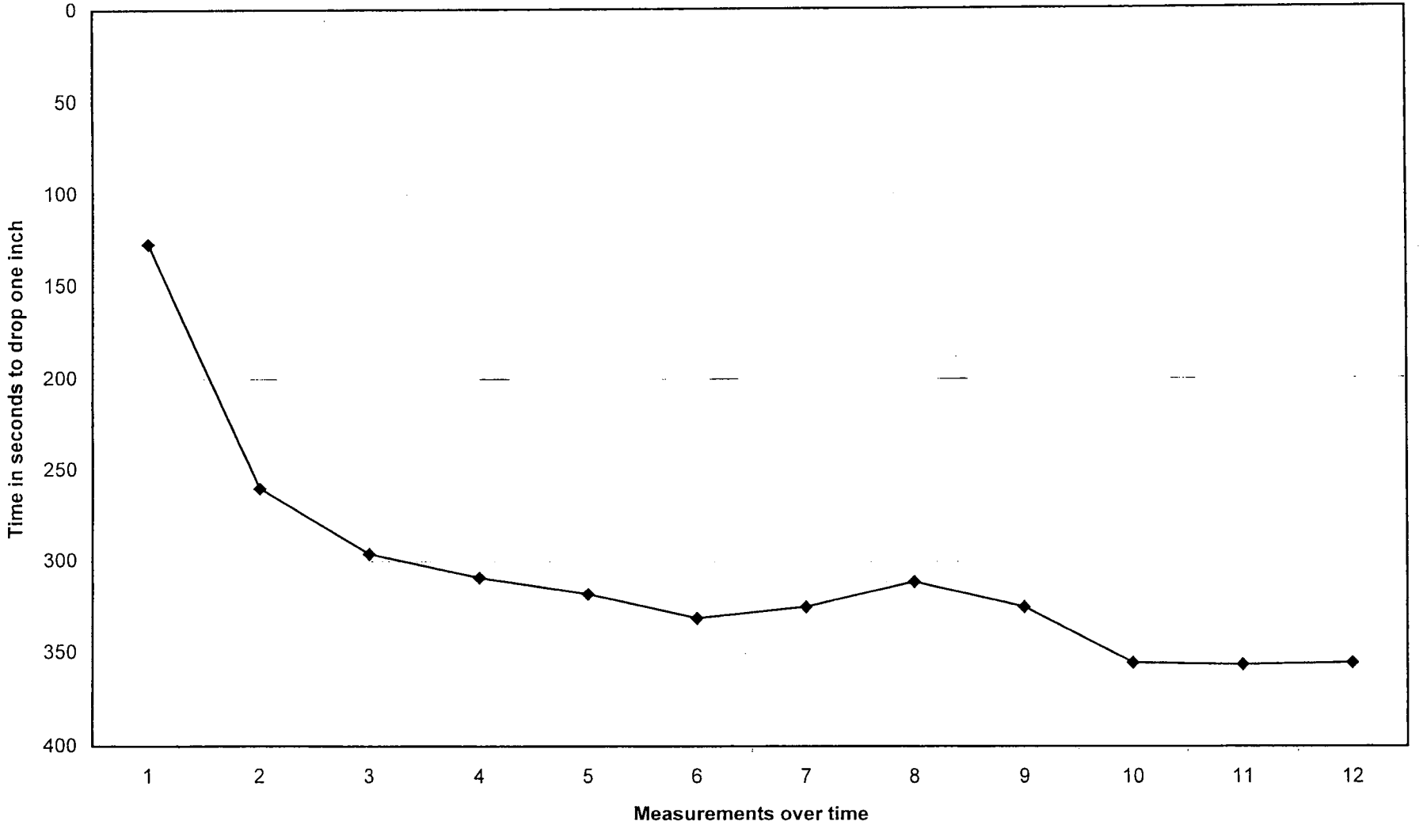
Infiltrometer Test #2



Infiltrometer Test #3



Infiltrometer Test #4



APPENDIX II
Well Construction Summaries

INTEX
Environmental Group, Inc
6205 Easton Road
Pipersville, PA 18947
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fax 215-766-9730
info@intexenv.com

WELL CONSTRUCTION SUMMARY

Project:	Sheeder	Well I.D.:	MW-1
Drilling Co.:	Mayer	Start Date:	10/13/04 13:15:00 PM
Method:	Air Rotary	Finish Date:	10/13/04 14:45:00 PM
Water Level:	12.20 ft. (10/27/04)	Total Depth:	40 Feet
		Well Diameter:	6" borehole 4" PVC casing
		Geologist:	Bill Rankin

Depth (feet)	Well Construction	Lithology	Depth (feet)
5	Ground Surface; Cement Grout; 4" Solid PVC; Annular Sand Pack; 4" Screened PVC	Water @ 12 feet - 6-7 gpm	5
10		Overburden - brown clayey LOAM	10
15			15
20			20
25			25
30		Grey SAND @ 30-40 ft.	30
35			35
40			40
45			45
50			50
55			55
60			60
65			65
70			70
75		F:\OP\0474SHEE\[WELLLOGS.XLS]MW-5	75

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WELL CONSTRUCTION SUMMARY

Project:	Sheeder	Well I.D.:	MW-2
Drilling Co.:	Mayer	Start Date:	10/13/04 11:05 AM
Method:	Air Rotary	Finish Date:	10/13/04 12:15 PM
Water Level:	4 ft. (10/13/04)	Total Depth:	15 Feet
		Well Diameter:	6" borehole 4" PVC casing
		Geologist:	Bill Rankin

Depth (feet)	Well Construction	Lithology	Depth (feet)
	Ground Surface		
	Cement Grout to 4 ft.	Water @ 4 feet	
5	4" Solid PVC	Orange/brown clayey LOAM	5
10			10
	Annular Sand Pack		
15	4" Screened PVC		15
20			20
25			25
30			30
35		F:\OP\0474SHEE\[WELLLOGS.XLS]MW-1	35

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WELL CONSTRUCTION SUMMARY

Project:	Sheeder	Well I.D.:	MW-3
Drilling Co.:	Mayer	Start Date:	10/13/04 9:00 AM
Method:	Air Rotary	Finish Date:	10/13/04 10:30 AM
Water Level:	45.85 ft. (10/27/04)	Total Depth:	120 Feet
		Well Diameter:	6" borehole 4" PVC casing
		Geologist:	Bill Rankin

Depth (feet)	Well Construction	Lithology	Depth (feet)
	Ground Surface		
10	Cement Grout; 4" Solid PVC	Overburden - brown clayey LOAM	10
20		Tan medium SAND	20
30			30
40		Weathered Wissachickson SCHIST	40
50			50
60			60
70	Annular Sand Pack		70
80			80
90	4" Screened PVC		90
100			100
110			110
120			120
130			130
140		P:\OP\0474SHEE\[WELLLOGS.XLS]MW-1	140

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WELL CONSTRUCTION SUMMARY

Project:	Sheeder	Well I.D.:	MW-4
Drilling Co.:	Mayer	Start Date:	10/12/04 14:10:00 PM
Method:	Air Rotary	Finish Date:	10/13/04 17:30:00 PM
Water Level:	48.95 ft. (10/27/04)	Total Depth:	155 Feet
		Well Diameter:	6" borehole 4" PVC casing
		Geologist:	Bill Rankin

Depth (feet)	Well Construction	Lithology	Depth (feet)
10	Ground Surface; 4" Solid PVC; Cement Grout; Sand Annular Pack; 4" Screened PVC	Overburden - dark clayey LOAM	10
20			20
30			30
40			40
50			50
60		White SAND - Weathered Wissachickson SCHIST	60
70			70
80			80
90			90
100		Small amount of WATER @ 100 ft.	100
110			110
120			120
130			130
140			140
150			150
160			160
170			170
180		F:\OP\0474SHEE\[WELLLOGS.XLS]MW-5	180

INTEX
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WELL CONSTRUCTION SUMMARY

Project:	Sheeder	Well I.D.:	MW-5
Drilling Co.:	Mayer	Start Date:	10/12/04 11:20 AM
Method:	Air Rotary	Finish Date:	10/12/04 13:30:00 PM
Water Level:	30.2 ft. (10/27/04)	Total Depth:	100 Feet
		Well Diameter:	6" borehole 4" PVC casing
		Geologist:	Bill Rankin

Depth (feet)	Well Construction	Lithology	Depth (feet)
	Ground Surface		
10	Cement Grout; 4" Solid PVC	Overburden - brown clayey LOAM	10
20			20
30			30
40		White SAND - Weathered Wissachickson SCHIST	40
50			50
60			60
70	Annular Sand Pack	Water @ 62 ft. - 12-12 gpm	70
80			80
90	4" Screened PVC		90
100			100
110			110
120			120
130			130
140			140

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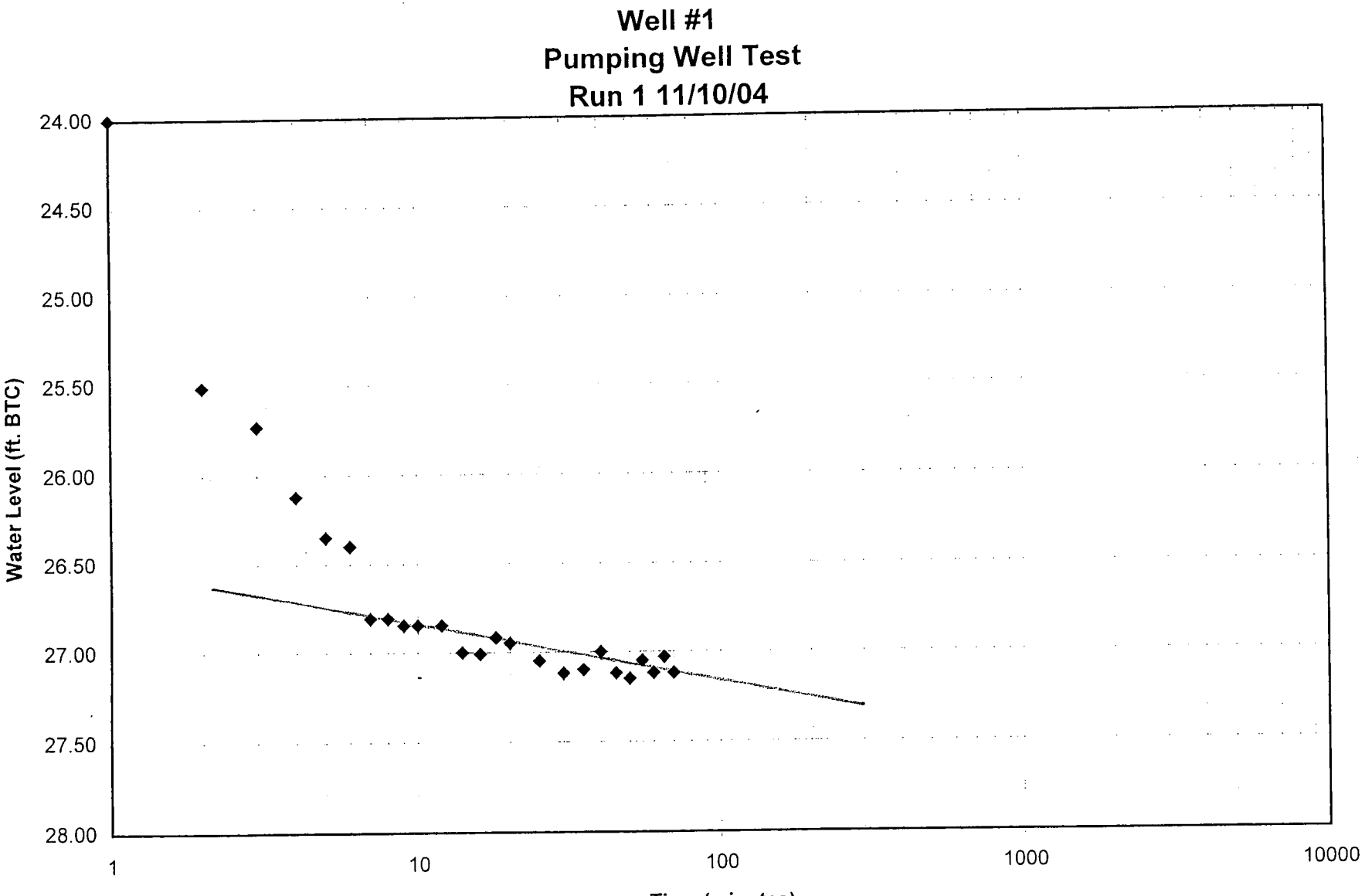
WELL CONSTRUCTION SUMMARY

Project:	Sheeder	Well I.D.:	MW-6
Drilling Co.:	Mayer	Start Date:	12/2/04 9:35 AM
Method:	Air Rotary	Finish Date:	12/2/04 1:00 PM
Water Level:	106.1 ft. at 1:10 PM	Total Depth:	120 Feet
		Well Diameter:	6" borehole 4" PVC casing
		Geologist:	Greg Van Hook

Depth (feet)	Well Construction	Lithology	Depth (feet)
0 - 3	Ground Surface; Portland Cement	Yellow-brown, fine to medium SAND (topsoil)	0-3
3 - 10	4" Solid PVC	Light brown fine SAND - mocaceous (overburden)	3 - 10
20		Reddish brown SAND - Weathered bedrock	20
30			30
40		@ 40 ft. driller indicates "Hard weathered bedrock"	40
50			50
60			60
70		Light reddish brown fine SAND (65-67 ft.)	70
80	#2 W.G. Filter Pack		80
90	4" Screened PVC	Light gray fine SAND	90
100		@ 100 ft., water appears on rods	100
110			110
120		Boring terminated at 121 ft.	120
130		1 to 2 ft. SLOUGH at bottom	130
140		F:\OP\0474SHEE\[WELLLOGS.XLS]MW-6	140

APPENDIX III
Aquifer Test Data



$\Delta S = 0.35$ Ft

$Q = 27$ gpm

$$T = \frac{264\,(27)}{0.35} = 20{,}365 \text{ gpd/Ft}$$

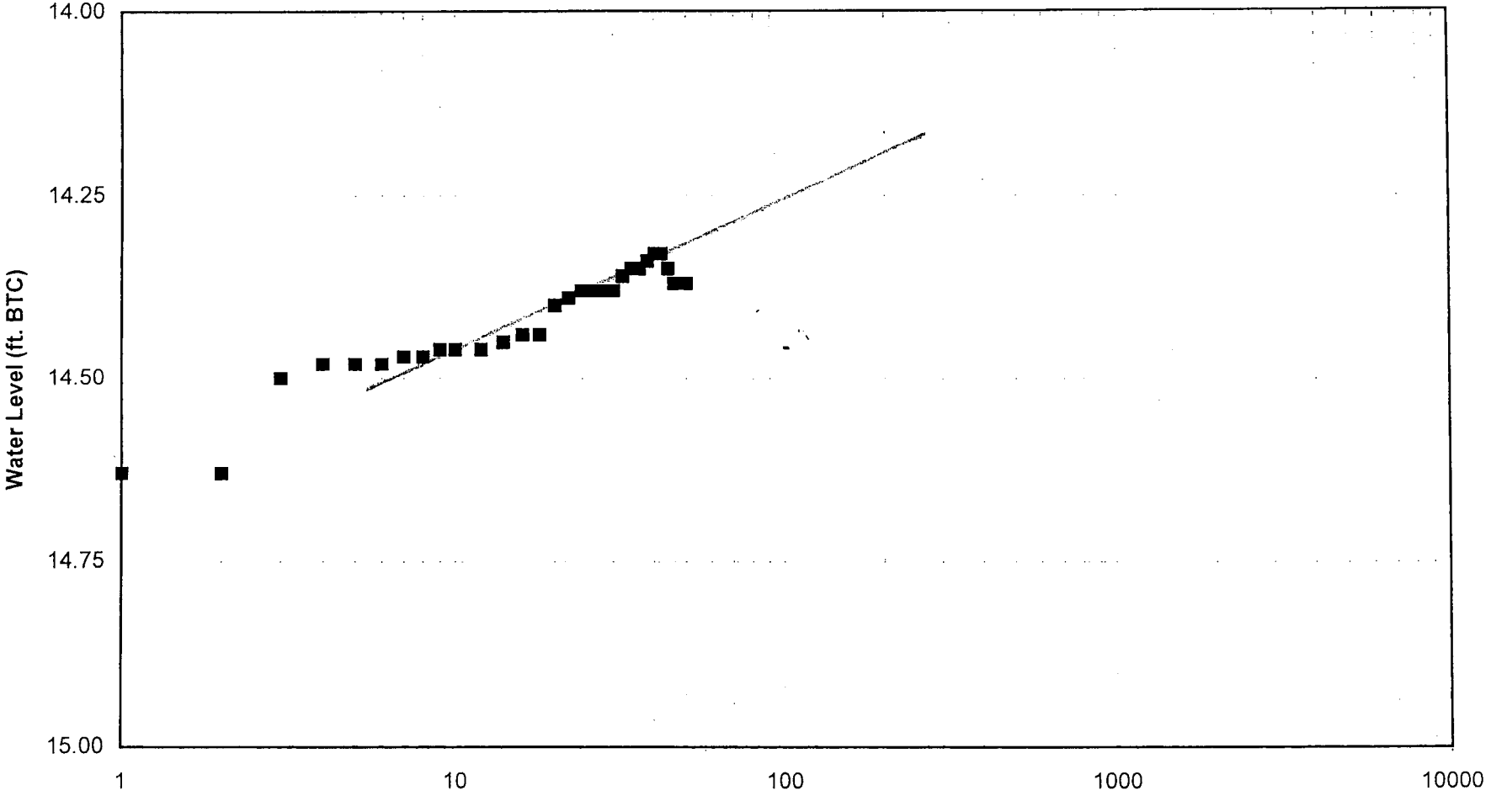
Sheeder Tract
MW-1
Run 1 - 11/10/04

Time (min.)	Water Level (ft. BTC)	Drawdown (feet)	Discharge (GPM)	Elapsed Time	Notes: 11/10/2004
1	24.00				10:55:00 AM
2	25.51				27 gpm
3	25.73				
4	26.12				
5	26.35				
6	26.40				
7	26.81				
8	26.81				
9	26.85				
10	26.85				
12	26.85				
14	27.00				
16	27.01				
18	26.92				
20	26.95				
25	27.05				
30	27.12				
35	27.10				
40	27.00				
45	27.12				
50	27.15				
55	27.05				
60	27.12				
65	27.03				
70	27.12				shut off

Sheeder Tract
Well -1 Recovery Table - Run 1

Time (min.)	Water Level (ft. BTC)	Drawdown (feet)	Discharge (GPM)	Notes: 11/10/2004
1	14.63			12:06:00 PM
2	14.63			
3	14.50			
4	14.48			
5	14.48			
6	14.48			
7	14.47			
8	14.47			
9	14.46			
10	14.46			
12	14.46			
14	14.45			
16	14.44			
18	14.44			
20	14.40			
22	14.39			
24	14.38			
26	14.38			
28	14.38			
30	14.38			
32	14.36			
34	14.35			
36	14.35			
38	14.34			
40	14.33			
42	14.33			
44	14.35			
46	14.37			
48	14.37			
50	14.37			

Well #1
Pumping Well Recovery
Run 1

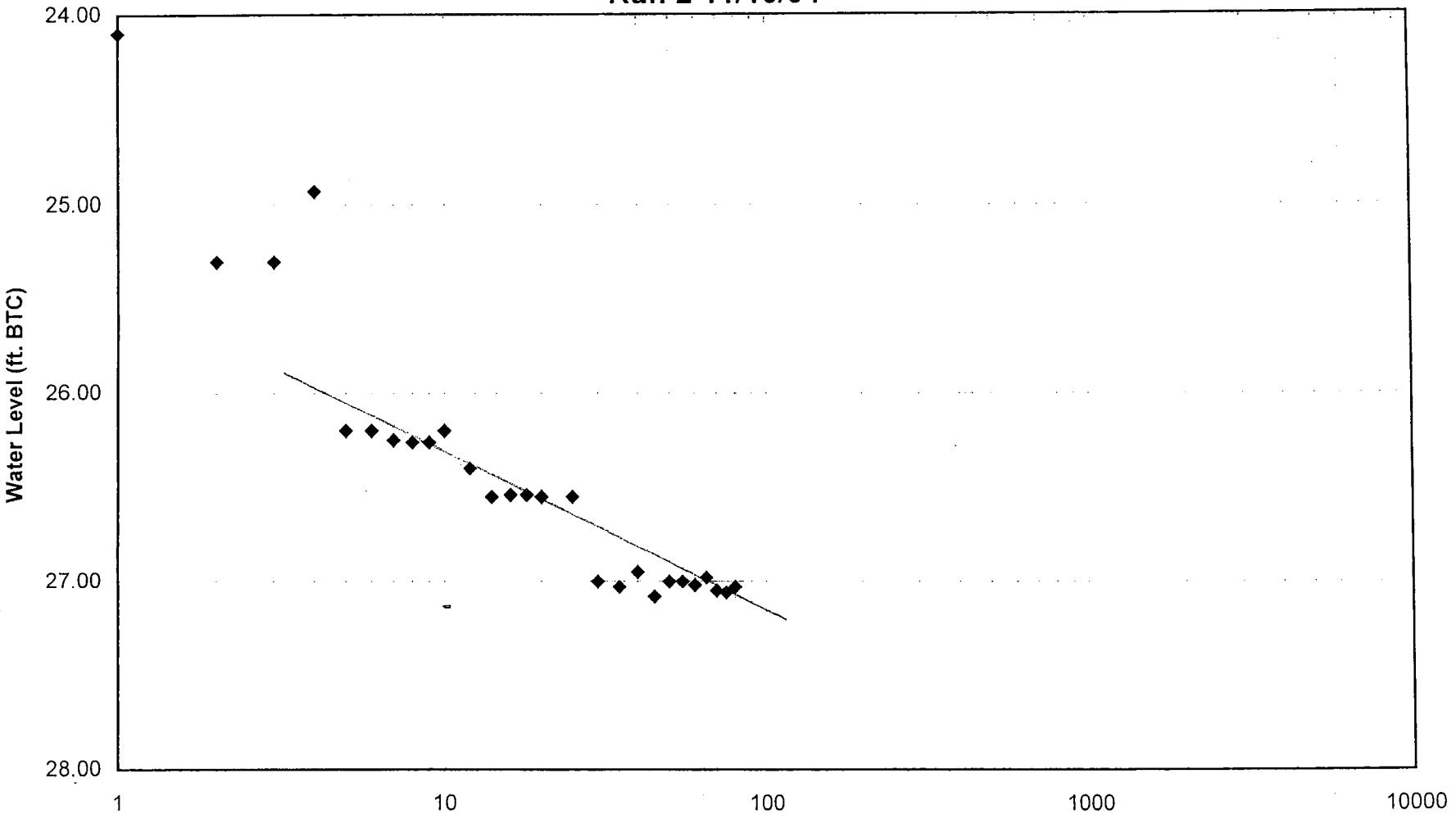


$\Delta s = 0.2$ Ft

$Q = 27$ gpm

$$T = \frac{264(27)}{0.2} = 35{,}640 \text{ gpd/Ft}$$

Well #1
Pumping Well Test
Run 2 11/10/04



$\Delta S = 0.83$ FT

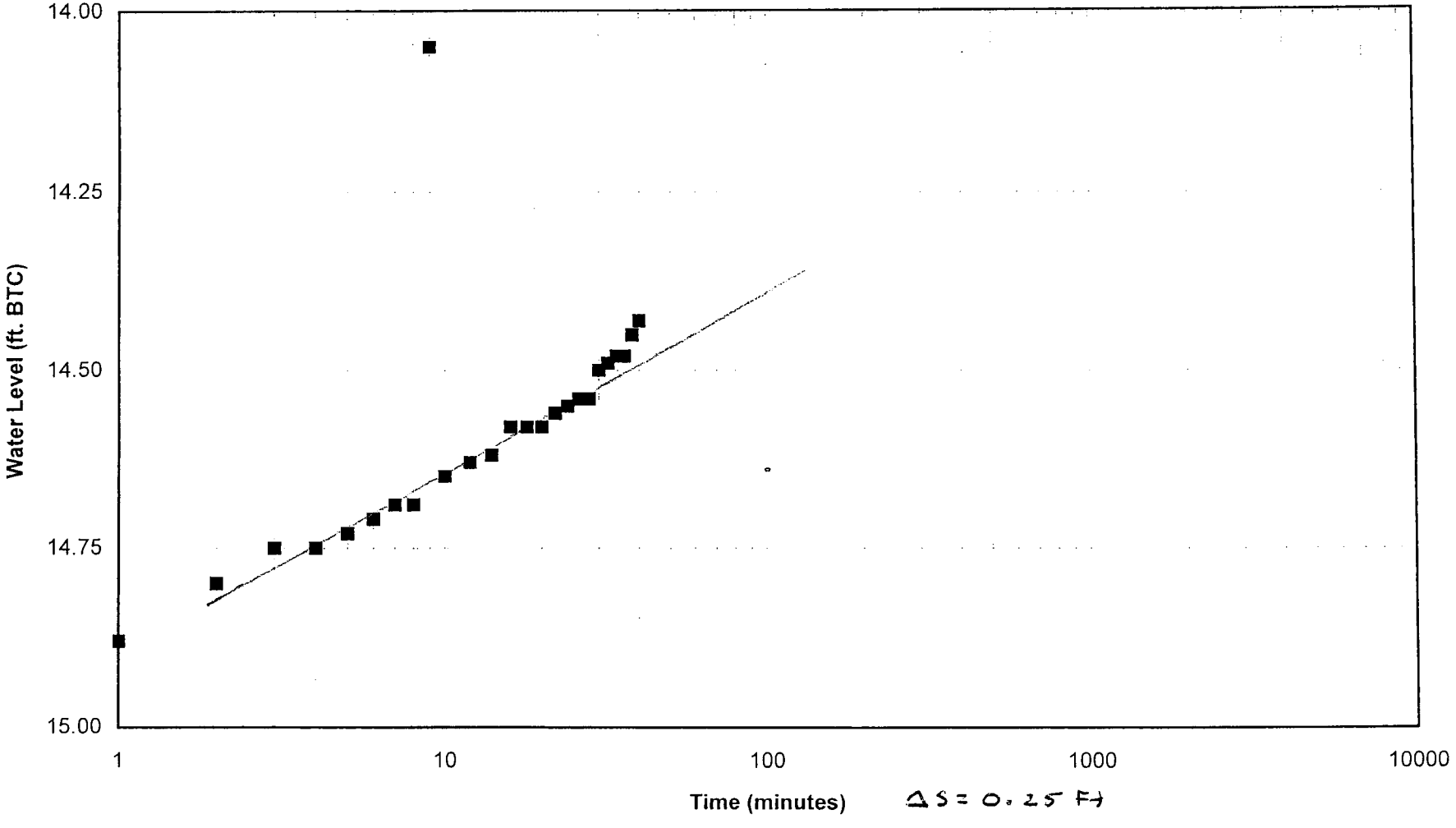
$Q = 27$ gpm

$T = \frac{264\,(27)}{0.83} \approx 8,587$ gpd/FT

Sheeder Tract
MW-1
Run 2 - 11/10/04

Time (min.)	Water Level (ft. BTC)	Drawdown (feet)	Discharge (GPM)	Elapsed Time	Notes: 11/10/2004
0	14.37				12:55:00 PM
1	24.10				27 gpm
2	25.30				
3	25.30				
4	24.93				
5	26.20				
6	26.20				
7	26.25				
8	26.26				
9	26.26				
10	26.20				
12	26.40				
14	26.55				
16	26.54				
18	26.54				
20	26.55				
25	26.55				
30	27.00				
35	27.03				
40	26.95				
45	27.08				
50	27.00				
55	27.00				
60	27.02				
65	26.98				
70	27.05				
75	27.06				
80	27.03				shut off

Well #1
Pumping Well Recovery
Run 2



$\Delta S = 0.25$ Ft

$Q = 27$ gpm

$$T = \frac{264(27)}{0.25} = 28,512 \text{ gpd/Ft}$$

Sheeder Tract
Well -1 Recovery Table - Run 2

Time (min.)	Water Level (ft. BTC)	Drawdown (feet)	Discharge (GPM)	Notes: 11/10/2004
1	14.88			3:15:00 PM
2	14.80			
3	14.75			
4	14.75			
5	14.73			
6	14.71			
7	14.69			
8	14.69			
9	14.05			
10	14.65			
12	14.63			
14	14.62			
16	14.58			
18	14.58			
20	14.58			
22	14.56			
24	14.55			
26	14.54			
28	14.54			
30	14.50			
32	14.49			
34	14.48			
36	14.48			
38	14.45			
40	14.43			

HYDRAULIC CONDUCTIVITY VALUE
DERIVED FROM SLUG TEST

MW-2 Slug Removal				
T_0 (min)	1.3		$K=((r^2)\ln(L/R))/(2LT_0)$	0.0120 feet/min
r (inch)	4	r(feet)=	0.3333	**17.29 feet/day**
R (inch)	6	R(feet)=	0.5000	
L (feet)	11			

Hvorslev Equation:

$K = r^2 \ln (L/R)/2L\ T_0$

Where:

K = Hydraulic Conductivity

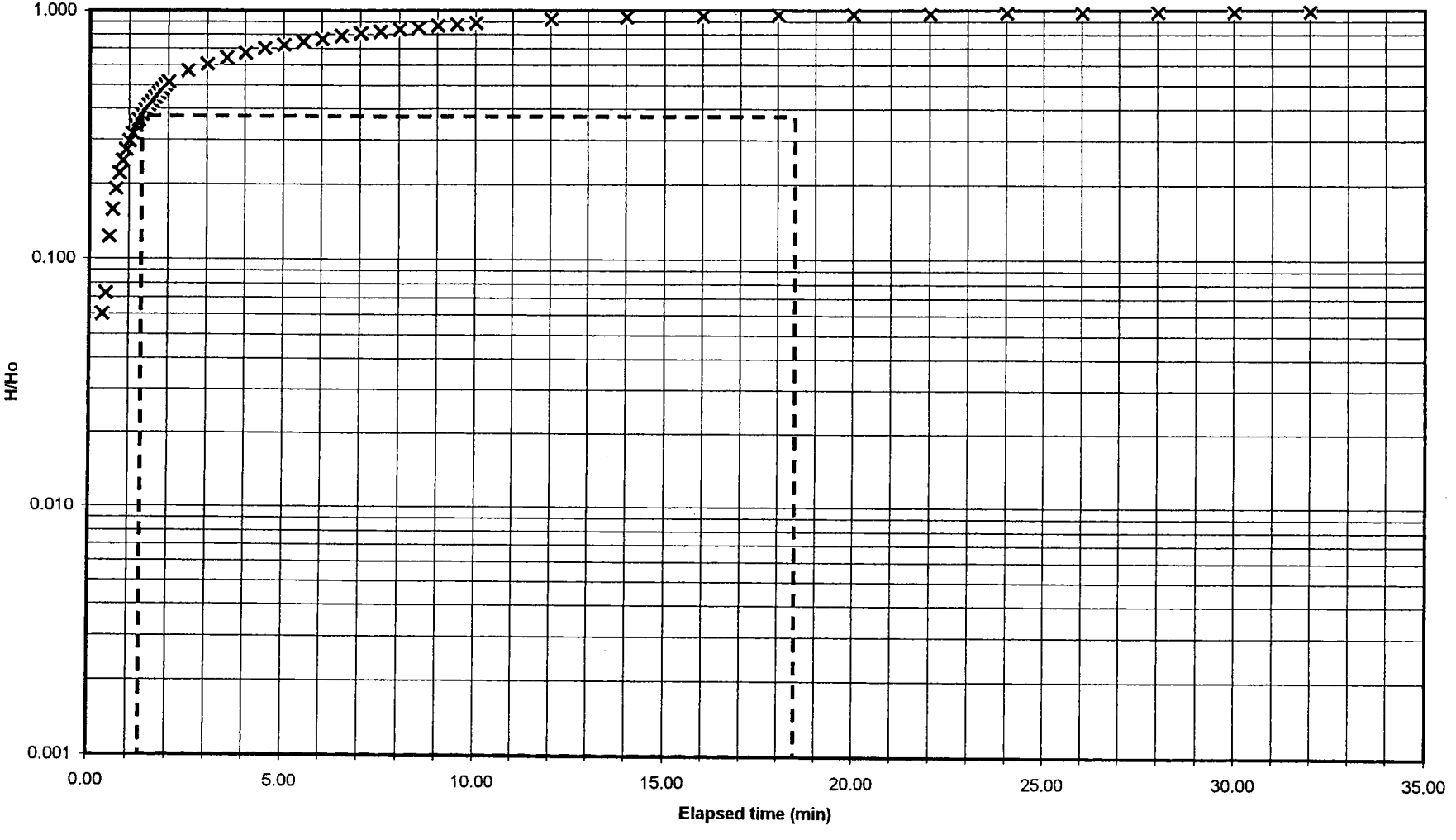
r2 = Well radius

L = Screen length/saturated thickness

R = Radius of influence

T_0 = Lag time (at $h/H_0 = 0.37$) derived from slug tests

Sheeder Tract
MW - 2
Falling Slug Test

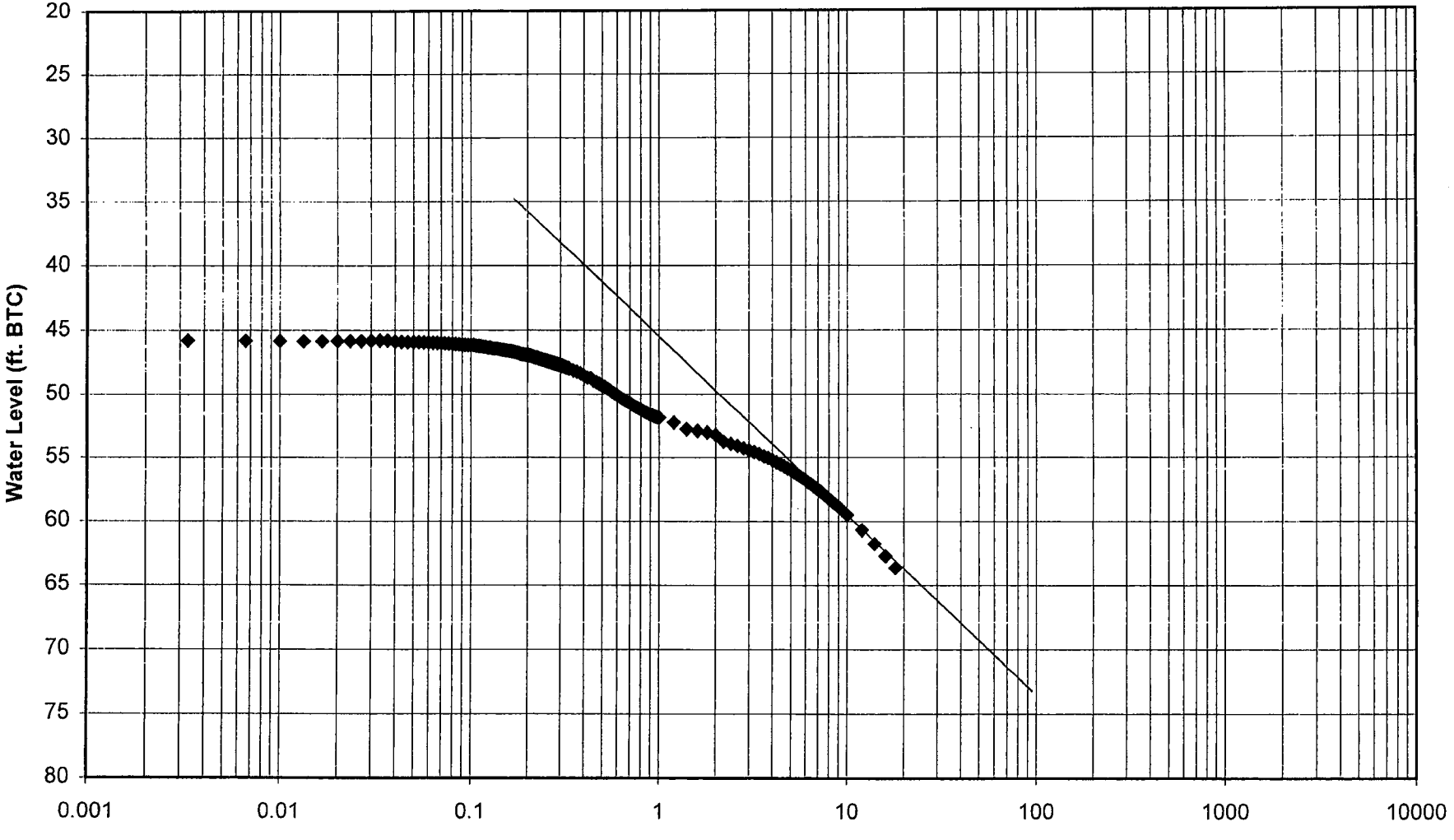


Sheeder Tract

Slug Test Data from Monitoring Well MW-2

MW-2 Slug Injection			
static w.l.	4.000 feet		
time	w.l.	Elaps. T	H/H_0
0.000	0.000	0.000	1.000
0.333	3.760	0.333	0.060
0.417	3.710	0.417	0.073
0.500	3.510	0.500	0.123
0.583	3.370	0.583	0.158
0.667	3.240	0.667	0.190
0.750	3.120	0.750	0.220
0.833	3.010	0.833	0.248
0.917	2.910	0.917	0.273
1.000	2.820	1.000	0.295
1.083	2.730	1.083	0.318
1.167	2.640	1.167	0.340
1.250	2.560	1.250	0.360
1.333	2.490	1.333	0.378
1.417	2.420	1.417	0.395
1.500	2.350	1.500	0.413
1.583	2.300	1.583	0.425
1.667	2.230	1.667	0.443
1.750	2.160	1.750	0.460
1.833	2.090	1.833	0.478
1.917	2.010	1.917	0.498
2.000	1.950	2.000	0.513
2.500	1.720	2.500	0.570
3.000	1.580	3.000	0.605
3.500	1.440	3.500	0.640
4.000	1.320	4.000	0.670
4.500	1.200	4.500	0.700
5.000	1.110	5.000	0.723
5.500	1.020	5.500	0.745
6.000	0.940	6.000	0.765
6.500	0.860	6.500	0.785
7.000	0.780	7.000	0.805
7.500	0.720	7.500	0.820
8.000	0.650	8.000	0.838
8.500	0.600	8.500	0.850
9.000	0.540	9.000	0.865
9.500	0.500	9.500	0.875
10.000	0.460	10.000	0.885
12.000	0.330	12.000	0.918
14.000	0.260	14.000	0.935
16.000	0.220	16.000	0.945
18.000	0.180	18.000	0.955
20.000	0.150	20.000	0.963
22.000	0.130	22.000	0.968
24.000	0.100	24.000	0.975
26.000	0.090	26.000	0.978
28.000	0.080	28.000	0.980
30.000	0.070	30.000	0.983
32.000	0.060	32.000	0.985

Well #3
Pumping Well Step Test



$Q = 6.5$ gpm

$\Delta s = 15$ FT

$T = \frac{264(6.5)}{15} = 114.4$ gpm/FT

Sheeder Tract
MW-3

Time (min.)	Water Level (ft. BTC)	Drawdown (feet)	Discharge (GPM)	Elapsed Time	Notes: 10/21/2004
0	45.824				11:43:11 AM
0.0033	45.804				
0.0066	45.824				
0.01	45.856				
0.0133	45.875				
0.0166	45.869				
0.02	45.85				
0.0233	45.85				
0.0266	45.85				
0.03	45.824				
0.0333	45.804				
0.0366	45.811				
0.04	45.887				
0.0433	45.901				
0.0466	45.926				
0.05	45.932				
0.0533	45.932				
0.0566	45.946				
0.06	45.958				
0.0633	45.978				
0.0666	45.991				
0.07	45.997				
0.0733	46.016				
0.0766	46.035				
0.08	46.055				
0.0833	46.08				
0.0866	46.099				
0.09	46.125				
0.0933	46.151				
0.0966	46.17				
0.1	46.151				
0.1033	46.17				
0.1066	46.209				
0.11	46.234				
0.1133	46.253				
0.1166	46.285				
0.12	46.311				
0.1233	46.382				
0.1266	46.356				
0.13	46.414				
0.1333	46.433				
0.1366	46.427				
0.14	46.472				
0.1433	46.498				
0.1466	46.53				
0.15	46.542				
0.1533	46.574				
0.1566	46.6				
0.16	46.632				

Sheeder Tract
MW-3
Test 2

Time (min.)	Water Level (ft. BTC)	Drawdown (feet)	Discharge (GPM)	Elapsed Time	Notes: 10/21/2004
0.1633	46.639				
0.1666	46.677				
0.17	46.697				
0.1733	46.728				
0.1766	46.748				
0.18	46.786				
0.1833	46.857				
0.1866	46.876				
0.19	46.883				
0.1933	46.921				
0.1966	46.921				
0.2	46.94				
0.2033	46.966				
0.2066	46.992				
0.21	47.023				
0.2133	47.043				
0.2166	47.081				
0.22	47.113				
0.2233	47.139				
0.2266	47.152				
0.23	47.19				
0.2333	47.216				
0.2366	47.235				
0.24	47.268				
0.2433	47.306				
0.2466	47.319				
0.25	47.351				
0.2533	47.37				
0.2566	47.402				
0.26	47.435				
0.2633	47.454				
0.2666	47.479				
0.27	47.505				
0.2733	47.53				
0.2766	47.556				
0.28	47.582				
0.2833	47.607				
0.2866	47.633				
0.29	47.659				
0.2933	47.678				
0.2966	47.704				
0.3	47.736				
0.3033	47.761				
0.3066	47.775				
0.31	47.8				
0.3133	47.832				
0.3166	47.858				
0.32	47.883				

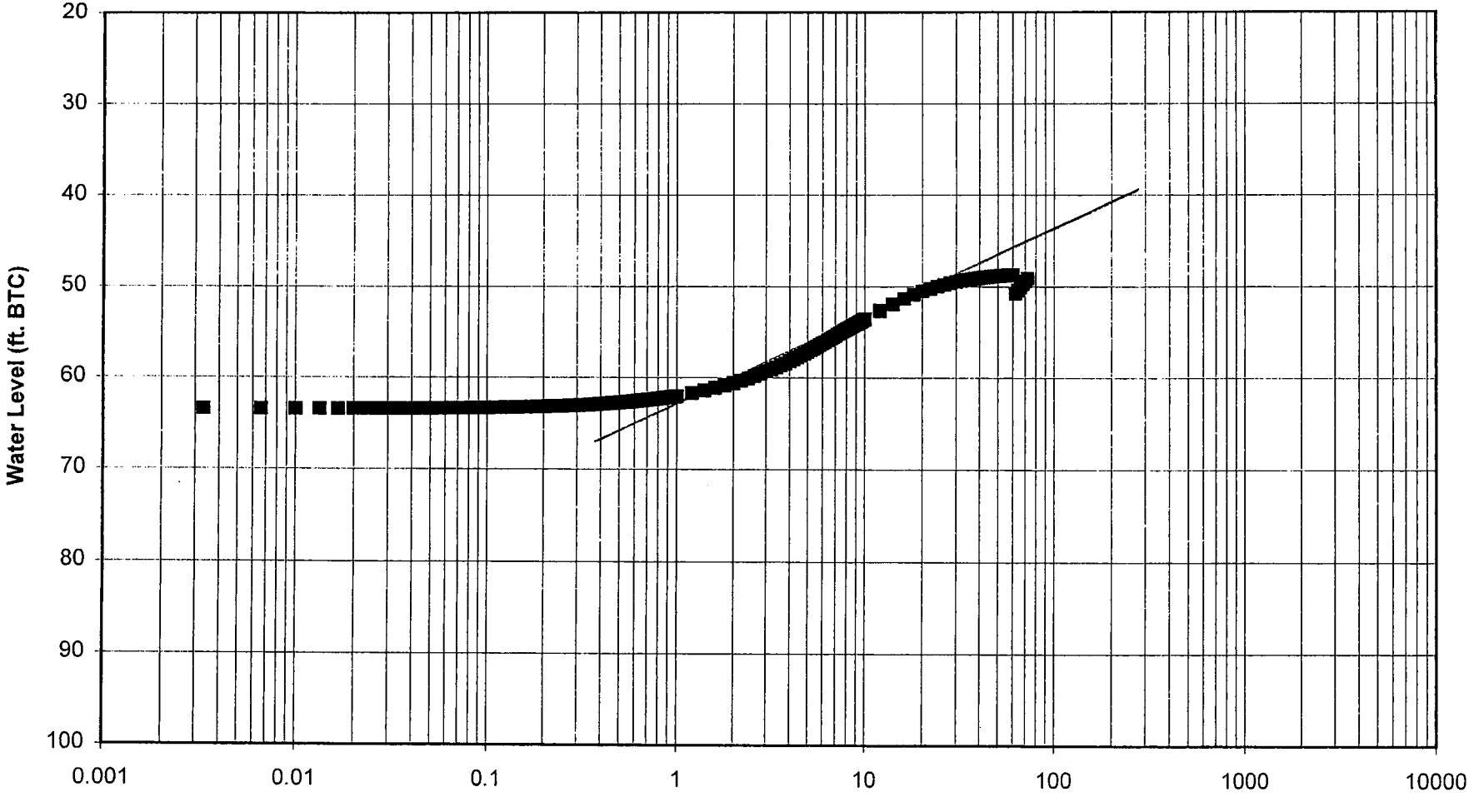
Sheeder Tract
MW-3
Test 2

Time (min.)	Water Level (ft. BTC)	Drawdown (feet)	Discharge (GPM)	Elapsed Time	Notes: 10/21/2004
0.3233	47.909				
0.3266	47.928				
0.33	47.947				
0.3333	47.973				
0.35	48.108				
0.3666	48.224				
0.3833	48.358				
0.4	48.519				
0.4166	48.679				
0.4333	48.711				
0.45	48.929				
0.4666	49.051				
0.4833	49.173				
0.5	49.314				
0.5166	49.43				
0.5333	49.564				
0.55	49.699				
0.5666	49.834				
0.5833	49.955				
0.6	50.071				
0.6166	50.205				
0.6333	50.328				
0.65	50.43				
0.6666	50.533				
0.6833	50.641				
0.7	50.725				
0.7166	50.834				
0.7333	50.93				
0.75	51.014				
0.7666	51.084				
0.7833	51.161				
0.8	51.238				
0.8166	51.308				
0.8333	51.379				
0.85	51.437				
0.8666	51.513				
0.8833	51.578				
0.9	51.642				
0.9166	51.642				
0.9333	51.738				
0.95	51.77				
0.9666	51.809				
0.9833	51.853				
1	51.892				
1.2	52.27				
1.4	52.789				
1.6	52.905				
1.8	53.039				

Sheeder Tract
MW-3
Test 2

Time (min.)	Water Level (ft. BTC)	Drawdown (feet)	Discharge (GPM)	Elapsed Time	Notes: 10/21/2004
2	53.231				
2.2	53.764				
2.4	53.93				
2.6	54.09				
2.8	54.263				
3	54.424				
3.2	54.578				
3.4	54.731				
3.6	54.904				
3.8	55.045				
4	55.205				
4.2	55.366				
4.4	55.513				
4.6	55.667				
4.8	55.833				
5	55.993				
5.2	56.153				
5.4	56.307				
5.6	56.461				
5.8	56.621				
6	56.768				
6.2	56.929				
6.4	57.057				
6.6	57.217				
6.8	57.358				
7	57.505				
7.2	57.639				
7.4	57.78				
7.6	57.915				
7.8	58.056				
8	58.203				
8.2	58.337				
8.4	58.478				
8.6	58.606				
8.8	58.747				
9	58.869				
9.2	58.99				
9.4	59.119				
9.6	59.234				
9.8	59.375				
10	59.496				
12	60.674				
14	61.736				
16	62.703				
18	63.637				

Well #3
Pumping Well Recovery



$Q = 6.2$ gpm

$\Delta s = 9$ Ft

$$T = \frac{264(6.5)}{9} = 190 \text{ gpd/Ft}$$

Sheeder Tract
Recovery Table Well-3

Time (min.)	Water Level (ft. BTC)	Drawdown (feet)	Discharge (GPM)	Notes: 10/21/2004
0.1633	63.214			
0.1666	63.208			
0.17	63.202			
0.1733	63.195			
0.1766	63.195			
0.18	63.189			
0.1833	63.182			
0.1866	63.176			
0.19	63.176			
0.1933	63.169			
0.1966	63.163			
0.2	63.157			
0.2033	63.157			
0.2066	63.15			
0.21	63.144			
0.2133	63.138			
0.2166	63.138			
0.22	63.131			
0.2233	63.125			
0.2266	63.118			
0.23	63.118			
0.2333	63.112			
0.2366	63.105			
0.24	63.099			
0.2433	63.099			
0.2466	63.093			
0.25	63.086			
0.2533	63.08			
0.2566	63.08			
0.26	63.073			
0.2633	63.067			
0.2666	63.067			
0.27	63.061			
0.2733	63.054			
0.2766	63.048			
0.28	63.048			
0.2833	63.042			
0.2866	63.035			
0.29	63.029			
0.2933	63.029			
0.2966	63.023			
0.3	63.016			
0.3033	63.01			
0.3066	63.01			
0.31	63.003			
0.3133	62.997			
0.3166	62.997			
0.32	62.99			
0.3233	62.984			

Sheeder Tract
Recovery Table Well-3

Time (min.)	Water Level (ft. BTC)	Drawdown (feet)	Discharge (GPM)	Notes: 10/21/2004
0.3266	62.978			
0.33	62.978			
0.3333	62.971			
0.35	62.946			
0.3666	62.92			
0.3833	62.895			
0.4	62.869			
0.4166	62.843			
0.4333	62.818			
0.45	62.792			
0.4666	62.766			
0.4833	62.741			
0.5	62.716			
0.5166	62.69			
0.5333	62.664			
0.55	62.645			
0.5666	62.619			
0.5833	62.594			
0.6	62.568			
0.6166	62.543			
0.6333	62.517			
0.65	62.492			
0.6666	62.472			
0.6833	62.447			
0.7	62.421			
0.7166	62.396			
0.7333	62.376			
0.75	62.351			
0.7666	62.325			
0.7833	62.3			
0.8	62.28			
0.8166	62.255			
0.8333	62.235			
0.85	62.21			
0.8666	62.184			
0.8833	62.165			
0.9	62.14			
0.9166	62.12			
0.9333	62.095			
0.95	62.076			
0.9666	62.05			
0.9833	62.031			
1	62.005			
1.2	61.653			
1.4	61.378			
1.6	61.122			
1.8	60.853			
2	60.584			
2.2	60.315			

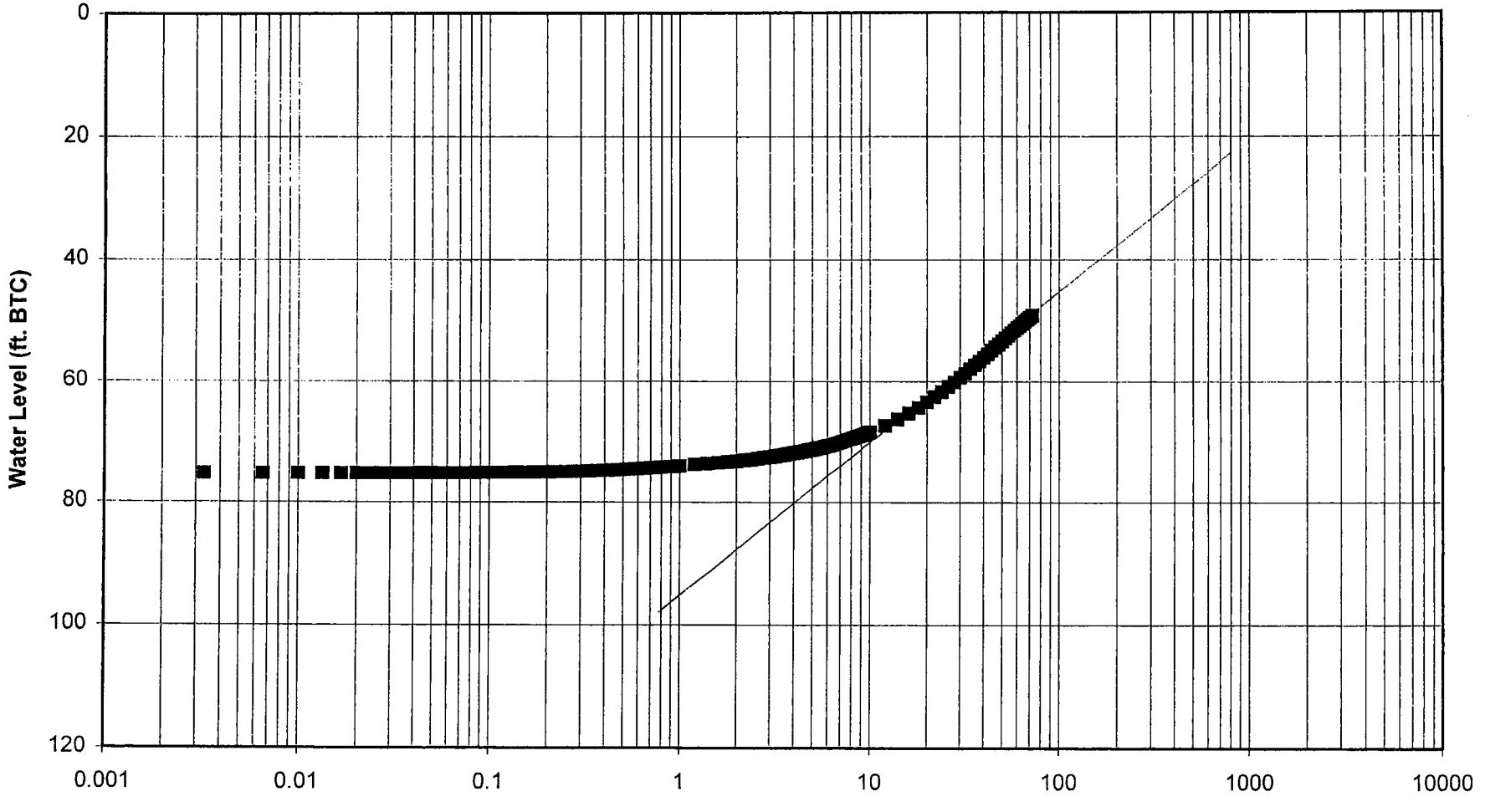
Sheeder Tract
Recovery Table Well-3

Time (min.)	Water Level (ft. BTC)	Drawdown (feet)	Discharge (GPM)	Notes: 10/21/2004
2.4	60.06			
2.6	59.81			
2.8	59.567			
3	59.33			
3.2	59.099			
3.4	58.875			
3.6	58.651			
3.8	58.427			
4	58.209			
4.2	57.991			
4.4	57.774			
4.6	57.569			
4.8	57.364			
5	57.166			
5.2	56.967			
5.4	56.775			
5.6	56.589			
5.8	56.403			
6	56.224			
6.2	56.051			
6.4	55.885			
6.6	55.718			
6.8	55.551			
7	55.398			
7.2	55.244			
7.4	55.103			
7.6	54.955			
7.8	54.821			
8	54.693			
8.2	54.565			
8.4	54.443			
8.6	54.321			
8.8	54.206			
9	54.09			
9.2	53.982			
9.4	53.872			
9.6	53.77			
9.8	53.667			
10	53.565			
12	52.661			
14	51.93			
16	51.347			
18	50.885			
20	50.52			
22	50.238			
24	49.981			
26	49.782			
28	49.615			
30	49.481			

Sheeder Tract
Recovery Table Well-3

Time (min.)	Water Level (ft. BTC)	Drawdown (feet)	Discharge (GPM)	Notes: 10/21/2004
32	49.359			
34	49.263			
36	49.185			
38	49.109			
40	49.051			
42	49			
44	48.955			
46	48.91			
48	48.878			
50	48.846			
52	48.813			
54	48.788			
56	48.769			
58	48.743			
60	48.737			
62	50.779			
64	50.413			
66	50.06			
68	49.714			
70	49.406			
72	49.117			

Well #4
Pumping Well Recovery



$\Delta S = 22$ Ft

$Q = 3$ gpm

$\frac{264\ (3)}{22} = 36$ gpm/Ft

Sheeder Tract
Recovery Table Well-4

Time (min.)	Water Level (ft. BTC)	Drawdown (feet)	Discharge (GPM)	Notes: 10/20/2004
0	75.286			2:55:39 PM
0.0033	75.28			
0.0066	75.28			
0.01	75.273			
0.0133	75.273			
0.0166	75.267			
0.02	75.26			
0.0233	75.26			
0.0266	75.254			
0.03	75.254			
0.0333	75.248			
0.0366	75.248			
0.04	75.241			
0.0433	75.235			
0.0466	75.235			
0.05	75.228			
0.0533	75.228			
0.0566	75.222			
0.06	75.222			
0.0633	75.216			
0.0666	75.216			
0.07	75.209			
0.0733	75.209			
0.0766	75.203			
0.08	75.203			
0.0833	75.196			
0.0866	75.19			
0.09	75.19			
0.0933	75.184			
0.0966	75.184			
0.1	75.177			
0.1033	75.177			
0.1066	75.171			
0.11	75.171			
0.1133	75.171			
0.1166	75.165			
0.12	75.158			
0.1233	75.158			
0.1266	75.152			
0.13	75.152			
0.1333	75.146			
0.1366	75.146			
0.14	75.139			
0.1433	75.139			
0.1466	75.133			
0.15	75.133			
0.1533	75.126			
0.1566	75.12			
0.16	75.12			

Sheeder Tract
Recovery Table Well-4

Time (min.)	Water Level (ft. BTC)	Drawdown (feet)	Discharge (GPM)	Notes: 10/20/2004
0.1633	75.113			
0.1666	75.107			
0.17	75.107			
0.1733	75.101			
0.1766	75.101			
0.18	75.094			
0.1833	75.088			
0.1866	75.088			
0.19	75.082			
0.1933	75.082			
0.1966	75.075			
0.2	75.069			
0.2033	75.069			
0.2066	75.062			
0.21	75.062			
0.2133	75.056			
0.2166	75.05			
0.22	75.05			
0.2233	75.043			
0.2266	75.037			
0.23	75.037			
0.2333	75.031			
0.2366	75.031			
0.24	75.024			
0.2433	75.017			
0.2466	75.017			
0.25	75.011			
0.2533	75.005			
0.2566	75.005			
0.26	74.999			
0.2633	74.999			
0.2666	74.992			
0.27	74.992			
0.2733	74.986			
0.2766	74.979			
0.28	74.979			
0.2833	74.973			
0.2866	74.973			
0.29	74.967			
0.2933	74.96			
0.2966	74.96			
0.3	74.954			
0.3033	74.954			
0.3066	74.947			
0.31	74.947			
0.3133	74.941			
0.3166	74.935			
0.32	74.935			
0.3233	74.928			

Sheeder Tract
Recovery Table Well-4

Time (min.)	Water Level (ft. BTC)	Drawdown (feet)	Discharge (GPM)	Notes: 10/20/2004
0.3266	74.928			
0.33	74.922			
0.3333	74.915			
0.35	74.896			
0.3666	74.877			
0.3833	74.852			
0.4	74.832			
0.4166	74.807			
0.4333	74.788			
0.45	74.762			
0.4666	74.743			
0.4833	74.717			
0.5	74.698			
0.5166	74.673			
0.5333	74.647			
0.55	74.628			
0.5666	74.603			
0.5833	74.583			
0.6	74.558			
0.6166	74.539			
0.6333	74.513			
0.65	74.488			
0.6666	74.468			
0.6833	74.443			
0.7	74.417			
0.7166	74.398			
0.7333	74.379			
0.75	74.36			
0.7666	74.34			
0.7833	74.322			
0.8	74.302			
0.8166	74.29			
0.8333	74.27			
0.85	74.251			
0.8666	74.238			
0.8833	74.219			
0.9	74.206			
0.9166	74.187			
0.9333	74.175			
0.95	74.155			
0.9666	74.136			
0.9833	74.123			
1	74.104			
1.2	73.836			
1.4	73.657			
1.6	73.51			
1.8	73.369			
2	73.242			
2.2	73.108			

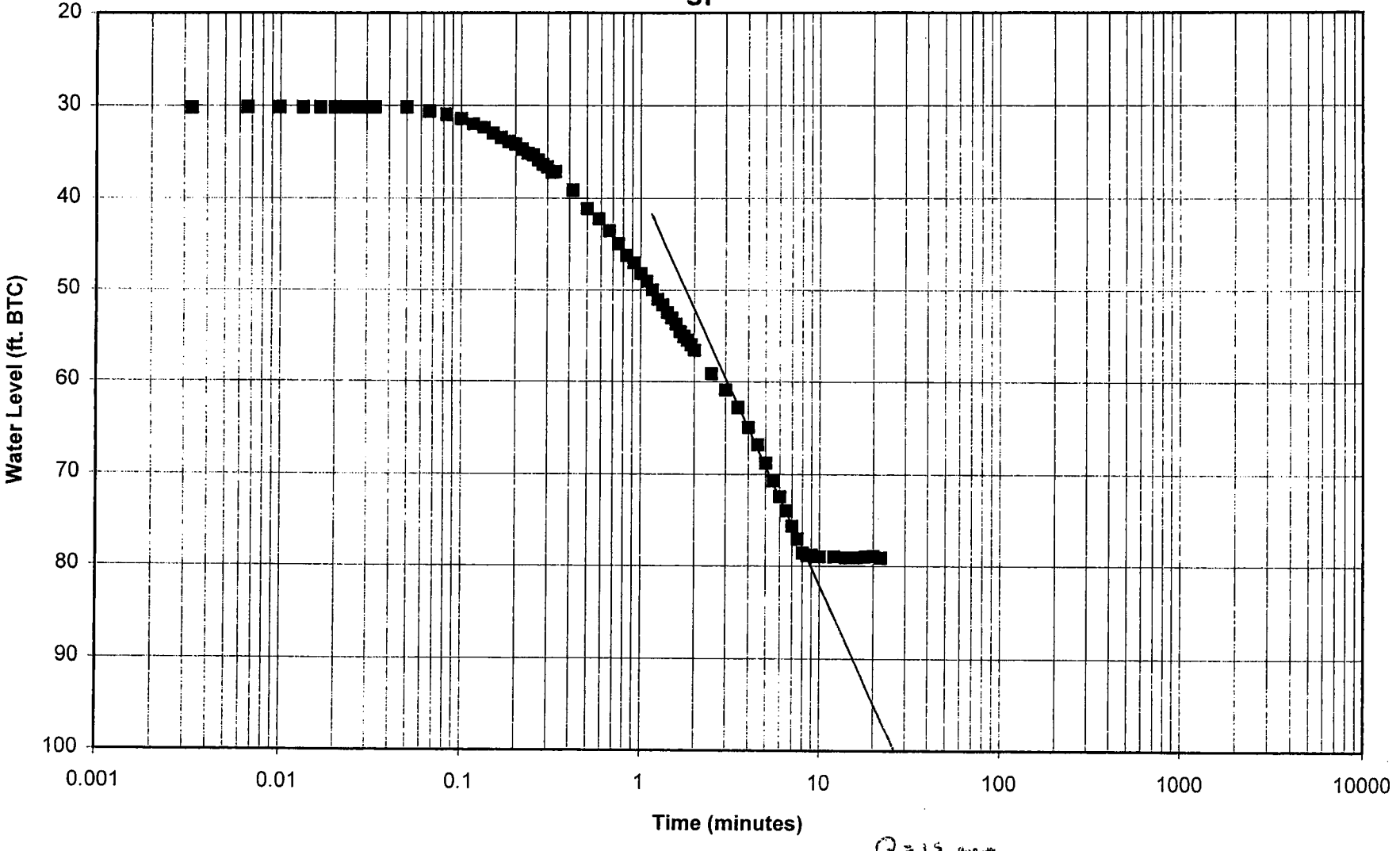
Sheeder Tract
Recovery Table Well-4

Time (min.)	Water Level (ft. BTC)	Drawdown (feet)	Discharge (GPM)	Notes: 10/20/2004
2.4	72.973			
2.6	72.833			
2.8	72.699			
3	72.571			
3.2	72.443			
3.4	72.315			
3.6	72.187			
3.8	72.059			
4	71.938			
4.2	71.81			
4.4	71.689			
4.6	71.561			
4.8	71.439			
5	71.325			
5.2	71.203			
5.4	71.088			
5.6	70.967			
5.8	70.845			
6	70.723			
6.2	70.609			
6.4	70.487			
6.6	70.365			
6.8	70.251			
7	70.129			
7.2	70.014			
7.4	69.899			
7.6	69.784			
7.8	69.669			
8	69.554			
8.2	69.438			
8.4	69.33			
8.6	69.221			
8.8	69.106			
9	68.997			
9.2	68.882			
9.4	68.773			
9.6	68.665			
9.8	68.549			
10	68.441			
12	67.347			
14	66.317			
16	65.319			
18	64.384			
20	63.476			
22	62.598			
24	61.76			
26	60.927			
28	60.139			
30	59.384			

Sheeder Tract
Recovery Table Well-4

Time (min.)	Water Level (ft. BTC)	Drawdown (feet)	Discharge (GPM)	Notes: 10/20/2004
32	58.678			
34	57.948			
36	57.275			
38	56.628			
40	56.032			
42	55.442			
44	54.871			
46	54.326			
48	53.82			
50	53.307			
52	52.832			
54	52.415			
56	51.978			
58	51.574			
60	51.17			
62	50.779			
64	50.413			
66	50.06			
68	49.714			
70	49.406			
72	49.117			

Well #5
Pumping Well Step Test
15 gpm



Q = 15 gpm

Δs = 40 Ft

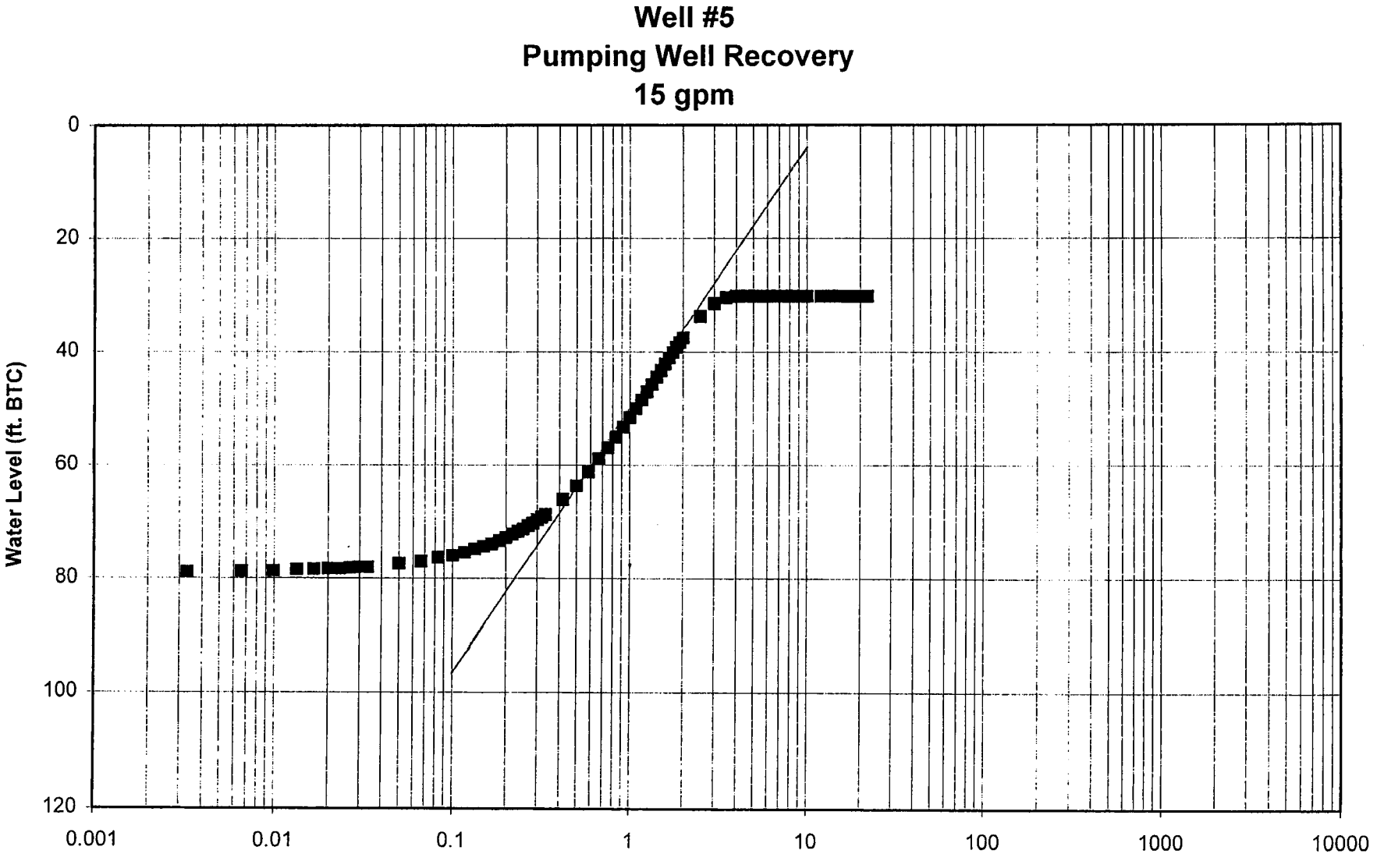
$T = \frac{264\ (15)}{40} = 99\ gpd/Ft$

Sheeder Tract
MW-5

Time (min.)	Water Level (ft. BTC)	Drawdown (feet)	Discharge (GPM)	Elapsed Time	Notes: 10/22/2004
0	30.68				11:18:00 AM
0.0033	30.23				15 gpm
0.0066	30.2				
0.0099	30.2				
0.0133	30.2				
0.0166	30.2				
0.02	30.2				
0.0233	30.2				
0.0266	30.2				
0.03	30.2				
0.0333	30.2				
0.05	30.2				
0.0666	30.63				
0.0833	30.99				
0.1	31.47				
0.1166	32.02				
0.1333	32.43				
0.15	33.03				
0.1666	33.53				
0.1833	33.99				
0.2	34.23				
0.2166	34.77				
0.2333	35.23				
0.25	35.43				
0.2666	35.96				
0.2833	36.43				
0.3	36.72				
0.3166	37.26				
0.3333	37.22				
0.4167	39.18				
0.5	41.17				
0.5833	42.26				
0.6667	43.54				
0.75	44.95				
0.8333	46.18				
0.9167	46.99				
1	48.18				
1.0833	49.05				
1.1667	49.97				
1.25	51				
1.3333	51.61				
1.4166	52.46				
1.5	53.05				
1.5833	53.71				
1.6667	54.52				

Sheeder Tract
MW-5
Test 1

Time (min.)	Water Level (ft. BTC)	Drawdown (feet)	Discharge (GPM)	Elapsed Time	Notes: 10/22/2004
1.75	55.08				
1.8333	55.46				
1.9167	55.96				
2	56.56				
2.5	59.13				
3	60.92				
3.5	62.79				
4	64.96				
4.5	66.81				
5	68.81				
5.5	70.68				
6	72.47				
6.5	74.01				
7	75.69				
7.5	77.11				
8	78.59				
8.5	78.86				
9	78.82				
9.5	78.99				
10	78.98				
12	78.98				
14	79.08				
16	79.1				
18	78.99				
20	78.93				
22	79.13				



$\Delta s = 45$ ft

$Q = 15$ gpm

$T = \frac{264\,(15)}{45} = 88$ gpd/ft

Sheeder Tract
Recovery Table Well-5
15 gpm

Time (min.)	Water Level (ft. BTC)	Drawdown (feet)	Discharge (GPM)	Notes: 10/22/2004
0	78.78			11:42:00 AM
0.0033	78.87			
0.0066	78.73			
0.0099	78.71			
0.0133	78.47			
0.0166	78.4			
0.02	78.3			
0.0233	78.27			
0.0266	78.11			
0.03	78.02			
0.0333	78.02			
0.05	77.37			
0.0666	76.93			
0.0833	76.25			
0.1	75.88			
0.1166	75.34			
0.1333	74.78			
0.15	74.26			
0.1666	73.84			
0.1833	73.22			
0.2	72.66			
0.2166	72.11			
0.2333	71.58			
0.25	71.15			
0.2666	70.59			
0.2833	70.17			
0.3	69.6			
0.3166	69.09			
0.3333	68.6			
0.4167	65.99			
0.5	63.58			
0.5833	61.1			
0.6667	58.82			
0.75	56.92			
0.8333	55.05			
0.9167	53.27			
1	51.59			
1.0833	49.99			
1.1667	48.48			
1.25	47.07			
1.3333	45.74			
1.4166	44.49			
1.5	43.31			
1.5833	42.19			
1.6667	41.14			
1.75	40.15			
1.8333	39.22			
1.9167	38.36			
2	37.56			

Sheeder Tract
Recovery Table Well-5
15 gpm

Time (min.)	Water Level (ft. BTC)	Drawdown (feet)	Discharge (GPM)	Notes: 10/22/2004
2.5	33.73			
3	31.56			
3.5	30.47			
4	30.2			
4.5	30.2			
5	30.2			
5.5	30.2			
6	30.2			
6.5	30.2			
7	30.2			
7.5	30.2			
8	30.2			
8.5	30.2			
9	30.2			
9.5	30.2			
10	30.2			
12	30.2			
14	30.2			
16	30.2			
18	30.2			
20	30.2			
22	30.2			
24	30.2			

APPENDIX IV
Hydraulic Gradient Calculations

APPENDIX V
Groundwater Mounding Calculations

RECHARGE RATE	=	.01795 FT/DAY
TRANSMISSIVITY	=	1650 SQ.FT/DAY
SPECIFIC YIELD	=	.15
BEGINNING TIME	=	3650 DAYS
FINAL TIME	=	3650 DAYS
TIME INCREMENT	=	3650 DAYS
TIME OF CUT OFF	=	3650 DAYS
BEGINNING DISTANCE	=	0 FT
FINAL DISTANCE	=	400 FT
DISTANCE INCREMENT	=	25 FT
DEPTH	=	16 FT
WIDTH	=	900 FT
LENGTH	=	295 FT
ANGLE	=	0 DEGREES
STREAM DISTANCE	=	375 FEET
MOUND PROFILE		YES
STREAM DISCHARGE		NO

TIME (DAYS)	DISTANCE (FT)	HEIGHT (FT)
3650.000	0.000	0.606
3650.000	25.000	0.590
3650.000	25.000	0.617
3650.000	50.000	0.567
3650.000	50.000	0.622
3650.000	75.000	0.539
3650.000	75.000	0.622
3650.000	100.000	0.504
3650.000	100.000	0.615
3650.000	125.000	0.464
3650.000	125.000	0.603
3650.000	150.000	0.418
3650.000	150.000	0.585
3650.000	175.000	0.369
3650.000	175.000	0.565
3650.000	200.000	0.322
3650.000	200.000	0.547
3650.000	225.000	0.274
3650.000	225.000	0.529
3650.000	250.000	0.228
3650.000	250.000	0.511
3650.000	275.000	0.182
3650.000	275.000	0.495
3650.000	300.000	0.136
3650.000	300.000	0.480
3650.000	325.000	0.091
3650.000	325.000	0.465
3650.000	350.000	0.045
3650.000	350.000	0.451
3650.000	375.000	0.000
3650.000	375.000	0.438
3650.000	400.000	0.425

Spray Areas
1 and 3

RECHARGE RATE	=	.01438 FT/DAY
TRANSMISSIVITY	=	14.9 SQ.FT/DAY
SPECIFIC YIELD	=	.15
BEGINNING TIME	=	3650 DAYS
FINAL TIME	=	3650 DAYS
TIME INCREMENT	=	3650 DAYS
TIME OF CUT OFF	=	3650 DAYS
BEGINNING DISTANCE	=	0 FT
FINAL DISTANCE	=	700 FT
DISTANCE INCREMENT	=	50 FT
DEPTH	=	45 FT
WIDTH	=	250 FT
LENGTH	=	600 FT
ANGLE	=	0 DEGREES
STREAM DISTANCE	=	650 FEET
MOUND PROFILE		YES
STREAM DISCHARGE		NO

TIME (DAYS)	DISTANCE (FT)	HEIGHT (FT)
3650.000	0.000	39.749
3650.000	50.000	39.140
3650.000	50.000	39.749
3650.000	100.000	37.905
3650.000	100.000	39.132
3650.000	150.000	35.995
3650.000	150.000	37.857
3650.000	200.000	33.325
3650.000	200.000	35.846
3650.000	250.000	29.750
3650.000	250.000	32.965
3650.000	300.000	25.054
3650.000	300.000	29.007
3650.000	350.000	20.161
3650.000	350.000	24.906
3650.000	400.000	15.994
3650.000	400.000	21.596
3650.000	450.000	12.325
3650.000	450.000	18.861
3650.000	500.000	8.993
3650.000	500.000	16.555
3650.000	550.000	5.884
3650.000	550.000	14.578
3650.000	600.000	2.909
3650.000	600.000	12.863
3650.000	650.000	0.000
3650.000	650.000	11.364
3650.000	700.000	10.043

Spray Area 2

APPENDIX VI
Laboratory Data Reports

QC Laboratories

Analytical Results

ACCREDITED IN ACCORDANCE WITH nelac

11/08/04 07:19pm

Regarding:

JOHN WALKER
INTEX INC.
6205 EASTON ROAD
PIPERSVILLE, PA 18947

JOHN WALKER
INTEX INC.
6205 EASTON ROAD
PIPERSVILLE, PA 18947

Account No: AW0789, INTEX INC. P.O. No: Inv. No: 638123
Project No: AW0789 WALKER, INTEX INC. PWSID No:

Sample Number	Sample Description	Samp. Date/Time/Temp	Sampled by
L1454645-1	SHEEDER WEST CHESTER MW-1 Received Temp: 37°F Iced (Y/N): Y	10/25/04 03:10pm NA°F	Customer Sampled

Parameter	Method	Result	RLs	Test Date, Time, Analyst
NITRITE (AS N)	EPA 600 Method 300.0	ND mg/l	0.200 mg/l	10/27/04 12:06PM XJY
NITRATE (AS N)	EPA 600 Method 300.0	10.5 mg/l	2.50 mg/l	10/27/04 12:06PM XJY
KJELDAHL NITROGEN	EPA 600 Method 351.2	ND mg/l	1.00 mg/l	11/01/04 11:30AM TLW

Sample Number	Sample Description	Samp. Date/Time/Temp	Sampled by
L1454645-2	MW-2 Received Temp: 37°F Iced (Y/N): Y	10/25/04 03:00pm NA°F	Customer Sampled

Parameter	Method	Result	RLs	Test Date, Time, Analyst
NITRITE (AS N)	EPA 600 Method 300.0	ND mg/l	0.200 mg/l	10/27/04 11:07AM XJY
RATE (AS N)	EPA 600 Method 300.0	4.40 mg/l	0.500 mg/l	10/27/04 11:07AM XJY
LDAHL NITROGEN	EPA 600 Method 351.2	ND mg/l	1.00 mg/l	11/01/04 11:30AM TLW

Sample Number	Sample Description	Samp. Date/Time/Temp	Sampled by
L1454645-3	MW-3 Received Temp: 37°F Iced (Y/N): Y	10/25/04 02:20pm NA°F	Customer Sampled

Parameter	Method	Result	RLs	Test Date, Time, Analyst
NITRITE (AS N)	EPA 600 Method 300.0	ND mg/l	0.200 mg/l	10/27/04 11:22AM XJY
NITRATE (AS N)	EPA 600 Method 300.0	5.97 mg/l	0.500 mg/l	10/27/04 11:22AM XJY
KJELDAHL NITROGEN	EPA 600 Method 351.2	ND mg/l	1.00 mg/l	11/01/04 11:30AM TLW

A result of "ND" indicates the concentration of the analyte tested was either not detected or below the RLs.
Definitions: ND=not detected; NEG=negative; POS=positive; COL=colonies; RLs=laboratory reporting limits; L/A=laboratory accident; TNTC=too numerous to count
A result marked with "DRY" indicates that the result was calculated and reported on a dry weight basis.
All analysis, except field tests are conducted in Southampton, PA unless otherwise identified.
The test"pH lab"is analyzed upon receipt at the laboratory, the result will not be suitable for regulatory purposes.
Actual times of analysis for parameters reported <24 hrs are available upon request. All testing is completed within the required holding time unless otherwise noted..
QC's lab certification ID's are: Southampton (NELAP) PADEP 09-131,NJDEP PA166,Bioassay PA034.NON-NELAP labs: Wind Gap-NJ PA001, Alltest-NJ 02015,Vineland-NJ 06005;PA 68-580.
All samples are collected as "grab" samples unless otherwise identified.

Serial Number: 493850

Thomas J. Hines, President

1205 Industrial Blvd., P.O. Box 514, Southampton, PA 18966-0514 Phone: 215-355-3900 Fax: 215-355-7231

QC Laboratories

Analytical Results

ACCREDITED IN ACCORDANCE WITH nelac
11/08/04 07:19pm

Account No: AW0789, INTEX INC.
Project No: AW0789 WALKER, INTEX INC.

P.O. No:
PWSID No:

Inv. No: 638123

Sample Number	Sample Description	Samp. Date/Time/Temp	Sampled by
L1454645-4	MW-4 Received Temp: 37°F Iced (Y/N): Y	10/25/04 02:12pm NA°F	Customer Sampled

Parameter	Method	Result	RLs	Test Date, Time, Analyst
NITRITE (AS N)	EPA 600 Method 300.0	ND mg/l	0.200 mg/l	10/27/04 11:37AM XJY
NITRATE (AS N)	EPA 600 Method 300.0	1.74 mg/l	0.500 mg/l	10/27/04 11:37AM XJY
KJELDAHL NITROGEN	EPA 600 Method 351.2	ND mg/l	1.00 mg/l	11/03/04 11:30AM TLW

Sample Number	Sample Description	Samp. Date/Time/Temp	Sampled by
L1454645-5	MW-5 Received Temp: 37°F Iced (Y/N): Y	10/25/04 02:00pm NA°F	Customer Sampled

Parameter	Method	Result	RLs	Test Date, Time, Analyst
NITRITE (AS N)	EPA 600 Method 300.0	ND mg/l	0.200 mg/l	10/27/04 01:05PM XJY
NITRATE (AS N)	EPA 600 Method 300.0	15.1 mg/l	2.50 mg/l	10/27/04 01:05PM XJY
KJELDAHL NITROGEN	EPA 600 Method 351.2	ND mg/l	1.00 mg/l	11/03/04 11:30AM TLW

A result of "ND" indicates the concentration of the analyte tested was either not detected or below the RLs.
Definitions: ND=not detected; NEG=negative; POS=positive; COL=colonies; RLs=laboratory reporting limits; L/A=laboratory accident; TNTC=too numerous to count
A result marked with "DRY" indicates that the result was calculated and reported on a dry weight basis.
All analysis, except field tests are conducted in Southampton, PA unless otherwise identified.
The test"pH lab"is analyzed upon receipt at the laboratory, the result will not be suitable for regulatory purposes.
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All samples are collected as "grab" samples unless otherwise identified.

Serial Number: 493850

Thomas J. Hines, President

1205 Industrial Blvd., P.O. Box 514, Southampton, PA 18966-0514 Phone: 215-355-3900 Fax: 215-355-7231

CHAIN OF CUSTODY

Page 1 of 1

QC Laboratories
1205 Industrial Blvd.
Southampton, PA 18966-0514
Phone: 215-355-3900
Fax: 215-355-7231

Lab LIMS No: L1454645

Client/Acct. No. INTEK ENV. Group INC
Address 6205 EASTON RD P
City/State/Zip Pipersville PA 18947
Phone/Fax 215 766 7230 / 215 766 9730
Client Contact John WALKER

Bill to/Report to: (if different)

Sampling Site Address: (if different) SHEEDER WEST CHESTER PA

P.O. No.

QC Contact

LAB USE ONLY:

___ Ascorbic/HCl Vials # ___ HCl Vials
___ $Na_2S_2O_3$
___ Na OH/Zn acetate pH
___ HNO_3 pH
5 H_2SO_4 pH <2 pH
___ NaOH pH
5 Unpreserved 5pH
___ Hcl pH
___ Temp control ID#

MATRIX CODES

DW: DRINKING WATER
GW: GROUND WATER
WW: WASTEWATER
SO: SOIL
SL: SLUDGE
OIL: OIL
SOL: NON SOIL SOLID
MI: MISCELLANEOUS
X: OTHER

Field pH, Temp (C or F), DO, Cl_2, S. Cond. etc.

PROJECT / FIELD ID	Collection Date	Collection Military Time	GRAB	COMP	Matrix Code	Number of Containers Total	H_2SO_4	HCl	Vials	HNO_3	NaOH	ZnAc	Unpres	Bact
MW-1	10/25/04	15:10	X		GW	2	X						X	
MW-2		15:00	X			2	X						X	
MW-3		14:20	X			2	X						X	
MW-4		14:12	X			2	X						X	
MW-5		14:00	X			2	X						X	

ANALYSIS REQUESTED

Nitrates, K Nitrogen NITRITES

SAMPLED BY: (Name/Company) JK INTEK

Verbal/fax data due: ___/___/___
Hardcopy due: ___/___/___

Report Format: ☒ Standard ☐ Forms ☐ Standard +.QC ☐ NJ Reduced ☐ Disk

Please call for pricing and availability on rush (<14-21 day) turnaround and on all but standard format.

Field Parameters Analyzed By:
Sig:
Date/Time:

SAMPLE CUSTODY EXCHANGES MUST BE DOCUMENTED BELOW. USE FULL LEGAL SIGNATURE, DATE AND MILITARY TIME (24 HOUR CLOCK, I.E. 8AM IS 0800, 4 PM IS 1600)

	DATE	TIME		DATE	TIME
RELINQUISHED BY SAMPLER 1	10/26/04	9:05	RECEIVED BY 1 Joan C Nulty	10/26	0905
RELINQUISHED BY 2 Joan C Nulty	10/26/04	1720	RECEIVED BY 2 M Steinberg	10/26/04	1720
RELINQUISHED BY 3	DATE	TIME	RECEIVED BY 3	DATE	TIME
RELINQUISHED BY 4	DATE	TIME	RECEIVED BY 4	DATE	TIME
RELINQUISHED BY 5	DATE	TIME	RECEIVED BY 5	DATE	TIME

DELIVERY METHOD: ☐ QC COURIER ☐ CLIENT ☐ UPS ☐ FEDEX ☐ OTHER ___

Custody Seal Number

COMMENTS:

Hazardous: yes / no

For example to aid completion, see reverse side.

FINAL REPORT

CROP MANAGEMENT

PLAN

CROP MANAGEMENT PLAN

USE OF GRASSES FOR A LAND WASTEWATER APPLICATION SYSTEM

CHOICE OF GRASS SPECIES

Any adapted grass in the area of use could serve well as a land cover for a wastewater disposal system. On the basis of the potential nitrogen removal and the utilization of harvested grass for hay or silage, it has been decided that Reed Canary Grass (Phalaris Arundinacea) shall be used.

Reed Canary Grass: The greatest advantage to Reed Canary Grass in the land treatment system is its tolerance to poor drainage and excess water. When grown under proper fertilization and cut at early maturity, it can provide a palatable and nutritious hay or silage. However, in this area, Reed Canary Grass has usually been used almost exclusively in wet, poorly drained areas where other forage crops will not grow. In such cases, it receives little management or fertilization, tends to become coarse, with low palatability, low nutrient value and poor acceptability by animals. This has strongly prejudiced dairymen and horsemen against it as a forage grass. In disposing of Reed Canary grown in a land treatment system, it will be necessary to overcome this prejudice.

Grown under nitrogen fertilization and cut at an early stage of maturity it can be equal to orchard grass in palatability and nutrient value.

Reed Canary Grass has a nitrogen content of 2 to 4% nitrogen, depending on the nitrogen available. It will yield 4 to 6 tons of forage per acre per year for a nitrogen removal of 300 to 400 lbs. per acre. It must be cut frequently and at an early growth stage (well before seed setting) otherwise it becomes coarse and rapidly losses its palatability and nutritious value.

LAND PREPARATION

Soil pH should be checked some six months prior to seeding. It pH is below 6.0, the limestone recommended by the soil test should be applied and plowed in six months before seeding. If the pH is between 6.0 and 6.5, limestone may be broadcast on the surface at any time before seeding. The limestone used should be fine, with 80% or more passing a 100 mesh sieve and have a calcium carbonate equivalent of 95% or more.

Land with weedy and undesirable vegetation should be plowed, disked and smoothed with a spring-tooth or spike-tooth harrow before seeding. If desirable covers, such as bluegrass, timothy, clover, etc. are already on the land, planting may be done after disking only.

SEEDING

Seeding can be in early spring (March-April) or in late summer (August 15 to September 15). Seeding can be done using the grass seed attachment of a grain drill, by using a

broadcast seeder, or any other planter designed for grass seeding. Recommended seeding rates are:

Reed Canary Grass: 30 lbs/acre

Use the seed stock commonly available in the local seed trade. Add 1 pound Ladino clover and 2 pounds Alsike clover for better quality hay or silage.

If seeding is on plowed and disked land, allow one week after plowing before seeding to allow the seed bed to settle. Application of 1/2" to 3/4" of water before seeding will help the- seedbed to settle and provide moisture for rapid germination. After seeding on newly plowed, land, firm the seed into the soil with a corrugated roller. On disked land, broadcast the seed into the existing cover.

Whether on plowed or disked land, apply 1/2" to 3/4" of water to insure rapid germination. Repeat at weekly intervals until stand is well established at which time water application might be increased.

Nitrogen is usually applied to grasses at seeding. In this case, no nitrogen is recommended at seeding as the nitrogen in the light application of treated wastewater should provide the needed nitrogen.

FERTILIZATION

The fertilizer rate for these grasses, both at seeding and later for maintenance, is as follows:

Soil Test Level	P lbs./acre	K Lbs./acre
L	120	180
M	60	100
H	0	60

Seeding Fertilization:

Base seeding fertilization on the soil test results of the sample taken 6 months before seeding or on a sample taken at seeding time. If the P soil test is low, broadcast and plow down P and K before seeding. Otherwise (M or H soil test) broadcast P and K before seeding.

Maintenance Fertilization:

Obtain soil sample for soil testing in early spring (February and March). Broadcast recommended P in spring. Broadcast up to 100 lbs. K in spring at same time as P. If amounts of K recommended are over 100 lbs., broadcast amounts recommended over 100 lbs. after the first cutting. Monitor soil pH yearly and apply limestone as recommended if pH fails below 6.0.

HARVEST OF FORAGE

The forage shall be ready for the first harvest about 8 to 9 weeks after spring seeding or in April after a fall seeding.

Subsequent harvest should be made when the grass is 12 to 15 inches tall and before seed heads begin to form. Cuttings can be expected at 40 to 50 day intervals. Actual harvesting schedules will need to be based on on-site evaluation as the growth rate can be strongly modified by the amount of nitrogen and water applied, as well as climatic conditions.

Early harvest of the grass (before seed set) will result in higher nitrogen removal and better forage quality.

MANAGEMENT

Reed Canary grass requires little management. The main management concern is that cutting be frequent enough to prevent rank and coarse growth. The stand should persist for a long time without reseeding. Should the stand become thin, it can be reseeded by broadcasting seed after disking. Plowing to reseed should be needed only if the stand becomes excessively weedy.

NITROGEN REMOVALS

Actual nitrogen removals should be based on a nitrogen analysis of each forage cutting and a determination of the amount of forage removed.

Nitrogen removals will be greatest when the forage is cut frequently at an early stage of growth. Estimated nitrogen removals are as follows:

January and December	0
February and November	10 lbs./acre
March and October	20 lbs./acre
April to September	40 lbs./acre
Total	300 lbs./acre

These estimates are probably on the conservative side, especially for Reed Canary Grass. They are based on four cuttings of 2,500 lbs. of forage with a 3% nitrogen content. A combination of higher nitrogen content and higher forage yields could raise the nitrogen removal to 400 lbs. per acre per year or over.

WATER BALANCE

Castle Valley Consultant
10 S. Clinton Street
Doylestown, PA
215-348-8257

Project: Sheeder Tract
By: GJW Date: 12/8/2004
Rev: Date:

Influent Conditions

Daily Influent	45,150	
Influent BOD5	362	mg/l
Influent Nitrogen (N)	61.00	mg/l

Lagoon Volume's

	Sludge Volume (gal)	Operating Volume (gal)	Storage Volume (gal)	Total Volume (gal)
Lagoon No 1		495,000	0	495,000
Lagoon No 2		305,501	1,418,352	1,723,853
Totals	0	800,501	1,418,352	2,218,853

Storage Volume Requirements

Where:	Flow/EDU =	Design flowrate used for calculations
	Daily Influent =	Flow/EDU * No of EDU's
	Monthly Influent =	Design flow rate (gpd) * No. of days in month
	Monthly Rainfall =	Net rainfall on lagoon area (from Rainfall Worksheet)
	Monthly Spray =	Monthly total (from Application Worksheet)
	Storage Requirements =	(Previous Months Requirement + (Monthly Influent + Monthly Rainfall - Monthly Spray)
	Cumulative Volume =	Storage Requirements (gal) + Cumulative Volume (gal)
	Storage Time (days) =	Cumulative Volume (gal) / Influent flow rate (gpd)

Irrigation Capacity = 17,782,840 Gallons Per Year

Castle Valley Consultant
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Doylestown, PA
215-348-8257

Project: Sheeder Tract
By: GJW Date: 12/8/2004
Rev: Date:

Storage Volume Requirements

Month	No. days	Daily Influent (gpd)	Monthly Influent (gal)	Monthly Net Rain & Evap (gal)	Monthly Spray (gal)	Storage Requirement	Cumulative Volume	Total Volume
November	30	45,150	1,354,500	110,718	602,035	863,183	863,183	1,663,684
December	31	45,150	1,399,650	100,957	275,500	1,225,107	2,088,290	2,888,791
January	31	45,150	1,399,650	93,984	165,300	1,328,335	3,416,624	4,217,125
February	28	45,150	1,264,200	86,455	165,300	1,185,355	4,601,979	5,402,480
March	31	45,150	1,399,650	104,303	1,267,299	236,654	4,838,632	5,639,133
April	30	45,150	1,354,500	104,303	1,487,699	0	4,809,736	5,610,237
May	31	45,150	1,399,650	-	2,277,466	0	3,931,921	4,732,421
June	30	45,150	1,354,500	-	2,754,999	0	2,531,422	3,331,923
July	31	45,150	1,399,650	-	2,846,832	0	1,084,239	1,884,740
August	31	45,150	1,399,650	-	2,433,185	0	50,705	851,206
September	30	45,150	1,354,500	3,347	2,254,619	0	0	800,501
October	31	45,150	1,399,650	8,645	1,252,606	155,689	155,689	956,190
Annual total	*365*		*16,479,750*	*612,712*	*17,782,840*			

Month	No. days	Storage Time (days)
November	30	**19**
December	31	**46**
January	31	**76**
February	28	**102**
March	31	**107**
April	30	**107**
May	31	**87**
June	30	**56**
July	31	**24**
August	31	**1**
September	30	**0**
October	31	**3**

Spray Disposal Required	17,092,462	gallons
Spray Disposal Supplied	17,782,840	gallons

SPRAY ZONES 1 & 3

CALCULATIONS

Castle Valley Consultants
10 South Clinton Street
Suite 302
Doylestown, PA 18901
(215)-348-8257

Project: Sheeder Tract
By: GJW Date: 12/8/2004
Revised By: _____ Date: _____

Proposed Spray Fields Open Fields

Assumptions

Zone	Classification	Area sqft	Ac
1	Well Drained Open	171,191	3.93
3	Well Drained Open	91,476	2.10
		Total	6.03

Spray Zone	*Spray Days per Month*	*Application Rate (in/week)*	*Spray Area Available (Acres)*	*Quantity Applied Month*		*Quantity Applied Week*	
JANUARY							
1	9	0.5	3.93	68,599	gallons	17,150	gal/wk
3	9	0.50	2.10	36,656	gallons	9,164	gal/wk
		TOTAL	6.03	105,254	gallons		
				0.64	inches		
FEBRUARY							
1	9	0.5	3.93	68,599	gallons	17,150	gal/wk
3	9	0.5	2.10	36,656	gallons	9,164	gal/wk
		TOTAL	6.03	105,254	gallons		
				0.64	inches		
MARCH							
1	23	1.5	3.93	525,923	gallons	131,481	gal/wk
3	23	1.5	2.10	281,027	gallons	70,257	gal/wk
		TOTAL	6.03	806,950	gallons		
				4.93	inches		

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Proposed Spray Fields Open Fields

APRIL

1	27	1.5	3.93	617,387	gallons	154,347 gal/wk
3	27	1.5	2.10	329,902	gallons	82,475 gal/wk
		TOTAL	6.03	947,289	gallons	
				5.79	inches	

MAY

1	31	2	3.93	945,136	gallons	236,284 gal/wk
3	31	2	2.10	505,035	gallons	126,259 gal/wk
		TOTAL	6.03	1,450,171	gallons	
				8.86	inches	

JUNE

1	30	2.5	3.93	1,143,310	gallons	285,827 gal/wk
3	30	2.5	2.10	610,929	gallons	152,732 gal/wk
		TOTAL	6.03	1,754,239	gallons	
				10.71	inches	

JULY

1	31	2.5	3.93	1,181,420	gallons	295,355 gal/wk
3	31	2.5	2.10	631,293	gallons	157,823 gal/wk
		TOTAL	6.03	1,812,714	gallons	
				11.07	inches	

AUGUST

1	31	2.5	3.93	1,181,420	gallons	295,355 gal/wk
3	31	2.5	2.10	631,293	gallons	157,823 gal/wk
		TOTAL	6.03	1,812,714	gallons	
				11.07	inches	

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Proposed Spray Fields Open Fields

SEPTEMBER

1	30	2.5	3.93	1,143,310	gallons	285,827	gal/wk
3	30	2.5	2.10	610,929	gallons	152,732	gal/wk
		TOTAL	6.03	1,754,239	gallons		
				10.71	inches		

OCTOBER

1	31	1.1	3.93	519,825	gallons	129,956	gal/wk
3	31	1.1	2.10	277,769	gallons	69,442	gal/wk
		TOTAL	6.03	797,594	gallons		
				4.87	inches		

NOVEMBER

1	26	0.95	3.93	376,530	gallons	94,133	gal/wk
3	26	0.95	2.10	201,199	gallons	50,300	gal/wk
		TOTAL	6.03	577,729	gallons		
				3.53	inches		

DECEMBER

1	15	0.5	3.93	114,331	gallons	28,583	gal/wk
3	15	0.5	2.10	61,093	gallons	15,273	gal/wk
		TOTAL	6.03	175,424	gallons		
				1.07	inches		

TOTAL ANNUAL CAPACITY 12,099,571 gallons

NITROGEN

CALCULATIONS

Castle Valley Consulatant
10 S. Clinton Street
Doylestown, PA
215-348-8257

Project: Sheeder Tract
By: GJW Date: 12/8/2004
Rev: Date:

Nitrogen Concentration Worksheet

Influent Conditions

Influent Flow	45,150 gpd
Influent Nitrogen (N)	61.00 mg/l

Nitrogen Concentration in Lagoon Effluent

$$Nt = No*e^{-KT(t+60.6(pH-6.6))}$$

where:

Nt = nitrogen concentration in lagoon effluent, (mg/l)
No = nitrogen concentration in influent, (mg/l)
t = detention time, days
pH = 7.16

$$KT = K20*theta^{(T-20)}$$

where:

K20 = 0.0064
theta = 1.039

	No mg/l	Nt mg/l	Predicted Removal	**Detetion Time (days)**	**Total Lagoon Volume (gal)**
January	61.00	31.04	49%	93.40	4,217,125
February	61.00	27.50	55%	119.66	5,402,480
March	61.00	24.06	61%	124.90	5,639,133
April	61.00	20.27	67%	124.26	5,610,237
May	61.00	18.79	69%	104.82	4,732,421
June	61.00	19.40	68%	73.80	3,331,923
July	61.00	22.38	63%	41.74	1,884,740
August	61.00	27.08	56%	18.85	851,206
September	61.00	29.60	51%	18.85	851,206
October	61.00	32.81	46%	21.18	956,190
November	61.00	33.52	45%	36.85	1,663,684
December	61.00	33.30	45%	63.98	2,888,791

Castle Valley Consultants
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Project: Sheeder Tract
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Grass Sites

Wastewater Nitrogen Loading

$$Lw(n) = (Cp * (Pr - ET) + (U * 4.4)) / ((1 - f) * (Cn)) - Cp)$$

EPA Process Design Manual for Land Treatment of Municipal Wastewater
EPA 625/1-81-013 pg. 4-31

Where:

Lw(n) = Wastewater Nitrogen Loading (in)
U = Crop Nitrogen Uptake (lb./ac/mo.) (see Appendix C Crop Management Plan)
f = 15% Fraction of applied nitrogen removed by denitrification & volatilization
Pr = Precipitation rate (see Precipitation Worksheet)
ET = Evapotranspiration rate (in/mo.) (see Evaporation Worksheet)
Cp = 10 mg/l Nitrogen concentration in percolating water
Cn = Nitrogen concentration in applied water (see Nitrogen Concentrations Worksheet)

	Pr (in)	ET (in)	(Pr-ET) (in)	U lb./ac/Mo.	Cn mg/l	Lw(n) (in/month)
January	3.37	0.00	3.37	0.00	31.04	2.06
February	3.10	0.00	3.10	10.00	27.50	5.61
March	3.74	0.57	3.17	20.00	24.06	11.45
April	3.74	1.71	2.03	40.00	20.27	27.14
May	4.26	3.46	0.80	40.00	18.79	N/A *
June	3.90	5.02	-1.12	40.00	19.40	N/A *
July	4.56	5.92	-1.36	40.00	22.38	N/A *
August	4.19	5.32	-1.13	40.00	27.08	12.66
September	4.10	3.67	0.43	40.00	29.60	11.89
October	3.13	1.96	1.17	20.00	32.81	5.57
November	3.97	0.78	3.19	10.00	33.52	4.10
December	3.62	0.08	3.54	0.00	33.30	1.93
Annual	45.68	28.50		300.00		82.41

* *The nitrogen removed by denitrification & volatilization in the applied wastewater will result in less than a 10 mg/l concentration in the percolating water.*

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Project: Sheeder Tract
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Wooded Sites

Wastewater Nitrogen Loading

$$Lw(n) = (Cp * (Pr - ET) + (U * 4.4)) / ((1 - f) * (Cn)) - Cp)$$

EPA Process Design Manual for Land Treatment of Municipal Wastewater EPA 625/1-81-013 pg. 4-31

Where:

Lw(n) = Wastewater Nitrogen Loading (in)
U = Crop Nitrogen Uptake (lb./ac/mo.) (see EPA 625/81-013 Table 4-12)
f = 15% Fraction of applied nitrogen removed by denitrification & volatilization
Pr = Precipitation rate (see Precipitation Worksheet)
ET = Evapotranspiration rate (in/mo.) (see Evaporation Worksheet)
Cp = 10 mg/l Nitrogen concentration in percolating water
Cn = Nitrogen concentration in applied water (see Nitrogen Concentrations Worksheet)

	Pr (in)	ET (in)	(Pr-ET) (in)	U lb./ac/Mo.	Cn mg/l	Lw(n) (in/month)
January	3.37	0.00	3.37	0.00	31.04	2.06
February	3.10	0.00	3.10	5.00	27.50	3.96
March	3.74	0.57	3.17	20.00	24.06	11.45
April	3.74	1.71	2.03	20.00	20.27	14.97
May	4.26	3.46	0.80	25.00	18.79	N/A *
June	3.90	5.02	-1.12	25.00	19.40	N/A *
July	4.56	5.92	-1.36	25.00	22.38	N/A *
August	4.19	5.32	-1.13	25.00	27.08	7.58
September	4.10	3.67	0.43	20.00	29.60	6.09
October	3.13	1.96	1.17	20.00	32.81	5.57
November	3.97	0.78	3.19	5.00	33.52	2.91
December	3.62	0.08	3.54	0.00	33.30	1.93
Annual	45.68	28.50		190.00		56.53

** The nitrogen removed by denitrification & volatilization in the applied wastewater will result in less than a 10 mg/l concentration in the percolating water.*

Castle Valley Consultant
10 S. Clinton Street, Suite 302
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215-348-8257

Project: Sheeder Tract
By: GJW Date: 12/8/2004
By: _____ Date: _____

Lagoon Temperature Worksheet

Lagoon Water Temperature (Tw)

$$Tw = (A * f * Ta) + (Q * Ti) / (A * f) + Q$$

Wastewater flow rate	Q =	170.91	m^3/day
Influent wastewater temperature	Ti =	22.00	Deg C (assume)
Proportionality factor	f =	0.5	
Surface area of lagoon No. 1	A =	1,044	m^2 (operating water level)
Surface area of lagoon No. 2	A =	1,005	m^2 (minimum operating water level)

	Ta *1 Deg F	Ta Deg C	Lagoon No. 1 Deg C	Lagoon No. 2 Deg C	Tw Avg. Deg C
Jan	30.20	-1.00	4.67	4.84	4.76
Feb	32.40	0.22	5.59	5.75	5.67
Mar	40.60	4.78	9.03	9.15	9.09
Apr	51.40	10.78	13.55	13.63	13.59
May	61.40	16.33	17.73	17.77	17.75
Jun	70.20	21.22	21.41	21.42	21.42
Jul	75.00	23.89	23.42	23.41	23.42
Aug	73.20	22.89	22.67	22.66	22.67
Sep	65.90	18.83	19.61	19.64	19.63
Oct	55.00	12.78	15.05	15.12	15.09
Nov	44.90	7.17	10.83	10.93	10.88
Dec	33.90	1.06	6.22	6.37	6.30

1) Average Temperature from the West Chester PA NOAA weather station

LAGOON 1 DESIGN

CALCULATIONS

Castle Valley Consultants
10 South Clinton Street
Suite 302
Doylestown, PA 18901
(215)-348-8257

Project: Sheeder Tract
Rev By: GJW Date: 12/8/2004
CK By: _____ Date: _____

Volume of Aeration Pond

45,150 gpd

High Water Level

Elevation of high water level	Elev =	208	
Area at high water level	Ahw =	11,236	sqft

Bottom of Lagoon

Elevation of bottom		192	
Area at bottom of lagoon	Ab =	100	sqft

Depth of Water

Depth of water at high water	hh =	16	ft

Volume of water

High water level

Vh = 1/3*hh*(Ahw+Ab+(Ahw*Ab)^.5)
Vh = 66,112.00 cuft or 494,518 gallons

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Project: Sheeder Tract
Rev By: GJW Date: 12/8/2004
CK By: Date:

Assumptions

Influent flow (Q) =	45,150	gpd or	170.89 m^3/d
Influent $CBOD_5$ =	360	mg/l	
Influent N =	61	mg/l	

1) Lagoon Temperature

$$Tw = \frac{((V/Q)/D)*f*Ta*Ti}{((V/Q)/D)*f+1}$$ (equation 1.5.1)

Where:

Tw =	?	Temperature of water (°C)	
Ta =	-1.44	Temperature of air (°C)	29.4 °F in January
Ti =	22	Temperature of influent (°C)	
D =	4.88	Lagoon Depth (m)	16 ft
V/Q =	10.95	hydraulic detention time (days)	
f =	0.5	proportionality factor	

Tw = -16.76 °C

2) Hydrolysis parameters

$K_h = 3*(1.103)^{Tw-20}$

K_h = 0.0817 d^{-1} (Table 2.1)

$K_x = 0.03*(1.116)^{Tw-20}$ (Table 2.1)

K_x = 0.0005 mg $CBOD_5/L$

3) Biomass Concentration (X_a)

Solids descay rate

$k_{d20} = 0.48 * \theta_s^{-0.415}$ (equation 2.3.4)

where θ_s = soilds age, d (biomass not retained = hydraulic retention time)

k_{d20} = 0.178 d^{-1}

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CK By: Date:

Adjusted for temperature

$$K_d = k_{d20} * 1.05^{Tw-20}$$

$K_d =$ 0.030 d^{-1}

therefore

$$X_a = \frac{Y * (S_o + X_{so})}{1 + K_d (V/Q)}$$ (equation 2.2.13)

where

Xa =	?	Biomass Concentration
Y =	0.5	growth yield
(So + Xso) =	360	Total influent $CBOD_5$, mg/l
Kd =	0.030	Solids decay rate
V/Q =	10.95277	hydraulic detention time (days)

$X_a =$ 135.95 mg VSS/L

4) Predicted effluent CBOD

$$X_{S1} = \frac{X_a * K_x * [1 + K_d * (V/Q)]}{(V/Q) * (K_h - K_d) - 1}$$

$X_{S1} =$ -0.860 mg $CBOD_5$/L

5) Oxygen Requirements

$$R_{O2} = 4.16x10^{-5} * r * Q * [a * (S_O + X_{SO}) - b * Xa]$$ (equation 2.2.16)

where

R_{O2} =	?	rate of oxygen utilization, kq/h
r =	1.5	the ratio of maximum demand to average daily demand
Q =	170.89	m^3/d
(So + Xso) =	360	mg/l
a =	1.47	when (So + Xso) is express in terms of $CBOD_5$
b =	1.42	when X_a is expressed in terms of VSS

$R_{O2} =$ 3.585 kg O_2/h or 7.90 lbs/h

Castle Valley Consultants
10 South Clinton Street
Suite 302
Doylestown, PA 18901
(215)-348-8257

Project: Sheeder Tract
Rev By: GJW Date: 12/8/2004
CK By: Date:

6) Aerator power requirements

$p = 10^3 * R_{O2} / NV$ (equation 1.4.1)

where

p =	?	power requirements
N =	1.25	expected aerator performance, kg O_2/h
V =	1,871.75	volume basin, m^3

p = 1.53 W/m^3

7) Total suspended solids concentration

$X_1 = X_i + X_a$ (equation 2.2.17)

where

X_1 =	?	Total suspended soilds
X_i =	145	inert suspended solids in influent (assumed), mg/l
X_a =	135.95	Biomass Concentration

X_1 = 280.95 mg/l

8) Power intensity for suspended soilds

$p = .004*X_1 + 5$ (equation 1.3.2)

where

p =	?	power requirements
X_1 =	280.95	Total suspended soilds

p = 6.12 W/m^3

1) All equations referenced are to be found in "High Performance Aerated Lagoon Systems" by Linvil G Rich, American Academy of Environmental Engineers, 1999

LAGOON 2 STORAGE

CALCULATIONS

Castle Valley Consultants
10 South Clinton Street, Suite 302
Doylestown, PA 18901
(215)-348-8257

Project: Sheeder Tract
By: GJW Date: 12/8/2004
CK By: Date:

Total

High Water Level

Elevation of high water level	Elev =	208	
Area at high water level	Ahw =	33,505	sqft

Low Water Level

Elevation of high water level	Elev =	196	
Area at low water level	Alw =	12,745	sqft

Bottom of Lagoon

Elevation of bottom		192	
Area at bottom of lagoon	Ab =	7871	sqft

Depth of Water

Depth of water at high water	hh =	12	ft
Depth of water at low water	hl =	4	ft

Volume of water

High water level

Vh = 1/3*hh*(Ahw+Ab+(Ahw*Ab)^.5)

Vh = 230,462 cuft

Vh = 1,723,853 gallons

Low water level

Vl = 1/3*hl*(Alw+Ab+(Alw*Ab)^.5)

Vl = 40,842 cuft

Vl = 305,501 gallons

Available storage

Vs = Vh - Vl

Vs = 1,418,352 gallons or 189,619 cuft

MISCELLANEOUS

INFORMATION

Lagoon rainfall worksheet
Precipitation Information
Evaporation Information
Evapotranspiration Information

LAGOON RAINFALL

CALCULATIONS

Castle Valley Consultants
10 South Clinton Street, Suite 302
Doylestown, PA 18901
(215)-348-8257

Project: Sheeder Tract
By: GJW Date: 12/9/2004
CK By: _____ Date: _____

Rainfall Volumes on Lagoons

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Total Precipitation Data	1	3.37	3.10	3.74	3.74	4.26	3.90	4.56	4.19	4.10	3.13	3.97	3.62	45.68
Total Evaporation Data	2	0.00	0.00	0.00	0.00	5.68	6.77	6.83	5.64	3.98	2.82	0.00	0.00	31.72
Difference (in)		3.37	3.10	3.74	3.74	-1.42	-2.87	-2.27	-1.45	0.12	0.31	3.97	3.62	13.96
Difference (ft)		0.28	0.26	0.31	0.31	-0.12	-0.24	-0.19	-0.12	0.01	0.03	0.33	0.30	

	Surface Area	Jan (Gallons)	Feb (Gallons)	Mar (Gallons)	Apr (Gallons)	May (Gallons)	Jun (Gallons)	Jul (Gallons)	Aug (Gallons)	Sep (Gallons)	Oct (Gallons)	Nov (Gallons)	Dec (Gallons)
Lagoon 1	11,236	23,603	21,712	26,194	26,194	(9,945)	(20,101)	(15,899)	(10,155)	840	2,171	27,805	25,354
Lagoon 2	33,505	70,382	64,743	78,109	78,109	(29,656)	(59,939)	(47,408)	(30,283)	2,506	6,474	82,913	75,603
Totals		93,984	86,455	104,303	104,303	(39,602)	(80,040)	(63,307)	(40,438)	3,347	8,645	110,718	100,957

1. See Attached Precipitation Data
2. See Attached Evaporation Data

Precipitation Information

West Chester Station

Castle Valley Consultants
10 S. Clinton Street
Doylestown, PA
215-348-8257

Project: Sheeder Tract
By: GJW Date: 12/8/2004
CK By: _____ Date: _____

Total Precipitation Data
West Chester, PA

	in
JAN	3.37
FEB	3.10
MAR	3.74
APR	3.74
MAY	4.26
JUN	3.9
JUL	4.56
AUG	4.19
SEP	4.10
OCT	3.13
NOV	3.97
DEC	3.62
Total	45.68

West Chester Local Climatological Data

Period of Record:
1948-1994 for means;
1888-1902, 1941-1994 for extremes;
1849-1930, 1941-1994 for precipitation extremes;
other notable extremes included.

MONTH	TEMPERATURES									DAYS WITH MAXIMA		DAYS WITH MINIMA		DEGREE DAYS		PRECIPITATION						SNOWFALL			DAYS WITH PRECIPITATION		
	Daily Maximum	Daily Minimum	Monthly	Record Highest	Year	Day	Record Lowest	Year	Day	90 and Above	32 and Below	32 and Below	0 and Below	Heating Base 65	Cooloing Base 65	Mean	Greatest Monthly	Year	Greatest Daily	Year	Day	Mean	Maximum Monthly	Year	0.10 or more	0.50 or more	1.00 or more
JAN	39.0	21.3	30.2	73	1967	25	-16	1984	22	0.0	7.7	27.1	1.9	1101	0	3.37	9.96	1979	2.94			7.0	22.5	1966	6.4	2.5	0.7
FEB	41.6	23.1	32.4	78	1930	25	-15	1934	9	0.0	5.2	23.1	0.3	916	0	3.10	7.29	1884	3.88			7.2	22.0	1964	6.2	2.1	0.8
MAR	50.8	30.4	40.6	87	1945		-3	1984	10	0.0	0.9	19.0	0.0	738	0	3.74	8.33	1891	2.95			4.0	36.0	1958	6.9	2.5	0.9
APR	62.5	40.3	51.4	94	1990	26	10			0.3	0.0	5.2	0.0	411	0	3.74	8.67	1874	4.20			0.4	5.0		7.1	2.7	0.8
MAY	72.9	49.9	61.4	98	1962	20	27	1978	1	1.0	0.0	0.4	0.0	150	41	4.26	13.82	1894	5.56			0.0	0.T	1977	7.5	3.1	1.1
JUN	81.5	58.9	70.2	101	1963	28	35	1972	11	4.2	0.0	0.0	0.0	22	184	3.90	13.14	1928	6.08	1884		0.0	0.0		6.6	2.5	1.0
JUL	86.0	64.0	75.0	105	1966	4	45	1984	9	8.5	0.0	0.0	0.0	0	308	4.56	14.58	1919	4.49			0.0	0.0		6.9	2.8	1.4
AUG	84.2	62.1	73.2	104			38	1982	29	5.6	0.0	0.0	0.0	5	260	4.19	15.58	1955	5.25	1971	28	0.0	0.0		6.3	2.7	1.1
SEP	77.4	54.4	65.9	101	1953	3	31	1983	26	2.2	0.0	0.1	0.0	71	110	4.10	14.81	1971	7.11	1971	14	0.0	0.0		5.2	2.5	1.3
OCT	66.6	43.3	55.0	97	1941		19	1983	31	0.1	0.0	3.4	0.0	332	10	3.13	8.66	1849	5.80			0.T	0.5	1962	5.0	2.3	0.9
NOV	55.0	34.8	44.9	84	1950	1	11	1976	30	0.0	0.2	12.5	0.0	582	0	3.97	9.91	1889	5.94	1950	25	0.8	11.0	1953	6.0	2.5	1.2
DEC	42.7	25.1	33.9	72	1984	30	-12			0.0	4.2	24.0	0.1	955	0	3.62	9.05	1983	3.76			4.8	37.0	1966	6.2	2.8	1.2
YEAR	64.0	42.7	53.4	105	1966	7/4	-16	1984	1/22	21.8	18.2	114.8	2.3	5283	913	45.55	73.00	1889	7.11	1971	9/14	25.3	72.8	1966	76.3	31.0	12.4

Evaporation Information

Landisville Station

Castle Valley Consultants
10 S. Clinton Street
Doylestown, PA
215-348-8257

Project: Sheeder Tract
By: GJW Date: 12/8/2004
CK By: _____ Date: _____

Lake Evaporation Data
Landisville Station, PA

	in
JAN	0.00
FEB	0.00
MAR	0.00
APR	0.00
MAY	5.68
JUN	6.77
JUL	6.83
AUG	5.64
SEP	3.98
OCT	2.82
NOV	0.00
DEC	0.00
Total	31.72

From the Pennsylvania State Climatologist

Landisville Evaporation (inches)

AvgDy	Jan's	Feb's	Mar's	Apr's	May's	Jun's	Jul's	Aug's	Sep's	Oct's	Nov's	Dec's
1	---	---	---	---	0.15	0.24	0.18	0.2	0.19	0.1	---	---
2	---	---	---	---	0.2	0.25	0.21	0.23	0.14	0.12	---	---
3	---	---	---	---	0.18	0.19	0.19	0.17	0.17	0.11	---	---
4	---	---	---	---	0.14	0.19	0.21	0.2	0.15	0.1	---	---
5	---	---	---	---	0.23	0.22	0.18	0.2	0.15	0.13	---	---
6	---	---	---	---	0.17	0.2	0.21	0.19	0.15	0.13	---	---
7	---	---	---	---	0.19	0.2	0.23	0.16	0.15	0.1	---	---
8	---	---	---	---	0.19	0.21	0.28	0.19	0.14	0.1	---	---
9	---	---	---	---	0.18	0.23	0.22	0.19	0.13	0.1	---	---
10	---	---	---	---	0.17	0.22	0.23	0.16	0.17	0.12	---	---
11	---	---	---	---	0.18	0.23	0.26	0.19	0.17	0.09	---	---
12	---	---	---	---	0.22	0.25	0.24	0.17	0.15	0.08	---	---
13	---	---	---	---	0.18	0.22	0.2	0.17	0.13	0.07	---	---
14	---	---	---	---	0.18	0.23	0.24	0.16	0.14	0.09	---	---
15	---	---	---	---	0.19	0.23	0.26	0.19	0.15	0.1	---	---
16	---	---	---	---	0.14	0.25	0.25	0.2	0.13	0.1	---	---
17	---	---	---	---	0.15	0.24	0.24	0.17	0.12	0.09	---	---
18	---	---	---	---	0.16	0.22	0.28	0.2	0.12	0.09	---	---
19	---	---	---	---	0.18	0.21	0.21	0.14	0.13	0.1	---	---
20	---	---	---	---	0.14	0.24	0.25	0.25	0.12	0.08	---	---
21	---	---	---	---	0.2	0.22	0.24	0.17	0.11	0.08	---	---
22	---	---	---	---	0.21	0.2	0.21	0.17	0.11	0.08	---	---
23	---	---	---	---	0.19	0.22	0.2	0.18	0.12	0.07	---	---
24	---	---	---	---	0.19	0.21	0.19	0.18	0.12	0.06	---	---
25	---	---	---	---	0.22	0.23	0.21	0.18	0.09	0.1	---	---
26	---	---	---	---	0.19	0.25	0.21	0.17	0.1	0.07	---	---
27	---	---	---	---	0.19	0.23	0.21	0.17	0.12	0.06	---	---
28	---	---	---	---	0.17	0.23	0.2	0.17	0.11	0.08	---	---
29	---	---	---	---	0.2	0.24	0.19	0.17	0.1	0.08	---	---
30	---	---	---	---	0.2	0.27	0.19	0.19	0.1	0.07	---	---
31	---	---	---	---	0.2	---	0.21	0.16	---	0.07	---	---

Evapotranspiration Information

Holtwood Station

Castle Valley Consultants
10 South Clinton Street, Suite 302
Doylestown, PA 18901
(215)-348-8257

Project: Sheeder Tract
By: GJW Date: 12/8/2004
CK By: _____ Date: _____

Monthly Potential Evapotranspiration Rate

Month	mm	in
Jan	0.00	0.00
Feb	0.00	0.00
Mar	14.60	0.57
Apr	43.50	1.71
May	87.90	3.46
Jun	127.60	5.02
Jul	150.30	5.92
Aug	135.10	5.32
Sep	93.20	3.67
Oct	49.80	1.96
Nov	19.90	0.78
Dec	2.00	0.08
Annual		28.50

(1) Holtwood, PA Station 4019, Soil Climate Regimes of Pennsylvania
Penn State Agricultural Experiment Station Bulletin, April 1997

Penn State Agricultural Experiment Station Bulletin 873

Soil Climate Regimes of Pennsylvania

PENNSTATE

College of Agricultural Sciences

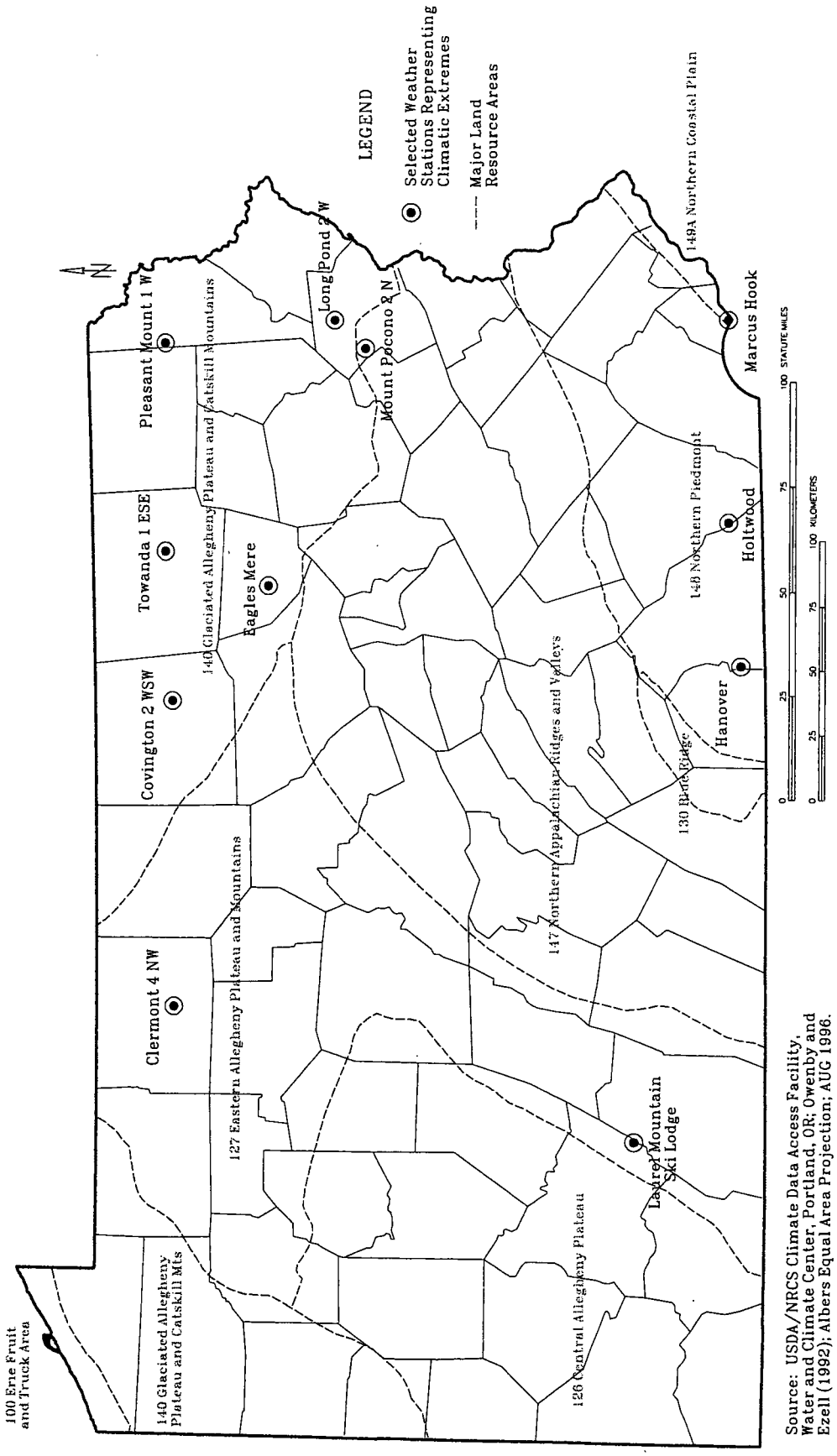
Soil Climate Regimes of Pennsylvania

William J. Waltman, Edward J. Ciolkosz, Maurice J. Mausbach, Mark D. Svoboda, Douglas A. Miller, and Philip J. Kolb

Penn State Agricultural Experiment Station Bulletin 873

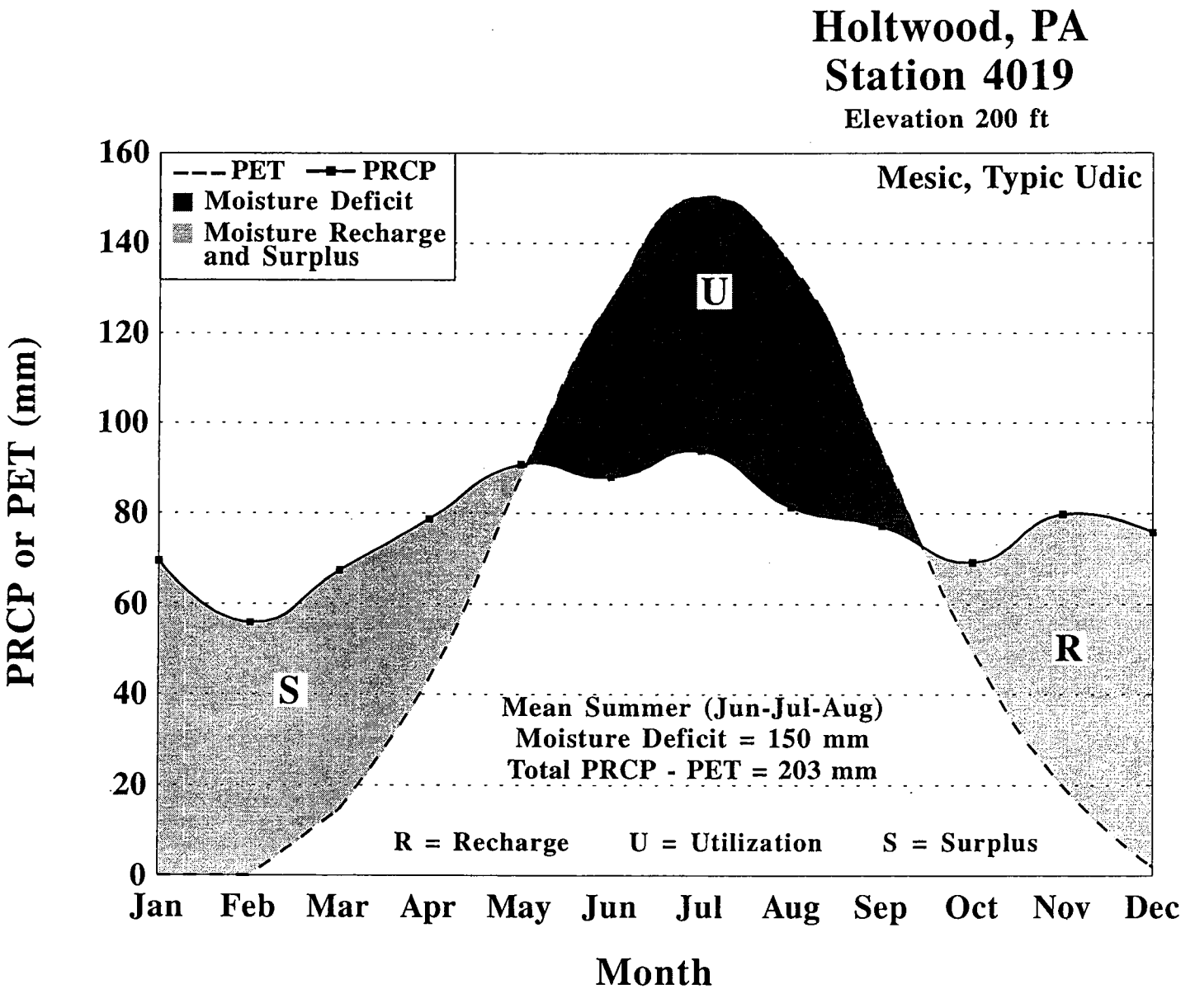
April 1997

A cooperative project of the NRCS Soil Quality Institute and the Penn State Agricultural Experiment Station
Soil Quality Institute, Natural Resources Conservation Service, Iowa State University, Ames, IA
National Soil Survey Center, Natural Resources Conservation Service, Lincoln, NE



Source: USDA/NRCS Climate Data Access Facility, Water and Climate Center, Portland, OR; Owenby and Ezell (1992); Albers Equal Area Projection; AUG 1996.

Figure 2. Selected weather stations representing climatic extremes in Pennsylvania.



Moisture balance for Holtwood, Pennsylvania, based upon a period of 1961-1990. PET calculated by Newhall Simulation Model (Van Wambeke et al., 1992).

Station: Holtwood, PA
Elevation: 200 ft
Period of Record: 1961-1990
Mean Annual Precipitation: 927 mm
Soil Temperature Regime: Mesic

MLRA: 148 Northern Piedmont

Country: USA

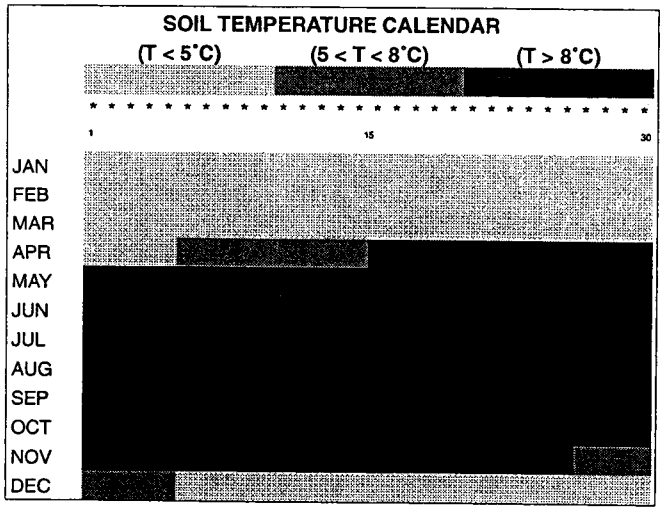
Latitude: 39 50 00N
Longitude: 76 20 00W

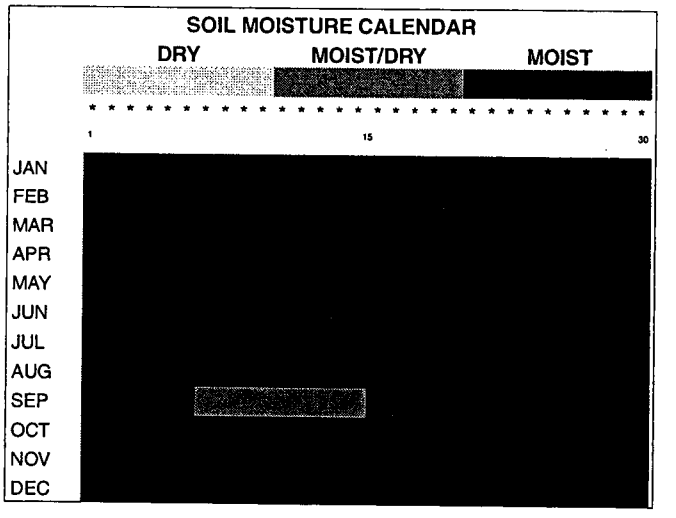
Waterholding Capacity: 200 mm
Soil Moisture Regime: Udic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL SIMULATION MODEL
(MAST = MAAT + 1.2° C; amplitude reduced by 1/3)

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Monthly Precipitation (mm)											
69.3	55.9	67.3	78.7	90.7	87.9	93.7	81.3	77.2	69.1	79.8	75.9
Monthly Air Temperatures (°C)											
-1.5	-0.2	5.0	10.6	16.6	21.7	24.2	23.4	19.6	13.1	7.3	1.4
Monthly Evapotranspiration (mm)											
0.0	0.0	14.6	43.5	87.9	127.6	150.3	135.1	93.2	49.8	19.9	2.0

Mean Annual Potential Evapotranspiration: 724 mm
Mean Annual Moisture Surplus: 203 mm
Mean Annual Growing Season (Apr to Sept) Precipitation: 625 mm (55% of MAP)
Mean Summer (Jun-Jul-Aug) Moisture Surplus/Deficit: -150 mm





Number of Cumulative Days That the Moisture Control Section						Highest Number of Consecutive Days That the Moisture Control Section is			
During One Year is			When Soil Temperature is Above 5°C			Moist in Some Parts		Dry After Summer Solstice	Moist After Winter Solstice
Dry	Moist/Dry	Moist	Dry	Moist/Dry	Moist	Year	T > 8°C		
0	10	350	0	10	231	360	221	0	120

Computed by BASIC program FLEXNSM (Van Wambeke et al., 1992)
Tentative subdivision: Typic Udic

SEWER IMPROVEMENT CONSTRUCTION AGREEMENT
SECURED BY BOND

THIS AGREEMENT, made this _____ day of _____, 2007, between TOLL PA XI, L.P., its successors and/or assigns, (hereinafter called "Toll") and POCOPSON TOWNSHIP, a township of the second class, of Chester County, Pennsylvania (hereinafter called "Township").

WHEREAS, Toll is the owner of certain tracts of ground (the "Property") located in Pocopson Township, Chester County, Commonwealth of Pennsylvania, containing 138.464 acres, more or less, as described by legal descriptions, attached hereto and made a part hereof as Exhibit "A".

WHEREAS, Toll has applied, pursuant to the Pocopson Township Subdivision and Land Development Ordinance as amended, for approval of a subdivision; and

WHEREAS, Toll and the Township have entered into a certain Settlement Agreement dated July 7, 2004 (the pertinent provisions of which are incorporated herein by reference), which further sets forth the terms and conditions applicable for the development of the Property; and

WHEREAS, in support of that application and pursuant to the Settlement Agreement, the Toll has submitted certain plans and other materials (hereinafter called "Village Development Plans") such plans entitled *Final Planned Residential Development Plan of the Sheeder Tract,* dated November 8, 2004, last revised May 8, 2006, prepared for Toll by Commonwealth Engineers, Inc., Downingtown, Pennsylvania, depicting a planned residential development consisting of 150 residential units, recreation facilities and a separate parcel approved for development of a day-care facility, if ultimately developed as such (the "Village Development"); and

WHEREAS, the aforesaid Village Development Plans require the construction of certain public sewer facilities; and

WHEREAS, Toll desires to construct a sewage treatment system to serve the residences intended to be constructed within the Village Development, as well as various off-site users, and to have the Township (or a separate municipal authority as may be duly authorized) accept, own and operate the system; and

WHEREAS, the terms and conditions involved in the design, funding and implementation of the sewer treatment system is set forth more particularly in that certain Sewer Construction and Easement Agreement dated _____, 2006, by and between Toll and the Township; and

WHEREAS, Paragraph 4 of the Sewer Construction and Easement Agreement contemplated that Toll and the Township would enter into a separate Sewer Development

Agreement to secure Toll's obligations to construct the Common Sewage Facilities (as defined therein).

WHEREAS, this Sewer Development Agreement is required to be secured and Toll desires to secure the same by a Surety Bond, issued by a bonding company registered to do business in Pennsylvania.

[NOTE: ATTACH BOND AS EXHIBIT "B]

NOW, THEREFORE, intending to be legally bound, the parties hereto do agree as follows:

1. Toll covenants and agrees that barring any force majeure, within one (1) year from the date that the Pennsylvania Department of Environmental Protection ("DEP") issues the Part II sewer construction permit for the Common Sewage Facilities for the Village Development, Toll shall cause the Common Sewage Facilities as set forth on the aforesaid Village Development Plans to be completed in accordance with the applicable specifications as referenced and incorporated in the Sewer Construction and Easement Agreement, and in other applicable regulations and ordinances. Such period shall be extended for any event constituting a force majeure. Notwithstanding the foregoing, however, any lateral sewer line extensions to be constructed on individual lots within the Village Development shall be completed no later than issuance of a certificate of occupancy for any such dwelling(s) completed on such lot(s).

2. Toll covenants and agrees that all construction and installation of the Common Sewage Facilities shall be done in a good and workmanlike manner and shall be subject to the approval of the Township Sewer Consultant (as further defined in the Sewer Construction and Easement Agreement) in accordance with generally accepted engineering standards and practices, or in the event of a vacancy in such office, of such person as designated by the Board of Supervisors of Pocopson Township for this purpose. It shall be the obligation of Toll to arrange in advance with the Township for construction review of work as the work progresses and the reasonable cost of such construction review shall be paid by Toll.

3. Toll further covenants and agrees that all underground sewer facilities that are to be installed within the cartway/footprint of roads, curbs and sidewalks shall be installed before paving streets, installing curbs and constructing sidewalks. All existing streets disturbed by the work of construction shall be repaved by the Toll in accordance with applicable specifications at Toll's sole cost and expense.

4. It is understood and agreed that the Township Sewer Consultant has prepared the Plans and Specifications (as defined in the Sewer Construction and Easement Agreement) for the benefit of the Township in accordance with sound engineering practices. Toll shall construct the Common Sewage Facilities in a good and workmanlike manner and in

accordance with the Plans and Specifications and sound construction practices and does further warrant that the sewer improvements installed and each and every part thereof are fit for all purposes for which they are intended. The Township disclaims all liability for construction, installation or operational defects and Toll and each and every contractor, subcontractor, laborer, materialman and substitutes of any of them agree to exonerate, indemnify and hold the Township harmless of and from any and all claims and demands with respect to the construction and installation of the sewer improvements to be dedicated and with respect to this Agreement and the performance of any and every party thereof, including legal fees, engineering fees, expert witness fees and any judgment rendered against Township as a result of claims filed or suits brought against Township, its officers or employees alleging conditions arising because of Toll's construction, unless arising from the Township's gross negligence.

5. It is a condition precedent to this Agreement that Toll shall furnish to Township a bond secured by a bonding company in form satisfactory to the Township Solicitor conditioned upon the performance of Toll's obligations as set forth in this Agreement, including inter alia, the construction of the Common Sewage Facilities as set forth in the approved Plans and Specifications. Said bond is attached hereto as Exhibit "B" and incorporated herein by reference as fully as though set forth at length.

The bond shall be in the amount of [PROVIDE REVISED AMOUNT TO ADDRESS FACT THAT MOST OF IMPROVEMENTS HAVE BEEN COMPLETED] Dollars ($), an amount equal to one hundred ten percent (110%) of the cost of the sewer improvements. The cost of the sewer improvements shall be established by submission to the Township of an estimate of construction costs necessary to complete the sewer improvements, which estimate shall be certified by the Township Sewer Consultant to be a fair and reasonable estimate of such costs. If there is a dispute in this regard, it shall be resolved in accordance with Section 509g of the MPC, as that section may be amended from time to time.

Should Toll fail to complete the sewer improvements within the time as specified, the amount of the bond shall be automatically increased to the higher of the following: a) by ten percent (10%) for each one (1) year beyond the first anniversary date from the date of commencement of construction, or b) to an amount not exceeding one hundred ten percent (110%) of the cost of completing the sewer improvements as reestablished within the thirty (30) day period immediately preceding expiration of the initial one (1) year period by the agreement procedure outlined herein for establishing the cost of the sewer improvements. If the amount of the bond is not increased by Toll as required at the end of each one (1) year period upon notice and reasonable opportunity to comply, Toll shall be in default of this Agreement and the Township may refuse to grant new building permits and occupancy permits until the proper security is posted.

Toll shall, at least thirty (30) days prior to the expiration of the initial surety bond, notify the Township of the Toll's need to extend the date for completion of the Common Sewage

Facilities, and shall post with the Township, at least fifteen (15) days before the expiration of said surety bond, an approved financial security, established in accordance with the procedure outlined above. If such approved financial security has not been posted with the Township within fifteen (15) days prior to the expiration of the initial surety bond, or any subsequent surety bond issued as required by this paragraph, Toll shall be deemed in default of this Agreement, and the Township is authorized to cure Toll's default by demanding payment on the surety bond and withdrawing therefrom the full amount by which the Surety is obligated under the terms of the surety bond.

6. Toll shall be entitled to apply for building permits for the construction of the dwellings on lots as shown on the aforesaid Village Development Plans, subject always to all applicable provisions of Pocopson Township codes, ordinances, regulations and the Settlement Agreement, upon compliance with the following:

(a) The plans are recorded according to law;

(b) This Agreement is duly signed and delivered;

(c) A construction bond in a form acceptable to the Township, as provided for above, is executed and delivered to Township;

(d) All fees required by any Ordinance, Resolution or regulation of Township are paid, as well as the payment of costs, and legal and engineering expenses, incurred by Township for the completion of its initial approval of the plan, preparation of the Agreements, Resolutions and other papers relating to the acceptance of this Agreement by Township are paid;

(e) All required Declarations of Covenants and Restrictions shall be executed and the original document shall be held in escrow by the Township Solicitor, to be released and recorded immediately prior to closing on the first residential unit in the development ; and

(f) All other requirements of the Township Ordinances and regulations have been met, as well as any applicable requirements of the Settlement Agreement.

7. Where the "Village Development Plan" approval contemplates development by section or stages of development, the required financial security shall be established and re-established for each section in accord with this Agreement. No improvements contained in any section shall be commenced, no building permits for houses therein shall be issued and no lots therein shall be sold, transferred or conveyed to any purchaser unless the financial security is executed and delivered for such section.

8. In the event of default in the construction, installation, completion and dedication, all in accordance with the terms above set forth and within the time limits herein set forth or if Toll shall abandon or unduly delay the work of installation and construction of the Common Sewage Facilities, or if Toll shall fail to correct or complete all omitted work and all defective work connected with the installation and construction of said improvements, then following written notice and reasonable opportunity to cure first being provided to Toll by the Township, the Township shall have available and may in its discretion but shall not be required to exercise one or more of the following remedies, which said remedies shall be deemed cumulative and not alternative; and which remedies may be exercised without the consent or approval of any other person or entity, including the Toll or the Surety:

(a) Declare the Toll in default and thereafter to demand, withdraw and expend any part or all of the surety bond for the purpose of curing the Toll's default. In the event that the amount of the surety bond is insufficient to fully pay for the costs of completion of the work required by this Agreement, then and in that event Toll agrees to pay to the Township such additional sum or sums as may be required for the completion or correction of all work as required herein;

(b) Cause the removal of any contractor or subcontractor, materialman or other person from the job and cause the work to be performed or materials furnished by other reputable persons or agencies at competitive rates (without the necessity of submitting to public bid), paying the cost thereof to the extent available from the surety bond;

(c) Cause the removal of any contractor, materialman, laborer or other person and contracting for a substitution therefor in the name of and upon the sole credit of Toll (again, without the necessity of submitting the same to public bid);

(d) The Township may cause any default in improvements, corrections, repairs, maintenance or removal to be cured, pay the same and enter the amounts expended together with costs, attorneys' fee, and interest as a municipal lien against the lands of Toll as the Township may so elect; or

(e) Any other remedy available at law or in equity.

In the event of the exercise of any of the foregoing remedies, there shall be included within the amount claimed an attorney's fee of fifteen percent (15%) for collection, together with interest at the rate of two percent (2%) above the then current prime rate, plus costs.

9. By execution of this Agreement and following written notice and reasonable opportunity to cure first being provided to Toll by the Township, the Toll authorizes, without limitation, any bonding company issuing the requisite surety bond guaranteeing completion of improvements, as hereinabove described, to pay to the Township, without further

order or approval of the Toll, any sum or sums demanded by the Township to cure Toll's defective performance or non-performance. Further, the Toll hereby remises, releases and forever discharges the bonding company from any and all liability with respect to any sum or sums so paid or released, and directs that the same shall be paid or released, at the Township's sole discretion and direction, without further inquiry being made, and without any approval whatever by the Toll.

10. Within thirty (30) days after completion and approval by the Township of the Common Sewage Facilities as shown on the Village Development Plans, and before acceptance of such improvements, Toll shall submit to the Township an "as built" plan of the completed Common Sewage Facilities, certified by Toll to be in accordance with actual construction.

11. Dedication.

(a) When the installation of the Common Sewage Facilities shall have been fully completed and approved by the Township Sewer Consultant or other person designated for that purpose by the Board of Supervisors of Pocopson Township and an offer of dedication of said improvements or portions thereof is required by the subdivision or land development approval given by the Township, Toll shall tender to the Township the following:

(i) Deeds of Dedication and/or bills of sale in customary form satisfactory to the Township Solicitor dedicating said improvements to the Township or municipal authority as duly created by the Township in accordance with law;

(ii) A certificate of title insurance or other proof of clear title satisfactory to the Township Solicitor;

(iii) Acceptable financial security in the amount of fifteen percent (15%) of the actual cost of said improvements to secure the structural integrity and functioning thereof in accordance with the Plans and Specifications thereof; Toll shall be liable, however, for the entire cost of repair to or replacement of any said improvements during the term of said security. Said financial security shall be of the same type as is acceptable to secure completion of the improvements and shall be held by the Township for a period of eighteen (18) months from the date of acceptance of dedication.

(iv) An amount equal to the cost of recording said deeds plus Township's legal expenses in connection with this Agreement, whereupon Township may at any time or from time to time thereafter accept said deeds of dedication, provided however, that Township shall be under no obligation to accept said tender if the said tender is made of a portion of the required improvements, and Township may defer its acceptance of said tender until all improvements shall have been fully completed or until such later time as Township deems to be in

its best interests unless and until all conditions precedent as set forth below in Paragraph 11(b) have been satisfied.

(b). Acceptance of Dedication. Prior to acceptance of dedication, the following must occur:

(i). Township shall have received from Toll all sums due and owing as security deposits, reimbursements or otherwise under the provisions of this Agreement.

(ii). All documents required by Paragraph 11(a) herein above shall have been prepared, executed and delivered to the Township in a form approved by the Township Solicitor.

(iii). All sewer improvements, whether or not the same are to be dedicated to the Township, shall have been fully completed and approved by the Township Sewer Consultant.

12. No transfer of ownership shall in any way relieve Toll of responsibility for completion of the Common Sewage Facilities in accordance with the terms of this Agreement nor affect in any way the rights of Township under the financial security executed and delivered contemporaneously herewith; Toll's heirs, administrators, successors and assigns shall be bound by the provisions of this paragraph and the terms of this Agreement.

13. Any additional terms, conditions or modifications of this Agreement shall not be effective unless reduced to writing, signed by the parties hereto and appended to this Agreement as an addendum hereto, specifically designated as such.

14. This Agreement may not be assigned by Toll without written approval of the Township, which approval shall not be unreasonably withheld, conditioned or delayed.

(SIGNATURES CONTINUE ON NEXT PAGE)

IN WITNESS WHEREOF, the parties hereto have hereunder set their hands and seals or caused this Agreement to be duly executed by their respective duly authorized officers, the day and year first above written.

ATTEST:

TOLL:

TOLL PA XI, L.P.

BY: TOLL PA GP CORP., General Partner

_____
Secretary or Assistant Secretary

BY:_____
President or Authorized Officer

(Corporate Seal)

ATTEST:

BOARD OF SUPERVISORS
POCOPSON TOWNSHIP

_____
Township Secretary

By:_____
Supervisor - Chairman

(Seal)

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SEWER FUNDING AGREEMENT FOR THIRD-PARTY USERS

This Sewer Funding Agreement for Third-Party Users ("Funding Agreement") is made this ____ day of _____, 2007, by and among **POCOPSON TOWNSHIP**, a township of the second class located in Chester County, Pennsylvania ("Township"); **TOLL PA XI, L.P.**, its successors and/or assigns, (hereinafter called "Toll") and _____ ("Third-Party User").

BACKGROUND

WHEREAS, the Township identified an area (the "Study Area") that warranted investigation of alternatives available to meet the current and future wastewater disposal needs for various property owners within the Township and thereupon engaged Castle Valley Consultants, Inc (the "Township Sewer Consultant") to complete an Act 537 Sewage Plan Update (the "Sewer Plan Update") for the Study Area.

WHEREAS, the Township wishes to provide public sewer facilities to certain property owners within the Study Area, to be handled through the construction of a regional sewage treatment plant to be located within the Study Area.

WHEREAS, Toll is the developer of certain property (the "Toll Property") situate in the Township, consisting of 138.464 acres of land more or less and located along Lenape Road (S.R. 52) and Pocopson Road (S.R. 3023), which development is known as Riverside at Chadds Ford (hereinafter the "Development") and is depicted on certain plans entitled *Final Planned Residential Development Plan of the Sheeder Tract,* dated November 8, 2004, last revised May 8, 2006, prepared for Toll by Commonwealth Engineers, Inc., Downingtown, Pennsylvania.

WHEREAS, Toll has constructed a sewage treatment system on the Toll Property to serve the residences within the Development.

WHEREAS, pursuant to a separate Settlement Agreement by and between Toll and the Township, Toll has agreed to cooperate with the Township to make any additional treatment and disposal capacity realized as part of Development available to various off-site property owners.

WHEREAS, Third-Party User has been identified as one of the off-site property owners who can benefit from connection to the sewage treatment facilities constructed on the Toll Property.

WHEREAS, in order to facilitate the ability of the Third-Party User to tie into the sewage treatment facilities constructed on the Toll Property, the Township has engaged the Township Sewer Consultant to perform engineering consulting services to design the

necessary sewer main extensions and appurtenant off-site facilities for the Third-Party User (the "Off-Site Sewer Improvements").

WHEREAS, the Third-Party User has agreed to fund the fees, costs and expenses associated with the construction of the Off-Site Sewer Improvements, and further to fund its pro-rata share of any excess fees, costs and expenses associated with the design of the Component II sewer improvements (as defined in the Settlement Agreement) to the extent that such costs exceed the Component II Contribution provided by Toll to the Township under and pursuant to the Settlement Agreement.

AND WHEREAS, Toll has agreed to serve as general contractor to construct the Off-Site Sewer Improvements in exchange for payment by the Third-Party User of the cost and expense for the construction of the Off-Site Sewer Improvements.

NOW THEREFORE, the parties hereto, each intending to be legally bound, agree as follows:

1. *Funding of Costs.*

(a) The Third-Party User shall pay and fund the costs and expenses of the Off-Site Sewer Improvements, subject to the terms and conditions hereof and based upon a budget for the Off-Site Sewer Improvements mutually agreed upon by the parties hereto. The plan and specifications (the "Plan and Specifications") of the Off-Site Sewer Improvements are attached hereto and incorporated herein as Exhibit "A". The budget for the Off-Site Sewer Improvements is attached hereto and incorporated herein as Exhibit "B".

(b) Upon the date hereof, the Third-Party User shall deposit with the Township the sum of _____ Dollars ($) (the "Initial Escrow Funds"), to be held in an escrow account maintained and controlled by the Township (the "Escrow Account") for such purposes. Funds shall be disbursed from the Escrow Account by the Township to pay invoices for construction costs incurred by Toll for the construction of the Off-Site Sewer Improvements. Third-Party User hereby authorizes disbursement from the fund by Township at its convenience and in its reasonable discretion as invoices are received without further authorization from Third-Party User.

(c) Upon receipt of the Initial Escrow Funds, the Township shall direct Toll to commence work on the Off-Site Sewer Improvements as detailed in the Plans and Specifications. Payment to Toll out of the Escrow Account shall be made for work completed on the Off-Site Sewer Improvements, and shall be paid within thirty (30) days of receipt by the Township of an invoice that describes in sufficient detail the work completed to date by Toll. A copy of all invoices received by the Township shall be provided to Third-Party User.

(d) The Escrow Account shall at all times be maintained at a minimum balance of _____ Dollars ($) for payment and/or reimbursement to Toll of all costs, expenses and invoices of every nature and kind required by this Funding Agreement, its Exhibits and related documents. In the event the monies in the Escrow Account fall below

such minimum threshold, Toll shall have the right to cease work on the Off-Site Sewer Improvements until the Escrow Account is replenished. The Township may request, and Third-Party Users shall thereupon deposit into the Escrow Account within ten (10) days of such written request, such additional funds to re-establish the Escrow Account to the balance set forth above. Once the Escrow Account is re-established, the Township shall provide notification of same to Toll and Toll shall thereupon resume work on the Off-Site Sewer Improvements.

(e) Upon the completion of the Off-Site Sewer Improvements, and payment in full for the costs and expenses associated therewith, any funds remaining in the Escrow Account shall be returned to Third-Party User, so long as no other fees or expenses payable by Third-Party User remain unpaid or unreimbursed to Township, Toll or any of its professionals or consultants.

(f) If Third-Party User fails to fund an amount due hereunder, the Township shall notify Third-Party User in writing. In the event such non-payment is not cured by payment of the deficient amount within fifteen (15) days of the date of such written notice, without prejudice to other rights or remedies at law or in equity, Toll reserves the right to suspend or cease all work and to discontinue or terminate the Off-Site Sewer Improvements.

3. *Supervision and Oversight.*

At the request of Third-Party User, regular progress meetings and status reports relative to the progress of work by Toll shall be held. Toll and the Township shall cooperate in good faith to allow Third-Party User to offer input and suggestions to Toll and the Township Sewer Consultant as work proceeds on the Off-Site Sewer Improvements. The parties shall, by mutual agreement, designate a time and place of a regular status meeting at which the parties shall give a full report of the Off-Site Sewer Improvements, along with an accounting of invoices received and funds expended relative to the Off-Site Sewer Improvements. If it appears that the cost of the Off-Site Sewer Improvements will exceed by ten percent (10%) the budget attached hereto as Exhibit "B", the parties shall immediately discuss options and mutually agree upon a course of action prior to further work continuing on the Off-Site Sewer Improvements pending the review and approval by the parties of a revised estimate/budget, such approval not to be unreasonably withheld, delayed or conditioned.

4. *Cooperation.*

The parties hereby acknowledge that, in order to facilitate the construction of the Off-Site Sewer Improvements, each party will cooperate in good faith with the other parties relative to facilitating the completion of the Off-Site Sewer Improvements on budget. In that regard, the parties agree to act in good faith and use their respective best efforts to facilitate the smooth progress toward completion of the Off-Site Sewer Improvements.

5. *Termination of Funding Agreement.*

a. For Cause. In the event that any party believes that the other party is failing to meet its obligations or has breached this Funding Agreement, the non-breaching party shall send written notice to the other party, setting forth the nature of the alleged breach, and directing that the breaching party commence to cure such breach within ten days of the date of receipt of the written notice. In the event that the breaching party fails to commence to cure within such ten-day period, the non-breaching party may thereupon terminate this Funding Agreement and thereafter such party shall have no further obligation to pay for further work, costs and/or fees relating to the Off-Site Sewer Improvements effective as of the date of the notice of termination, or alternatively, the non-breaching party has the option of paying to complete the Off-Site Sewer Improvements without the participation of the breaching party, and may thereafter exercise any other right given by law to collect the debt or otherwise remedy the default of the breaching party. The parties recognize that each party hereto is relying on each other party to perform its obligations, and the failure by any party to do so may result in consequential delays, funding shortages and consequential damages.

b. Without Cause. In the event that Toll decides to abandon the Village Development, or such development is indefinitely postponed, which Toll may do for any reason or for no reason, Toll may terminate its obligations arising under this Funding Agreement by sending to the other parties hereto a ten-day written notice of termination, and thereafter Toll shall have no further obligation to perform further work, costs and/or fees relating to the Off-Site Sewer Improvements or have any further obligation under this Funding Agreement, effective as of that date which is ten (10) days after the date of notice of termination. In such event, subject to the approval of the Township, the non-withdrawing party has the option of continuing as a party hereto, and funding the fees and costs to complete the Off-Site Sewer Improvements without the participation of the withdrawing party and with such revisions to the Off-Site Sewer Improvements as may be deemed appropriate by the Township.

6. *Indemnification and Release.* Third-Party User shall indemnify, defend and hold harmless the Township of and from any and all fees, costs and expenses incurred by the Township, including reasonable attorneys' fees, as a result of the breach or default by Third-Party User under this Funding Agreement. Third-Party User shall also hold harmless and release Toll of and from any other costs, fees, expenses, losses, damages or liabilities incurred by Toll, including reasonable attorneys' fees, arising from or relating to any suit, claim or demand, settlement, verdict or judgment related to any property damages to or personal injuries occurring or arising from the construction of the Off-Site Sewer Improvements, unless arising from the gross negligence of Toll. Toll's claim for indemnification and release hereunder shall specifically include the total cost of defense for actual litigation or the reasonable threat thereof, with Toll at all times having the right in its sole discretion to retain counsel of its choice.

7. *Further Assurances.* The parties hereto agree to cooperate with each other, to execute such other documents, instruments and agreements as may be reasonably required in order to effect the purposes of this Funding Agreement.

8. *Miscellaneous.*

(a) Indulgences and Waivers. Neither the failure nor any delay on the part of any party to exercise any right, remedy, power or privilege under this Funding Agreement shall operate as a waiver thereof, nor shall any single or partial exercise of any right, remedy, power or privilege preclude any other or further exercise of the same or of any other right, remedy, power or privilege, nor shall any waiver of any right, remedy, power or privilege with respect to any occurrence be construed as a waiver of such right, remedy, power or privilege with respect to any other occurrence. No waiver shall be effective unless it is in writing.

(b) Controlling Law. This Funding Agreement and all questions relating to its validity, interpretation, performance and enforcement (including, without limitation, provisions concerning limitations of actions), shall be governed by and construed in accordance with the laws of the Commonwealth of Pennsylvania, notwithstanding any conflict-of-laws doctrines of such state or other jurisdiction to the contrary, and without the aid of any canon, custom or rule of law requiring construction against the draftsman.

(c) Notices. All notices, requests, demands and other communications required or permitted under this Funding Agreement shall be in writing and shall be deemed delivered when sent by registered or certified mail, postage prepaid, return receipt requested, or hand delivered (with a receipt), or sent by Federal Express or similar, nationally recognized overnight carrier, or received via confirmed telefax transmission addressed as follows:

If to the Township:

Pocopson Township
P.O. Box 1
740 Denton Hollow Road
Pocopson, PA 19366

With a copy to:

Ross A. Unruh, Esquire
Unruh, Turner, Burke & Frees
17 West Gay Street
P.O. Box 515
West Chester, PA 19381-0515

If to Toll:

Toll Bros., Inc.
c/o Tom Kessler
[ADDRESS NEEDED]

With copy to Christopher H. Schubert, Esquire

RILEY RIPER HOLLIN & COLAGRECO, P.C.
717 Constitution Drive
PO Box 1265
Exton, PA 19341

If to Third-Party User:

[INSERT NECESSARY INFORMATION]

Any party may alter the address to which communications or copies are to be sent by giving notice of such change of address in conformity with the provisions of this paragraph for the giving of notice.

(d) Binding Nature of Agreement. This Funding Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns.

(e) Counterparts; Facsimile Signature. This Funding Agreement may be executed in several counterparts, which together shall constitute a single agreement. This Funding Agreement may also be executed by the parties by facsimile transmission of executed and signed copies, which when fully executed by all parties in facsimile form shall be deemed fully executed, binding and enforceable as if in the original.

(f) Third Party Beneficiaries. Nothing in this Funding Agreement shall create, or is intended to create, a contractual relationship with, a cause of action in favor of, or any other rights or entitlements in any third party with respect to any of the parties hereto.

(g) No Partnership or Joint Venture. The parties hereto do not intend to create a partnership, joint venture or other undertaking between them, or any other relationship creating fiduciary or other duties between them, other than the specific duties and obligations set forth herein, it being understood that the sole purpose of this Funding Agreement is to provide sources of funds for the payment by the Third-Party User of its obligations to Toll and to the Township in connection with the Off-Site Sewer Improvements.

(h) Entire Agreement. This Funding Agreement contain the entire understanding among the parties hereto with respect to the subject matter hereof, and supersedes all prior and contemporaneous agreements and understandings, inducements or conditions, express or implied, oral or written, except as herein contained. The express terms hereof control and supersede any course of performance and/or usage of the trade inconsistent with any of the terms hereof. This Funding Agreement may not be modified or amended other than by an agreement in writing signed by all parties hereto. Notwithstanding the foregoing, the parties acknowledge and agree that that certain Settlement Agreement by and among the Township, Toll and Sheeder is not superceded by this Funding Agreement. In that regard, in the event that there are any conflicts or inconsistencies, actual or implied, between this Funding Agreement and the Settlement Agreement, the terms of the Settlement Agreement shall control.

(i) Effective Date. Notwithstanding anything to the contrary set forth in this Funding Agreement, this Funding Agreement shall not be effective or binding on any of the parties unless and until all of the Initial Escrow Funds have been deposited with the Township.

(j) Assignment. This Funding Agreement shall inure to the benefit of and bind the parties hereto and their respective successors and assigns.

IN WITNESS WHEREOF, the parties hereto have executed this Funding Agreement the day and year first above written.

ATTEST: POCOPSON TOWNSHIP

_____ By:_____
Secretary H. William Sellers, Chairman

By:_____
Georgia Brutscher, Vice Chairman

By:_____
Ezekiel Hubbard, Member

ATTEST: TOLL PA XI, L.P.

By: TOLL PA GP CORP., General Partner

_____ By:_____
Secretary

[ADD SIGNATURE OF THIRD-PARTY USER]

COMMONWEALTH OF PENNSYLVANIA :
: SS
COUNTY OF CHESTER :

On this, the _____ day of _____, 2007, before me the undersigned a notary public for the Commonwealth of Pennsylvania residing in the County of Chester, personally appeared H. WILLIAM SELLERS, who acknowledged himself to be the Chairman of the Pocopson Township Board of Supervisors, and that he as such Chairman being authorized to do so, executed the foregoing instrument for the purposes therein contained by signing the name of the Pocopson Township by himself as Chairman.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal.

_____
Notary Public

COMMONWEALTH OF PENNSYLVANIA :
: SS
COUNTY OF CHESTER :

On this, the _____ day of _____, 2007, before me the undersigned a notary public for the Commonwealth of Pennsylvania residing in the County of Chester, personally appeared _____ who acknowledged himself to be the _____ of Toll PA GP Corp., general partner of Toll PA XI, L.P., and that he as such officer, being authorized to do so, executed the foregoing instrument for the purposes therein contained by signing the name by himself as such officer.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal.

_____
Notary Public

[ADD ACKNOWLEDGMENT OF THIRD-PARTY USER]

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Chapter 170: SEWERS

[HISTORY: Adopted by the Board of Supervisors of the Township of Pocopson as indicated in article histories. Amendments noted where applicable.]

GENERAL REFERENCES
Uniform construction codes — See Ch. 53.
Subdivision and land development — See Ch. 190.
Water — See Ch. 236.
Zoning — See Ch. 250.

ARTICLE I Holding Tanks [Adopted 7-25-1988 by Ord. No. 8-1988]

§ 170-1. Purposes.

The purpose of this article is to establish procedures for the use and maintenance of sewage holding tanks designed to receive and retain sewage from residential or commercial uses, and it is hereby declared that the enactment hereof is necessary for the protection, benefit and preservation of the health, safety and welfare of the inhabitants of this Township.

§ 170-2. Definitions.

Unless the context specifically and clearly indicates otherwise, the meaning of the following terms used in this article shall be as herein defined:

BOARD — The Supervisors of Pocopson Township.

HOLDING TANK — A watertight receptacle which receives and retains sewage and is designed and constructed to facilitate ultimate disposal of the sewage at another site. This term is limited to a "retention tank," which is a holding tank where sewage is conveyed to it by a water-carrying system.

IMPROVED PROPERTY — Any property within this Township upon which there has been erected a structure, existing at the date of enactment hereof or hereinafter erected, intended for continuous or periodic habitation, occupancy or use by human beings.

OWNER — Any person vested with ownership, legal or equitable, sole or partial, of any property located in this Township.

PERSON — Any individual, association, public or private corporation for profit or not for profit, partnership, firm, trust, estate, department, board, bureau or agency or any other legal entity whatsoever, which is recognized by law as the subject of rights and duties. Whenever used in any clause prescribing and imposing a penalty or imposing a fine or imprisonment, the term "person" shall include the members of an association, partnership or firm and the officers of any agency or corporation.

REASONABLE ATTORNEYS' FEES — All those attorneys' fees incurred by the Township in bringing an action to enforce this article and collect fines and penalties in connection therewith and shall be at that hourly rate annually approved by the Board for the Township Solicitor. **[Added 11-28-2005 by Ord. No. 3-2005]**

SEWAGE — Any substance which contains any of the waste products or excrement or other discharge from the bodies of human beings and any noxious or deleterious substance being harmful or inimical to the public health or to animal or aquatic life, or to the use of water for domestic water supply, or for recreation, or which constitutes pollution under the Pennsylvania Clean Streams Law Editor's Note: See 35 P.S. § 691.1 et seq. or any other local, state or federal government regulations as the same now exist or as hereinafter enacted or amended.

SEWAGE ENFORCEMENT OFFICER — The local enforcement officer appointed by the Board who issues and reviews permit applications and conducts such investigations and inspections as are necessary to implement this article and the rules and regulations promulgated hereunder.

SEWAGE SYSTEM — A system of piping, tanks or other facilities serving a single lot and collecting and disposing of sewage in whole or in part into a holding tank for ultimate conveyance to another site for final

disposal.

TOWNSHIP — Pocopson Township, Chester County, Pennsylvania.

§ 170-3. General regulations; permit required.

A. It shall be unlawful for any person to install a holding tank as part of a sewage system in the Township.

B. It shall be unlawful for any person to operate, use, alter or maintain, or occupy a building or structure with, a holding tank as part of a sewage system within the Township without first having been issued a permit by the Board and by the county and/or state agency having jurisdiction.

C. It shall be unlawful for any person to operate, use, alter or maintain a holding tank, the design, operation and maintenance of which does not comply with each of the requirements of this article, the regulations promulgated hereunder, and the statutes, rules and regulations of other state or county regulatory agencies having jurisdiction.

D. It shall be unlawful for any person to violate any other provision of this article with respect to the installation, operation, use or maintenance of a holding tank.

§ 170-4. Application and permit procedure.

Within 30 days of the effective date of this article, the following procedures shall be required of all persons who operate, use, alter or maintain a holding tank within the Township:

A. Application for a permit to operate, use, alter or maintain a holding tank shall be made to the Board.

B. The application shall contain the following information:

(1) A copy of the permit application filed with the Pennsylvania Department of Environmental Protection (DEP) and/or the Chester County Health Department, as applicable, including all such information required by the Pennsylvania Sewage Facilities Act Editor's Note: See 35 P.S. § 750.1 et seq. Application for Sewage Disposal Systems form ER-BCE-128, or equivalent.

(2) Where the Official Act 537 Plan does not permit holding tanks on the lot for which the permit under this article is sought, an application shall include a request for the revision of the Official Plan to provide for holding tanks, and that request shall include a schedule approved by DEP for replacement by adequate sewage service approved by DEP.

(3) A schematic plan of the installation, including:

(a) The tank design and capacity; and

(b) All appurtenances to the tank, including the proposed sewage system.

(4) A specific description of the sewage system to which the holding tank is to be connected.

(5) A copy of the holding tank manufacturer's specifications for the tank.

(6) The specifications for the safety control device, described in § 170-6 hereof.

(7) A description of the maintenance control and disposal plan proposed by the owner to service the holding tank, including a copy of the maintenance contract.

(8) A plot plan of the property showing the location of the buildings and any proposed buildings and the location of the holding tank.

(9) A description of the zoning district in which the property is located.

(10) A description of the use and the maximum number of people the holding tank serves.

(11) A copy of the maintenance security documentation as required by § 170-10.

(12) A specific description, including a schematic drawing, of the proposed back-up system required by § 170-15.

(13) If issued, a copy of the permit granted by the Pennsylvania Department of Environmental Protection and/or the Chester County Health Department for the use of the holding tank on the property.

(14) A copy of the written contract with a licensed sewage contractor for the collection, transportation and

disposal of the contents of the holding tank.

C. If the Sewage Enforcement Officer determines that an application is incomplete, or such Officer is unable to verify the information submitted, the applicant shall be notified in writing within seven days and the time for acting thereon shall be extended 15 working days beyond the date of receipt of adequate supplementary or amendatory data.

§ 170-5. Permit issuance.

A. Prior to the issuance of any holding tank permit, the Sewage Enforcement Officer shall:

(1) Inspect the property;

(2) Determine that the application meets the requirements of § 170-4;

(3) Determine that the holding tank and the sewage system meet the requirements of this article and all regulations promulgated hereunder;

(4) Secure deposit by the owner with the Township of the required security escrow for maintenance of the holding tank;

(5) Determine compliance by the applicant with any and all requirements of the Pennsylvania Department of Environmental Protection and/or the Chester County Health Department;

(6) Secure a copy of the permit for the holding tank issued by either of the latter two agencies.

B. No application for a sewage holding tank permit shall be acted upon or processed by the Sewage Enforcement Officer unless accompanied by the required permit application fee established by resolution of the Board.

C. Upon determination by the Sewage Enforcement Officer that all requirements of this article have been met by the owner, he shall issue a holding tank permit to and in the name of the owner.

D. Permits shall be issued or denied by the Sewage Enforcement Officer in writing within seven calendar days after receipt of the required permit application fee and the completed application for the permit; provided, however, that no permit shall be issued under any circumstances unless and until the holding tank has been approved by the Pennsylvania Department of Environmental Protection and/or the Chester County Health Department by issuance of a permit.

E. When any initial or subsequent inspection by the Sewage Enforcement Officer reveals that the installation or operation of the holding tank or appurtenant system differs from the information and representation set forth in the application, final permit shall be revoked by the Sewage Enforcement Officer or the Board as applicable, and no further operation of the holding tank or the appurtenant sewer system shall take place until the permit has been reinstated and approved for reissuance.

§ 170-6. Minimum standards for equipment.

A. Holding tanks authorized by this article shall meet, as a minimum, the design standards set forth in Title 25, Rules and Regulations, Part I, Department of Environmental Protection, Subpart C, Article I, Chapter 73, Standards for Sewage Disposal Facilities, Subsection 73.62.

B. The holding tank shall be large enough to hold a minimum of four days' sewage from the residential or commercial use situated on the improved property, but shall have a minimum capacity of 1,000 gallons or a volume equal to the quantity of waste generated in four days, whichever is larger, with the maximum capacity not to exceed 5,000 gallons.

C. The holding tank shall be equipped with a warning device to indicate when the tank is filled to within 75% of its capacity. Such device shall create an audible and visual signal at the location frequented by the improved property owner.

§ 170-7. Minimum standards for operation.

A. No improved property owner utilizing a holding tank shall permit the tank to overflow or to reach more than 90% of capacity without arranging for disposal of the contents thereof as required by this article. In addition to the sanctions imposed by this article for violation, any overflow or allowance of such excess capacity shall result in automatic revocation of the permit and forfeiture of the maintenance escrow deposit lodged with the

Board. The Board is hereby authorized to expend so much of the escrow deposit, at any time, as may be required to dispose of the holding tank's contents. Within 10 days after such expenditure, the owner shall replace such expended security by redepositing the same with the Board. The holding tank permit shall not be reissued unless and until the security is fully refunded by the owner.

B. During the period of operation of the holding tank, the owner shall maintain in full force and effect the required maintenance escrow deposit and the required disposal contract, and shall promptly renew or replace any such contract which has expired or is otherwise terminated.

C. The owner shall maintain the holding tank and attached sewage system in a fully operational condition at all times, and shall repair, replace or enlarge, as required, any worn or defective parts, including the holding tank, or when ordered by the Sewage Enforcement Officer to do so.

D. It shall be the responsibility of the owner to forthwith make any corrections, improvements or replacements to the holding tank or the sewage system ordered by the Sewage Enforcement Officer and determined by him to be necessary for its safe operation in accordance with its design and purpose.

§ 170-8. Restrictions on use.

Any use of holding tanks within this Township is restricted to:

A. Those cases in which the DEP, or the Chester County Health Department (if authorized by DEP), states that such holding tank use is necessary to abate a nuisance or a public health hazard; or

B. Emergency use (i.e., for 90 days or less, or other time approved by DEP) when no other DEP or Chester County Health Department approved sewage disposal system can be installed upon the property because of physical restrictions peculiar to the property.

§ 170-9. Disposal contract.

Prior to the issuance of any permit hereunder, the owner shall file with the Board a copy of a maintenance contract in which the owner has contracted with a licensed sewage disposal hauler to remove the contents of the holding tank for purposes of disposing of the sewage at another site (approved by DEP) within the time and in the manner prescribed by this article and the regulations of any other regulatory authority having jurisdiction. Such contract shall be renewed or replaced and kept in full force and effect during the entire period in which a holding tank is utilized on the improved property. Failure to maintain such a contract shall cause an immediate revocation of the holding tank permit.

§ 170-10. Maintenance escrow deposit.

A. Prior to the issuance of the holding tank permit, the owner shall deposit with the Board financial security equal to 100% of the cost of the holding tank and its appurtenances, together with an additional sum equal to the cost for cleaning the holding tank for a period of not less than six months. The purpose of this escrow deposit, which shall be renewable from year to year, is to indemnify the Board against all costs and expenses which the Board may incur by reason of the failure of the improved property owner to maintain the holding tank in a fully operational condition or to dispose of the holding tank's contents in accordance with the requirements of this article. The form and type of financial security shall be approved by the Township Solicitor, and may be either a federal or commonwealth chartered lending institution irrevocable letter of credit or a cash escrow account in such lending institution, deposited in the name of the Board in an interest-bearing account. So long as the owner is in compliance with the requirements of this article, interest earned on the account shall be payable to the owner at least annually.

B. The amount of the required deposit shall be established by submission to the Board of bona fide proof of the cost of the holding tank and its installation or, in the absence of such bona fide proof, at the Board's discretion, the cost thereof shall be established by estimate prepared by the Township Engineer. The Board may require an increase in the amount of deposit upon and before any permit renewal to compensate for a decrease in the value of the deposit occasioned by inflation, and in the specific percentage amount by which such value has been decreased thereby.

C. The Township may expend all or any part of such security deposit for those purposes set forth in the foregoing subsections of this section. Upon expenditure of the Board of any portion of such deposit, the owner shall be required to immediately refund the security deposit as required by § 170-7 hereof.

D. In the event of a cash escrow deposit, the owner shall execute the standard Township escrow agreement for such purpose.

§ 170-11. Inspection and entry on premises.

A. The Sewage Enforcement Officer shall make all of the required inspections, and may, with approval of the Board, engage such expert opinion as may be deemed necessary to report upon unusual technical issues which may arise.

B. The Sewage Enforcement Officer or his designated representative, or both, shall have the authority at any time to enter upon the premises of the improved property owner to inspect the holding tank, the sewage system and its appurtenances or the site of any such proposed holding tank, sewage system or its appurtenances. Failure of the owner to permit inspection at reasonable hours, and in the case of emergency, at any time, shall result in an immediate revocation of any permit issued under the authority of this article.

§ 170-12. Abatement of nuisances and violations.

A. The Sewage Enforcement Officer shall issue a cease-and-desist order to the owner whenever he determines that any violation of this article has occurred. Within 48 hours of receipt of such cease-and-desist order, the owner shall correct the cited violation, and shall cease and desist from the conduct proscribed by such order. Failure to comply within such time period shall result in revocation of any permit previously issued.

B. Failure to comply with a cease-and-desist order within the time designated hereinabove shall subject the owner to the penalty provisions of § 170-17 hereof; provided, however, that the issuance of a cease-and-desist order shall not be a condition precedent to a prosecution for a violation of this article.

C. In addition to any other remedies provided herein, a violation of any provision of this article, or any rule or regulation promulgated under the authority hereof, shall constitute a nuisance and shall be subject to abatement by the Board by appropriate equitable or legal relief from a court of competent jurisdiction.

§ 170-13. Right of appeal.

A. Any person aggrieved by action of the Sewage Enforcement Officer may, within 30 days of receipt of notice of such action, request in writing a hearing before the Board.

B. All permit revocations provided herein shall be provisional and shall become final only after written notice and 30 days' opportunity to request a hearing have been granted to the owner. The Board shall hold a hearing within 30 days after receipt of such request, and the DEP and the Chester County Health Department shall be notified of the hearing by the Board.

C. Hearings under this section and any subsequent appeal shall be conducted pursuant to the Local Agency Law. Editor's Note: See 2 Pa.C.S.A. §§ 551 et seq. and 751 et seq.

§ 170-14. Right to promulgate regulations.

The Board may, from time to time, adopt such rules, regulations, standards and procedures as shall be determined necessary in order to properly administer the provisions of this article; provided, however, that no such rule or regulation, standard or procedure shall be adopted if the same is inconsistent with any Pennsylvania statute or rule or regulation promulgated thereunder. Upon such promulgation by the Board, the same shall become fully enforceable by the Board under this article.

§ 170-15. Emergency back-up system.

Each holding tank disposal sewage system shall, in its design and plan, provide for a viable back-up system that can be installed and implemented if the tank becomes inoperative. Such system shall be capable of implementation within 72 hours after the tank becomes inoperative.

§ 170-16. Revocation of permits.

In addition to the grounds for revocation detailed hereinabove, a final permit shall be revoked by the Board or the Sewage Enforcement Officer for any one or more of the following reasons:

A. When the original decision of the Board or Sewage Enforcement Officer fails to conform with the Pennsylvania Sewage Facilities Act, 35 P.S. § 750.1 et seq., and regulations thereunder;

B. When any change which has occurred in physical conditions of any improved property will materially affect the operation of the sewage system or the disposal system covered by the permit issued by the Board;

C. When one or more test materials to the issuance of the permit have not been properly conducted;

D. When information material to the issuance of the certificate or permit have been falsified;

E. When the permittee violates the Sewage Facilities Act, regulations thereunder or conditions of the permit; or

F. If the owner fails to file a request for a hearing in accordance with the requirements hereinabove, the revocation shall be effective and final.

§ 170-17. Violations and penalties.

Editor's Note: Amended at time of adoption of Code (see Ch. 1, General Provisions, Art. I).

Any person who violates or permits the violation of any provision of this article shall, upon being found liable thereof in a criminal enforcement proceeding, pay a fine of not more than $1,000, plus court costs and reasonable attorneys' fees, and may be incarcerated for a period not exceeding 90 days for each and every violation. Such fine, costs, attorneys' fees, and incarceration, after being reduced to a final, unappealed judgment, shall be enforced by the Township pursuant to the applicable Rules of Criminal Procedure. Each twenty-four-hour period during which failure to comply continues shall constitute a separate violation. The Township Code Enforcement Officer shall initiate criminal enforcement proceedings in order to achieve compliance with this article.

ARTICLE II Individual Sewage Disposal Systems [Adopted 2-26-1990 by Ord. No. 1-1990]

§ 170-18. Purposes.

A. The purpose of this article is to establish procedures for the use, inspection and maintenance of private sanitary sewage disposal systems within Pocopson Township. It is hereby declared that the enactment hereof is necessary for the protection, benefit and preservation of the health, safety and welfare of the inhabitants of this Township and is further authorized by the rules and regulations of the Pennsylvania Department of Environmental Protection, as published in Chapter 71 of the Pennsylvania Code.

B. Nothing to the contrary withstanding, however, any and all construction, maintenance, repair and/or reconstruction of any individual or community sewage system shall be in full conformance with the rules and regulations of the Chester County Health Department and/or the Pennsylvania Department of Environmental Protection pursuant to the Pennsylvania Sewage Facilities Act. Editor's Note: See 35 P.S. § 750.1 et seq.

§ 170-19. Definitions.

A. Unless the context specifically and clearly indicates otherwise, the meaning of the following terms used in this article shall be as herein defined:

PERSON — Any natural person, corporation, partnership, joint venture, sole proprietorship, firm, association and any other entity of whatever type. Editor's Note: Added at time of adoption of Code (see Ch. 1, General Provisions, Art. I).

REASONABLE ATTORNEYS' FEES — All those attorneys' fees incurred by the Township in bringing an action to enforce this article and collect fines and penalties in connection therewith and shall be at that hourly rate annually approved by the Board for the Township Solicitor. Editor's Note: Added at time of adoption of Code (see Ch. 1, General Provisions, Art. I).

SEWAGE TREATMENT PLANT — A facility which receives sanitary sewage and treats such sewage to reduce the organic and other pollutants to a degree and by such methods as are permitted by the Pennsylvania Department of Environmental Protection and/or the Chester County Health Department. Sewage treatment plants may include primary treatment in septic tanks, and secondary and tertiary treatment systems recognized and approved by the Pennsylvania Department of Environmental Protection

and such additional facilities as are required to provide subsurface, spray irrigation or stream discharge disposal of treated effluents.

SEWERAGE — The system of sewers and appurtenances for the collection, transportation, pumping, treating and disposing of sanitary sewage.

SPRAY IRRIGATION — The disposal of treated sewage by spraying on the surface of the ground, designed and permitted in accordance with the regulations of the Pennsylvania Department of Environmental Protection.

STREAM DISCHARGE — The discharge of treated sewage wastes to a stream or to the surface water of the commonwealth, designed and permitted in accordance with the regulations of the Pennsylvania Department of Environmental Protection.

SUBSURFACE DISPOSAL SYSTEM — The discharge and disposal of sewage wastes treated by septic tank or other means through a buried piping system and directly into the soil beneath the surface of the ground.

B. The definition of words and terms in Chapter 250, Zoning; Chapter 190, Subdivision and Land Development; or Article I, Holding Tanks, of this chapter, shall apply to the same words and terms contained in this article.

§ 170-20. Wastewater treatment and feasibility report.
[Added 3-24-2008 by Ord. No. 1-2008 Editor's Note: This article also provided for the renumbering of former §§ 170-20 through 170-26 as §§ 170-21 through 170-27, respectively. **]**

All preliminary subdivision and land development plan applications shall include a wastewater treatment and disposal feasibility report containing the following information:

A. The report shall include the complete Sewage Facilities Planning Module, as provide by the Pennsylvania Department of Environmental Protection, including complete site testing information.

B. The report shall demonstrate the adherence of the plan to all relevant portions of this chapter (Chapter 170 of the Code of Pocopson Township).

C. The report shall evaluate individual on-lot sewage systems as the preferred technology for single-family dwellings on lots of one acre or greater in size, site conditions permitting, unless specified otherwise by the official Township Act 537 Sewage Facilities Plan.

D. When the installation of a community sewage system is contemplated, the report shall begin the evaluation of alternatives with technology, as set forth herein at § 170-20D(1). The evaluation shall continue in sequence. The most preferred feasible alternative, as selected by the Township at the Township's discretion, shall be the technology selected for use.

(1) Alternatives shall be evaluated in the following order of the Township's preference as established below:

(a) Lagoon treatment system with sand or membrane filtration and spray irrigation and/or other community reuse systems.

(b) Lagoon treatment system with sand or membrane filtration and drip irrigation.

(c) Community tertiary treatment with membrane filtration system with spray irrigation.

(d) Community tertiary treatment with membrane filtration system with drip irrigation.

(e) Community aerobic treatment with sand filtration and spray irrigation.

(f) Community aerobic treatment unit with membrane filtration system and drip irrigation.

(g) Community septic tank or tanks with sand filter treatment and denitrification followed by subsurface diffusion.

(h) Community tertiary treatment with membrane filtration system with subsurface diffusion.

(i) Community aerobic treatment with sand filter and denitrification followed by subsurface diffusion.

(j) Connection to an existing spray irrigation treatment facility, provided there is adequate treatment capacity and irrigation area available or to be provided for current, previously committed, and projected uses.

(k) Central holding tank (only for existing uses on a temporary basis until a preferred treatment system is accessible);

(l) Other wastewater options at the discretion of the Township.

(2) When evaluating the feasibility of the preferred alternatives, a combination of options may be required. For example, if a site is capable of spray irrigating only 50% of its effluent and the only other feasible option is drip irrigation, the largest amount of the site possible shall be spray irrigated and only the remainder of the site shall be disposed of utilizing the less preferred option. Notwithstanding the foregoing, the sequence of alternatives shall be followed in evaluating the combination of options.

(3) Lagoon treatment systems are the preferred method of treatment and shall be used wherever possible. The lagoons shall be designed as deep aerated cells with bottom aeration.

(4) Alternatives in § 170-20D(1)(c) through (i) shall include a lagoon or other storage facility capable of storing a minimum of 20 days of flow. More storage capacity may be required, at the Township's discretion, if the treatment method involves drip irrigation.

(5) Any stream discharge proposal shall require a minimum of 30 days of aerated storage followed by discharge to wetland treatment cells prior to entry into the stream. A stream discharge proposal shall not be considered until such time as the applicant has completed a four-season monitoring of chemical and biological stream quality indicators.

(6) Alternatives shall be evaluated in consideration of the Township wastewater policies as established in the official Act 537 Sewage Facilities Plan. The report shall state how the selected alternative will support the stated policies.

E. The Township reserves the right to require the applicant, or to hire a consultant at the applicant's expense, to evaluate additional wastewater treatment and disposal alternatives in addition to the alternative proposed to determine if a technology more consistent with municipal wastewater and land use policies is feasible.

F. The Township reserves the right to require the implementation of a system other than the system proposed by the applicant, if the Township's selection could result in long-term environmental protection and economic savings to the Township and/or system users.

G. The report shall include a detailed breakdown of operation and maintenance costs for the proposed system to demonstrate the estimated yearly cost per unit served. The operation and maintenance budget shall include a capital reserve component to provide for replacement of major equipment.

H. The report shall be prepared by a registered professional engineer. The report shall be submitted with the preliminary plan for review and recommendation by the Township Engineer or other consultant as selected by the Township.

I. Where a community sewage system utilizing surface or subsurface disposal of wastewater effluent is proposed, hydrogeologic and permeability testing shall be required as part of the report.

J. The report shall contain sufficient engineering and cost data, evaluations and recommendations to enable the Township to evaluate the advantages or disadvantages of providing the subdivision or land development with the various methods of wastewater treatment and disposal considered and that which is ultimately selected.

§ 170-21. Independent community sewage systems.

A. Inspection of sanitary sewage systems. Where a community sewage system is owned and operated by a homeowners' association or an independent sewage treatment plant is privately owned and operated, the Township shall have the right to conduct such regular and reoccurring inspections as may be required to assure that the system is being properly operated and maintained. The scope of such inspections shall be established for each sanitary sewage system depending upon the type and complexity of the proposed system. For this purpose, the Township shall appoint an inspector, which inspector may be a person or company or firm skilled and, where appropriate, licensed in the construction and operation of sanitary sewer systems and treatment plants. The costs of such inspection shall be borne by the party owning the sanitary sewage system.

B. Submission of budgets and reports.

(1) Any homeowners' association owning and operating a community sewage system shall upon formulation of its annual budget submit a copy of such budget to the Secretary/Treasurer of the Township for approval by the Board of Supervisors. The budget shall include, among other things:

(a) The anticipated fees per household or other connection, to be collected by the homeowners' association.

(b) The total income anticipated.

(c) A breakdown of estimated operating and maintenance costs.

(d) The addition to, payments anticipated from, and balances in accounts set aside for replacement of the various elements of the sewage collection and treatment system.

(2) Any member of the homeowners' association, or the Township, shall have the right, at such time and place as is reasonable, to inspect the books and records of the homeowners' association reflecting receipts and disbursements relating to operation of the community sewage system.

C. Township operation of independent community sewage disposal systems.

(1) Acceptance of systems. The Township may act to accept any independent sanitary sewage system at any time that the Board deems it to be in the public interest to do so; in which case, the operation and maintenance responsibilities of the owners shall cease. In such a case, the Township will establish an independent sanitary sewage district and establish sewer rates in accordance with a duly enacted ordinance, said rates to be sufficient to provide for all of the operating, maintenance and replacement requirements of the system. The collection of said rates shall be in accordance with the terms of the ordinance.

(2) Right to make repairs and perform maintenance.

(a) In the event that the owner of the facility, or any successor thereof, shall at any time fail to maintain the facilities, or shall at any time fail to perform any other act of maintenance or repair necessary for the safe and efficient operation of the system, the Township may serve written notice upon the owner of the facility or, if the owner is a homeowners' association, the members thereof, setting forth:

[1] The manner in which the owner has failed to maintain the facilities in reasonable condition, or otherwise as required.

[2] A demand that such deficiencies of maintenance be corrected within 30 days.

[3] The right of the owner, within seven days of the date of notice, to request, in writing, a hearing which shall be held within 14 days of receipt of a request therefor.

(b) Public hearing. At such a hearing the Township may modify the terms of the original notice concerning the deficiencies and may give an extension of time within which they shall be corrected. If the deficiencies, or the modifications thereof, shall not be corrected within 30 days or within any extension, the Township may, but shall not be required to, enter upon the facilities and maintain the same for a period of one year. The said maintenance by the Township shall not constitute a taking of the property or any part thereof nor vest in the public any rights to use the same.

(c) Burden of proof. Before the expiration of said year, the Township shall, upon its initiative or upon the request of the owner of the facility, call a public hearing upon notice to owner. At the hearing, the owner shall show cause why such maintenance by the Township shall not, at the option of the Township, continue for a succeeding year. If the Township shall determine that the owner is ready and able to operate and maintain the facility in reasonable condition, the Township shall cease to operate or maintain the facilities at the end of said year. If the Township shall determine that the owner is not ready and able to maintain the facilities in a reasonable condition, the Township may, in its discretion, continue to maintain and operate the facilities during the next succeeding year and, subject to a similar hearing and determination, in each year thereafter.

(d) Cost of corrections, repairs and maintenance. With respect to any independent sanitary sewage system which, pursuant to this article, the Township shall enter upon and repair, correct or maintain same, the Township shall have the right to assess ratably the owners of the property served by the facility, which assessment shall become a lien on said properties. With respect to

facilities owned by homeowners' associations, the cost of such operation, maintenance and enforcement proceedings by the Township shall be assessed ratably, in accordance with present tax assessments, against the owners of property within the development(s) served by the facility and shall become a lien on the said properties. The Township, upon entering the property for the purposes of maintenance, correction or repair, shall file a notice of such lien in the office of the Prothonotary of Chester County.

(e) Emergency maintenance. Should a default in the required maintenance as described above cause a condition which the Township determines, in its reasonable discretion, to be an emergency requiring immediate action to avert possible property damage or personal injury, the Township may, but need not, enter the property and immediately undertake the necessary repair or maintenance without the prior notice or hearing described in Subsection C(2)(a), (b) and (c) herein, in accordance with the rules and regulations of the Chester County Health Department and/or the Pennsylvania Department of Environmental Protection.

§ 170-22. Combined on-lot systems and on-lot systems utilizing treatment plant and stream discharge or spray irrigation for disposal.

The following provisions shall apply to the construction and operation of any combined on-lot subsurface disposal systems or the construction and operation of any individual on-lot disposal system serving one or two lots which relies upon stream discharge or spray irrigation for disposal of less than 1,000 gallons per day of effluent:

A. The construction and operation of such systems shall be subject to the issuance of appropriate permits from the Chester County Health Department and/or the Pennsylvania Department of Environmental Protection.

B. Before making application for such permits, plans for the proposed system, as well as any and all other materials required to be submitted to the Chester County Health Department and/or the Pennsylvania Department of Environmental Protection pursuant to the then-applicable statutes, regulations or directives, shall be submitted to Pocopson Township for review by the Township Engineer or such other consultant as the Township deems appropriate. The Township shall communicate its findings and recommendations to the appropriate officials at the Pennsylvania Department of Environmental Protection, Chester County Health Department, and any other interested or affected agency or party.

C. The construction of such systems shall be subject to the inspection and approval of the Township Engineer or consultant, as well as appropriate Chester County Health Department and/or Pennsylvania Department of Environmental Protection personnel.

D. The Township may require background testing of wells in the vicinity of any proposed combined on-lot subsurface disposal system and may also require the testing of any stream flows or groundwater through monitoring wells appropriate to determine the background conditions of stream flow and groundwater prior to the construction of stream discharge or spray irrigation systems. Such background testing shall generally be in conformity with the Pennsylvania Department of Environmental Protection and the Chester County Health Department regulations whether or not required by the Pennsylvania Department of Environmental Protection.

E. The Township reserves the right to require the deposit of 5% of the replacement cost of the system or $4,000, whichever is greater, in an escrow account to guarantee the proper operation of such systems, which escrow shall be released after two years of acceptable operation. **[Amended 11-28-2005 by Ord. No. 3-2005]**

F. The Township may require effluent to be discharged to streams or spray irrigation systems to be tested on a monthly basis until such time as the effective operation of the system is established, after which the Township may reduce such testing intervals to quarterly.

G. The Township may require that sand filters be installed as a last step of effluent treatment before discharge to combined subsurface disposal systems or to stream discharge or spray irrigation systems.

H. The property owner or owners will be required to enter into an agreement with the Township guaranteeing the proper operation and maintenance of such systems and providing that the Township may inspect such systems on a monthly or quarterly basis. Upon discovering any malfunctioning in the operation of such systems and after notice to the property owners and the failure of the said property owners to make the

necessary repairs or replacement, the Township may enter upon the property and perform the necessary steps to restore the system to proper operation in accordance with the rules and regulations of the Chester County Health Department and/or the Pennsylvania Department of Environmental Protection. The agreement shall also provide that all expenses of the Township shall be paid by the owner or owners of the system involved with the right of the Township to file municipal liens to enforce the collection of such cost.

I. The costs of the reviews, inspections and other matters undertaken by the Township and its designees under this section shall be borne by the owner(s) of the system.

§ 170-23. Individual on-lot subsurface disposal system.

The operation and maintenance of an individual on-lot subsurface disposal system shall be the responsibility of the lot owner and will not be subject to the continuing surveillance and inspection by the Township. It shall be the responsibility of the owners of individual on-lot subsurface disposal systems to pump the tank every three years, and make such other repairs or replacement as are necessary to prevent the malfunctioning of the system. The Township, however, reserves the right to require property owners served by individual on-lot disposal systems to take steps to abate the malfunctioning of such systems including, but not limited to, the replacement of the system, the pumping of septic tanks or the repair or replacement of any defective elements of such systems. This is in addition to any remedies available to the Chester County Health Department or Pennsylvania Department of Environmental Protection. The construction and/or replacement of individual on-lot disposal systems shall be subject to the issuance of appropriate permits by the Chester County Health Department.

§ 170-24. Official plan revision.

A. Where a proposed publicly or privately owned individual community sewage system requires a change or revision in the Township's Official Plan under Act 537, the individual proposing the system shall provide the Township with all information required under the regulations promulgated by the Pennsylvania Department of Environmental Protection or Chester County Health Department.

B. Prior to approving, or recommending any revisions or amendments to the Township's Act 537 Plan, the person proposing any changes or amendments to the Act 537 Plan which would provide for stream discharge sewage disposal shall show the unavailability of any alternative site, as well as the efforts made to obtain same, on which a subsurface or spray treatment sewage disposal system could have been located.

§ 170-25. Cost of inspections.

The fees for any reviews, inspections or other matters undertaken by the Township, or its designees under this article, shall be sufficient to cover the fair and reasonable expense of those activities, and shall be as prescribed by resolution of the Board of Supervisors.

§ 170-26. Right to promulgate.

The Board may, from time to time, adopt such rules, regulations, standards and procedures as shall be determined necessary in order to properly administer the provisions of this article; provided, however, that no such rule or regulation standard or procedure shall be adopted if the same is inconsistent with any Pennsylvania statute or rule or regulation promulgated thereunder. Upon such promulgation by the Board, the same shall become fully enforceable by the Board under this article.

§ 170-27. Violations and penalties.
[Amended 11-28-2005 by Ord. No. 3-2005]

Any person who violates or permits the violation of any provision of this article shall, upon being found liable thereof in a criminal enforcement proceeding, pay a fine of not more than $1,000, plus court costs and reasonable attorneys' fees, and may be incarcerated for a period not exceeding 90 days for each and every violation. Such fine, costs, attorneys' fees, and incarceration, after being reduced to a final, unappealed judgment, shall be enforced by the Township pursuant to the applicable Rules of Criminal Procedure. Each twenty-four-hour period during which failure to comply continues shall constitute a separate violation. The Township Code Enforcement Officer shall initiate criminal enforcement proceedings in order to achieve

compliance with this article.

ARTICLE III Sanitary Sewage System [Adopted 3-24-2008 by Ord. No. 1-2008]

§ 170-28. Definitions.

The following definitions shall apply to the regulation of sanitary sewer use and wastewater disposal in Pocopson Township:

AVERAGE DAILY FLOW — Average number of gallons per day of sanitary sewage calculated by taking the total quantity of flow delivered to a point during the thirty-day time period immediately proceeding the date of calculation and dividing by 30 days.

BILLING UNIT — Equal to that number which has been the basis for the design of the wastewater treatment plant which may be memorialized by a resolution adopted by the Board of Supervisors. In Sewer District One, the standard billing unit will be for 225 gallons per day or as hereinafter provided. For residential customers, each dwelling unit shall be considered a billing unit. With respect to non-single-family dwellings, flats or apartments having the use of the sewage collection system through one sewer lateral, each dwelling unit shall be considered at least one billing unit as if each such unit had a direct and separate connection to the sewage collection system. For commercial or industrial properties, the number of billing units shall be determined by dividing the total daily water usage projected from standard usage rates (as set forth in a resolution) for different uses by 150 to reflect higher BOD loadings and managerial costs for nonresidential uses. If there is a disagreement over actual usage, the daily water usage may be verified by metering for at least two years when the commercial or industrial operation has been fully operational, but in any event the usage rate shall not be reduced by 20% of the standard usage rates.

BIOCHEMICAL OXYGEN DEMAND (BOD) — The quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure in five calendar days at 20° C., expressed in milligrams per liter (mg/l).

COMBINED SEWER — A sewer intended to receive both wastewater and storm- or surface water.

COMMERCIAL ESTABLISHMENT — Any room, group of rooms, building or enclosure used or intended for use in the operation of one business enterprise for the sale and distribution of any product, commodity, article or service or used or intended for use for any social, amusement, religious, educational, charitable or public purpose and containing plumbing facilities for kitchen, toilet or washing facilities.

COMMUNITY SEWAGE SYSTEM — A system, whether publicly or privately owned, for the collection of sewage from two or more residential lots and for the treatment or disposal of the sewage on one or more nonresidential lots.

CONNECTION NOTICE — Written notification by the Township, by personal service or registered mail, that community or public sewer is available to the property and that the property must connect thereto, at the owner's expense, within 60 days.

DWELLING UNIT — Each single-family residence connected to a sewage collection system shall be considered a dwelling unit. With respect to non-single-family dwellings, including but not limited to apartments, having the use of the sewage collection system through one sewer lateral, each residential unit shall be considered a dwelling unit as if such unit had a direct and separate connection to the collection system. Each store or office having use of the sewage collection system through one sewer lateral shall be considered at least one dwelling unit as if each such unit had a direct and separate connection to the collection system. With respect to commercial establishments connected to a separate lateral, each store, office, etc., shall be considered a dwelling unit. With respect to multiple, nonresidential establishments utilizing a single toilet facility, the Township shall determine the number of dwelling units. With respect to industrial establishments, the number of dwelling units shall be determined by the Township. In no case shall the number of dwelling units be less than one.

EQUIVALENT DWELLING UNIT (EDU) — This term is synonymous and interchangeable with "billing unit" for purpose of establishing user fees, sewer rents, and tapping fees.

FEE, DEBT SERVICE — The fee charged for the construction and financing costs, which will be billed monthly or in another specified period determined by the Township.

FEE, SEWER CONNECTION — A one-time fee charged by the Township at the time of connection to the public sewer.

FEE, SEWER SERVICE — The annual sewer service charge, which will be billed monthly or in another specified period as determined by the Township.

FEE, TAPPING — A one-time fee charged by the Township at the time of connection to public sewer or upon determination by the Township based on a change of use or volume of flow increasing the number of EDUs after the initial connection is made.

GARBAGE — The animal and vegetable waste resulting from the handling, preparation, cooking and/or serving of foods from residences, offices, hotels, stores, restaurants, commercial establishments and similar uses within the Township.

NATURAL OUTLET — Any outlet, including storm sewers and combined sewer overflows, into a watercourse, pond, ditch, lake or other body of surface water or groundwater.

OWNER — Any person who is the occupant, tenant or holder of title to any property served by and connected to the public sewer.

PERSON — A natural person, a partnership, an association, a corporation, a joint-stock company, a trust, an unincorporated association, a governmental body, a political subdivision, a municipality, a municipal authority or other group entity.

pH — The logarithm of the reciprocal of the hydrogen ion concentration, indicating the degree of acidity or alkalinity of a substance. The concentration is the weight of hydrogen ions, in grams, per liter of solution. Neutral water, for example, has a pH value of seven and a hydrogen ion concentration of 10^{7}.

PROPERLY SHREDDED GARBAGE — The wastes from the handling, preparation, cooking and dispensing of food that has been shredded to such a degree that all particles will be carried freely under the flow conditions normally prevailing in public sewers, with no particle greater than 1/2 inch (1.27 centimeters) in any dimension.

PUBLIC SEWER — A common sewer contained within a temporary sewer district.

SANITARY SEWAGE SYSTEM — All facilities, including sewers, inceptors, force mains, metering devices, pump stations, and other appurtenances, for the collecting, pumping, treating and disposing of sanitary sewage from a community sewage system designated as a temporary or permanent sewer district.

SANITARY SEWER — A sewer that carries water-borne wastes from residences, commercial buildings, industrial plants and institutions, together with minor quantities of ground, storm and surface waters that are not intentionally directed into the sewer.

SEPTAGE — Material removed from septic tanks serving individual or small groups of homes and businesses. It does not include material from septic tanks, holding tanks or other treatment units serving industries, which is classified as industrial waste.

SEWAGE — Water that carries the wastes of a community. The preferred term is "wastewater."

SEWER — A pipe or conduit that carries wastewater or drainage water.

SLUG — Any sanitary sewage discharge which, for a period of 15 minutes, shall exceed five times the average daily flow. The term particularly applies to the sudden emptying of large vats, tanks, or swimming pools into the sanitary sewage system.

TOWNSHIP — Pocopson Township, Chester County, Pennsylvania.

TOXIC POLLUTANTS — Any pollutant or combination of pollutants listed as toxic in the United States Environmental Protection Agency Regulations under the provisions of the Clean Water Act of 1977 (P.L. 95-217), as heretofore or hereafter amended.

WASTE, DOMESTIC — Customary household waste from kitchens, baths, showers, sinks, water closets, lavatories and laundries.

WASTE, HOLDING TANK — Wastewater removed from temporary storage tanks serving individual or small groups of businesses. It does not include industrial waste.

WASTE, INDUSTRIAL — The wastewater from industrial processes, trade or business as distinct from domestic or sanitary wastes.

WASTEWATER — The spent water of a community. From the standpoint of the source, it may be a combination of the liquid and water-carried waste from residences, commercial buildings, industrial plants, and institutions.

WASTEWATER FACILITIES — The structures, equipment and processes required to collect, carry away, and treat domestic waste, septage, and holding tank waste and industrial waste and dispose the effluent, including the treatment facilities.

WASTEWATER TREATMENT WORKS — An arrangement of devices and structures for treating wastewater, septage, holding tank waste, industrial waste, and sludge. Sometimes used as synonymous with "waste treatment plant" or "wastewater treatment plant," "water pollution control plant," or "sewage treatment plant."

WATERCOURSE — A natural or artificial channel for the passage of water, either continuously or intermittently.

§ 170-29. Temporary sewer district.

The Township has created a temporary sewer district, Sewer District One, consisting of the community sewage system for the area bounded by SR 926, the Brandywine Creek, SR 52, and the western property lines of the Pocopson Elementary School, the Toll Brothers Riverside development and the Lenape Village Shoppes. The temporary sewer district shall exist until June 1, 2011.

§ 170-30. Unlawful systems and discharges.

The following systems and discharges shall be unlawful in Township:

A. It shall be unlawful for any person to place, deposit, or permit to be deposited in any unsanitary manner, on public or private property within Township in any area under the jurisdiction of said Township, any human or animal excrement, garbage, or biological or chemical waste.

B. It shall be unlawful to discharge through any natural outlet within the Township, or in any area under jurisdiction of said Township, any wastewater or other polluted waters, except where suitable treatment has been provided in accordance with all of the provisions of this article and other applicable law.

C. It shall be unlawful for any person owning any property connected to the sanitary sewage system to erect, construct, use or maintain or cause to be erected, constructed, used or maintained any privy, cesspool, sinkhole, septic tank or other receptacle on such premises or otherwise for receiving sanitary sewage after connection to the sanitary sewer system.

D. It shall be unlawful to, at any time, erect, construct, use or maintain any pipe, conduit, drain or other facility for the discharge of sanitary sewage into the gutters of the Township, the storm sewers of the Township or upon public or private property or otherwise, except into the sanitary sewage system.

E. Any person who erects, constructs, uses or maintains a privy, cesspool, sinkhole or septic tank on any property connected to the sanitary sewage system or otherwise erects, constructs, uses or maintains any pipe, conduit, drain or other facility for the discharge of sanitary sewage in violation of this chapter shall be deemed and be declared to be erecting, constructing, using and maintaining a nuisance which the Township is hereby authorized and directed to abate in a manner provided by law.

§ 170-31. Connection standards.

No connection shall be made to the sanitary sewage system except with permission of the Township and in compliance with this chapter and the approved Act 537 Sewage Facilities Plan for the Township and all Act 537 Plan separate study areas within the Township, as well as such rules and regulations as may, from time to time, be enacted, adopted, approved or promulgated by the Township.

A. The Township or its duly authorized agent shall be notified, in writing, when it is contemplated that the character of a waste will be altered from that previously discharged in the sanitary sewage system. Such notification shall be made prior to such change and shall be submitted with a characterization analysis, the requirements of which shall be determined by the Township, at the user's expense. The Township or its duly authorized designee shall determine its acceptability before such change takes place, and such discharge shall not occur prior to the granting of approval by the Township.

B. There shall be no connection to the sanitary sewage system, any industrial, commercial, or other processed waste whose quality may be deemed to have a harmful affect on the sewage treatment or sludge-handling process or which cannot be processed by the treatment plant in the normal and ordinary course of operation. Without limiting the foregoing, any commercial or institutional facility providing food service of food processing (hot or cold) must install a grease trap (750 gallon minimum capacity) prior to discharge to a community or public sewer collection system. Grease traps will be subject to inspection by the Township to insure adequate maintenance by the property owner.

C. No matter having any one of the following characteristics shall be discharged into the sanitary sewage system, with or without pretreatment:

(1) Any liquid or vapor having a temperature higher than 150° F.

(2) Any water or waste which may contain more than 100 milligrams per liter of fat, oil and/or grease. Notwithstanding the foregoing, grease, oil and sand interceptors shall be provided when, in the opinion of the Township or its duly authorized agent, they are necessary for the proper handling of wastewater containing excessive amounts of grease and oil or sand, except that such interceptors shall not be required for residential users. All interception units shall be of type and capacity approved by the Township or its duly authorized agent and shall be so located to be easily accessible for cleaning and inspection. Such interceptors shall be inspected, cleaned and repaired regularly, as needed, by the owner at his expense.

(3) Any gasoline, benzene, paint thinner, naphtha, fuel oil or other inflammable or explosive liquid, solid, or gas.

(4) Any animal hair, ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, slugs, feathers, tar, diapers, plastics, woods, manure or any other solid or viscous substance capable of causing obstruction to the flow in the sanitary sewage system or otherwise interferes with the proper operation of the sewage collection, conveyance or treatment systems.

(5) Any waters or waste having a pH lower than 6.5 or higher than 9.5 or having any other corrosive property capable of causing damage or hazard to structures, equipment or personnel of the sanitary sewage system.

(6) Any waters or waste containing a toxic or poisonous substance or pollutants with sufficient quantity to injure or interfere with any sewage treatment process, constitute a hazard to animals or humans or constitute a hazard in the receiving waters of the sanitary sewage system. "Toxic waste" shall include, but shall not by definition be limited to, arsenic, cadmium, cyanide, iron, trivalent chromium, hexavalent chromium, nickel, copper, zinc, lead or mercury compounds. This also includes any waste classified as hazardous under the Code of Federal Regulations at 40 CFR Part 261, Identification and Listing of Hazardous Waste, as may be amended from time to time.

(7) Any radioactive waste or isotopes of such half-life or concentration as may exceed limits established by the Township in compliance with applicable state and federal laws and regulations.

(8) Any waters or wastes containing pollutants of such character and quantity that unusual attention or expense is required to handle such materials at the sewage treatment plant or in the collection and conveyance systems.

(9) Any noxious or malodorous gas or substance capable of creating a public nuisance.

(10) Any rates of flow taking on the properties of a slug.

(11) Any wastewaters containing dyes or materials that will bleed colors to a substantial extent.

(12) Any putrescible garbage that has not been properly shredded. Garbage grinders that grind garbage to a maximum dimension of 1/2 inch may be connected to sanitary sewers from homes, hotels, institutions, restaurants, hospitals, catering establishments, or similar places where garbage originates from the preparation of food in kitchens for the purpose of consumption on the premises or when served by caterers.

D. Establishments with food preparation facilities shall be required to install adequately designed pretreatment units and traps to reduce greases and biological oxygen demand (BOD) prior to discharge into an individual or community sewage system or the sanitary sewage system.

E. The construction, installation or use of any facility which causes surface and/or subsurface stormwater or groundwater to be discharged to the sanitary sewage system is prohibited. The facilities prohibited shall

include, but not be limited to, sump pumps, area drains, yard drains, perimeter drains, foundation drains, roof liters, downspouts, street inlets, storm sewers and cross-connections.

§ 170-32. Required connections.

A. Upon issuance of a connection notice, connection shall be required for those areas identified by the Act 537 Special Study Area on Map 2, Sewer Service Area, as adopted by the Board of Supervisors, as may be amended from time to time, at the owner's expense. Further, Pocopson Elementary School may connect at the sole discretion of the Township. If any owner of property required to connect shall fail or refuse to connect with and use said sewer for a period of 60 days after the connection notice to do so has been served by the Township, either by personal service or by registered mail, the Township or its designated agents may enter upon such property and construct such connection. The cost for constructing such connection, along with any collection costs and reasonable attorneys fees shall be payable immediately by the property owner upon billing. If the owner fails to pay the bill, the Township may file a municipal lien for the cost of construction, collection costs and reasonable attorneys fees within six months of the date of completion of the connection. The Township may pursue any other remedies available at law or equity. Failure by the Township to connect a property, lien a property, or pursue other remedies does not prohibit the Township from doing so in the future.

B. The owner shall construct the connection subject to inspection by the Township or its duly authorized delegate.

C. After a connection is made, any septic tanks, cesspools, and similar private wastewater disposal facilities shall be cleaned of sludge and filled with stable, uncontaminated material at the owner's expense.

§ 170-33. Damages.

In addition to civil penalties, the owner of any occupied building from which discharges of improper sanitary sewage are made shall be solely responsible for damages to the sewage system and/or sewage treatment plant resulting from the discharge of such improper sanitary sewage and for damages to others resulting from improperly treated effluent from the treatment plant due to such discharges.

§ 170-34. Determination of flows.

A. Metering; measurement of flows.

(1) The Board of Supervisors is authorized to adopt a resolution to memorialize the average daily sewage flows, which may be modified at any time by further resolution of the Board.

(2) Actual water meter or sewer meter flow data indicating peak daily flows different than those shown in the average daily sewage flow calculations adopted by resolution by the Township over a one-year period for similar residential and nonresidential establishments may be accepted for use in determining the projected flows. If the average daily flows are used, the peak daily flow shall be calculated by multiplying the average daily flow by two.

(3) For establishments with multiple uses, such as motels or bed-and-breakfast operations with restaurant services for guests and nonguests, the flow for each use shall be added to determine the total flow for the establishment.

(4) Any residential and nonresidential owner may be required by the Township or its duly authorized delegate to install, at the owner's own expense, a water meter or sewage flow meter to determine volume for billing purposes. Said sewage flow meters shall be approved by the Township or its duly authorized delegate. The expense of procurement, installation and maintenance thereof shall be borne by the owner. Such meter shall be placed at the point of connection as may be mutually agreed upon by the Township or its duly authorized delegate and the owner and subject to the following conditions:

(a) The device shall be inspected and calibrated, and tested for accuracy, at least once every six months by a person or entity competent in the inspection and testing of such devices. Certified reports of such inspections shall be mailed directly to the Township or its duly authorized delegate. The costs of such inspection and the cost of any repair or replacement shall be borne by the owner. All repairs of meters of any type shall be accomplished within 30 calendar days of receipt of the inspection company's report attesting to the meter's malfunction. In the event of failure by the owner to meet the requirements of this subsection, the sewer service shall be

terminated.

(b) In the case of missing flow records due to faulty meter registration or otherwise, an estimate of flows will be made for the purposes of determining volume of sewage discharged by the Township or its duly authorized delegate. This estimate will be based upon an evaluation of past flow records as applied to present conditions and as reviewed and approved by the Township or its duly authorized delegate.

(5) Where metering is not feasible, a calculation will be made by the Township or its appointed delegate to determine the number of billing equivalents which contribute to the waste water flow at a given connection. A minimum of one billing unit shall be applied to each connection regardless of the flow. For apartment or other multifamily dwellings, each apartment or dwelling unit shall be considered a billing unit.

B. Authority of Township.

(1) The Township and/or any duly authorized representative of the Township may require an owner of sewer services, at its own cost, to provide information needed to determine compliance with this chapter. These requirements may include:

(a) Wastewater discharge peak rate in volume over a specified period of time.

(b) Chemical analysis of wastewater.

(c) Information on raw materials, processes and product affecting wastewater volume and quality.

(d) Quantity and disposition of specific liquid, sludge, oil, solvent or other materials important to sewer use control.

(e) A plot plan of sewers on the owner's property showing sewer and pretreatment facility location.

(f) Details of wastewater pretreatment facilities.

(g) Details of systems to prevent and control the losses of materials through spills to the municipal sewer.

(2) Samples of waste may be obtained and analyzed, at the owner's expense, by the Township or its duly authorized representative at any place and at any reasonable time in order to ensure compliance with the terms of this chapter.

C. Measurement standards. All measurements, attests and analysis of the characteristic of waters and waste to which reference is made in this article shall be determined in accordance with the latest edition of "Standard Methods for Examination of Water and Wastewater" published by the American Public Health Association. Sampling methods, location, time, durations and frequencies are to be determined on an individual basis subject to the Township.

§ 170-35. Sewer rates and tapping fees.

A. Sewer rental/user fee. Each owner of property served by the sanitary sewage system and having the use thereof shall pay an annual sewer rental, payable as hereinafter provided, for the use of the sanitary sewage system. Each occupied building shall be billed based on equivalent dwelling units of wastewater discharged. The annual charge per EDU adopted by the Board of Supervisors shall be fixed by resolution and may be modified at any time by further resolution of the Board. In addition to the sewer rental, the Township may impose a fee for maintenance, repair and replacement of the stormwater management facilities that serve the property, such fee to be added to the sewer charge and shall be established by resolution to reflect the costs of maintenance, repair, and replacement of said facilities as estimated by the Township Wastewater Engineer or reflecting actual experience.

B. Tapping fee. For each temporary sewer district located in the sanitary sewage system and in accordance with the rules and regulations of the Township, there is hereby imposed upon each owner of a billing unit connecting to the sanitary sewage system a tapping fee. The tapping fee for each temporary sewer district shall be adopted by the Board of Supervisors by resolution and may be modified at anytime by resolution. Such tapping fee shall be paid to the Township by the owner at the time application is made to the Township to connect to the Township sanitary sewage system.

§ 170-36. Time and method of payment.

A. Monthly billings. Sewer rentals shall be paid monthly. Monthly billings for sewer rentals shall be made by bills dated on or about the first day of each month for that month. Sewer rentals shall be billed to owners of property connected to the sanitary sewage system. All persons connected to the sanitary sewage system are required to provide the Township or it duly authorized designee their correct address, and the obligation to update the address lies with the user. Failure to receive bills will not be considered an excuse for nonpayment nor permit an extension of the period during which the bills are payable at face.

B. Late fees/penalties. Monthly sewer rentals, if not paid by the due date specified on the monthly bill, shall be delinquent and shall be subject to payment of an interest charge of 1.5% per month, in addition to any penalty prescribed by resolution for nonpayment within the "face" payment periods. The sewer rentals imposed by this article shall be a lien on the property served from the date the charge thereof first becomes due and payable. If such sewer rentals are not paid, the Township shall file such liens and collect such sewer rentals by action in assumpsit in the name of the Township against the owner of the property served or the user of the service. The Township may pursue any other remedies available by law or equity. If a bill is not paid in 90 days, the Township may, after 10 days written notice to the owner, order the shutoff of the public water supply and the sewage service to the property. Failure of the Township to pursue any remedy does not preclude the Township from doing so in the future.

C. Restoration of service. Whenever sewer or water service has been shut off, no service shall be provided until all unpaid rentals have been paid and a charge paid for the cost of restoring service, but not less than $100.

D. Time and date of payments. Payments mailed, as evidenced by the United States Post Office mark, on or previous to the last day of the period during which the bills are payable, will be deemed to be payment within such period.

§ 170-37. Segregation of sewer revenues.

Those funds received by the Township from the collection of sewer tapping fees, sewer rentals/user fees and all interest and penalties thereon as herein provided for shall be segregated and kept separate and apart from all other funds of the Township and shall be used only for the purpose of operation, management, maintenance, repair, alteration, replacement, inspection, depreciation, or other expenses in relation to the sanitary sewage system.

§ 170-38. Violations and penalties; enforcement.

A. The provisions of this article are declared to be for the health, safety and welfare of the citizens of the Township, and persons violating any provisions of this article shall, upon being found liable therefor, in a civil enforcement proceeding, pay a fine for each such violation in an amount not more than $1,000, together with all court costs, including reasonable attorneys fees, incurred by the Township. No judgment shall be imposed until the date of determination of a violation by the District Judge. If the defendant neither pays nor timely appeals the judgment, the Township may enforce the judgment pursuant to the applicable Rules of Criminal Procedure. Each thirty-day period during which such violation of such provisions shall continue shall be considered a separate offense.

B. Any person violating any of the provisions of this article shall become liable to the Township for any expense, loss or damage occasioned the Township by reason of such violation. Proper officers of this Township are authorized and directed to do all things and take all legal action necessary, including the filing of municipal claims, shutting off water service or any other action, in accordance with law, to enforce collection of the debt service fee established and imposed hereby and otherwise to carry out provisions hereof. Any person who knowingly makes any false statements, representation or certification in any application, record, reports, plan or other document filed or required to be maintained pursuant to this article or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required under this article, shall be prosecuted in accordance with the provisions of the Pennsylvania Crimes Code pertaining to perjury and falsification in official matters, 18 Pa.C.S.A. § 4901 et seq.

C. Each occupied building, whether or not the owners thereof shall be permitted to connect two or more occupied buildings or units by a single common connection to a lateral of the Township sanitary sewage system or shall be required to make separate connections for each occupied building or unit, shall constitute a separate unit under the provisions of this article, and the persons owning occupied buildings, consisting of multiple billing units contained in the same structure, who violate any of the provisions of this article, shall be

subject to the aforesaid civil enforcement proceeding before a District Justice for each and every one of such occupied buildings or billing units which are in violation of the provisions of this article. The Township Wastewater Engineer and other duly authorized employees or contractors of the Township, bearing proper credentials and identification, shall be permitted to enter upon all properties for the observation, measurements, sampling necessary.

§ 170-39. Severability; repealer; formatting and numbering.

A. If any sentence, clause, section or part of this article is for any reason found to be unconstitutional, illegal or invalid, such unconstitutionality, illegality or invalidity shall not affect or impair any of the remaining provisions, sentences, clauses, sections or parts hereof. It is hereby declared the intent of the Township Board of Supervisors that this article would have been adopted had such unconstitutional, illegal or invalid sentence, clause, section or part thereof not been included therein.

B. All ordinances and resolutions, or parts of ordinances and resolutions, conflicting with any provisions of this article are hereby repealed.

C. The Township hereby authorizes General Code to make nonsubstantive numbering and formatting changes to allow this article to comport with the numbering and formatting of the Code.

POCOPSON TOWNSHIP
RESOLUTIONS 2005-8 AND 2009-12

3800-FM-WSWM0356 2/2002

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

DEP Code No.
1-15946-131-3KLM

RESOLUTION FOR PLAN REVISION FOR NEW LAND DEVELOPMENT

Res#08 of 2005

RESOLUTION OF THE (SUPERVISORS) (COMMISSIONERS) (COUNCILMEN) of Pocopson (TOWNSHIP) (BOROUGH) (CITY), Chester COUNTY, PENNSYLVANIA (hereinafter "the municipality").

WHEREAS Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act", as Amended, and the rules and Regulations of the Pennsylvania Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, require the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters of the Commonwealth and/or environmental health hazards from sewage wastes, and to revise said plan whenever it is necessary to determine whether a proposed method of sewage disposal for a new land development conforms to a comprehensive program of pollution control and water quality management, and

WHEREAS **Corinne Development, LLC** has proposed the development of a parcel of land identified as
land developer

Corinne Village, and described in the attached Sewage Facilities Planning Module, and
name of subdivision

proposes that such subdivision be served by: (check all that apply), ☐ sewer tap-ins, ☐ sewer extension, ☒ new treatment facility, ☐ individual onlot systems, ☒ community onlot systems, ☐ spray irrigation, ☐ retaining tanks, ☒ other, (please specify). Drip Irrigation

WHEREAS, Pocopson Township finds that the subdivision described in the attached
municipality

Sewage Facilities Planning Module conforms to applicable sewage related zoning and other sewage related municipal ordinances and plans, and to a comprehensive program of pollution control and water quality management.

NOW, THEREFORE, BE IT RESOLVED that the (Supervisors) (Commissioners) (Councilmen) of the (Township) (Borough) (City) of Pocopson hereby adopt and submit to the Department of Environmental Protection for its approval as a revision to the "Official Sewage Facilities Plan" of the municipality the above referenced Sewage Facilities Planning Module which is attached hereto.

I Karen J. Eckard, Secretary, Pocopson Township
(Signature)

Township Board of Supervisors (Borough Council) (City Councilmen), hereby certify that the foregoing is a true copy of the Township (Borough) (City) Resolution # 08, adopted, July 11, 2005.

Municipal Address:

Pocopson Township
P. O. Box 1 (740 Denton Hollow Road)
Pocopson, PA 19366-0001
Telephone (610)793-2151

Seal of
Governing Body

POCOPSON TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA
RESOLUTION NO. 2009-12

SPECIAL STUDY AS AN UPDATE TO THE TOWNSHIP'S ACT 537 SEWAGE FACILITIES PLAN TITLED "ACT 537 SEWAGE FACILITIES PLAN LENAPE-POCOPSON STUDY AREA" ("FACILITY PLAN")

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1435, No. 537 known as the "Pennsylvania Sewage Facilities Act," as amended, and the rules and regulations of the Pennsylvania Department of Environmental Protection (the "Department") adopted thereunder, Chapter 71, of Title 25 of the Pennsylvania Code, require the Township to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of water and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the Township, and

WHEREAS, the Township through its sewer consultant, Castle Valley Consultants, Inc., New Britain, Pennsylvania, has prepared a Special Study as an update to the Township's Act 537 Sewage Facilities Plan titled "Act 537 Sewage Facilities Plan Lenape-Pocopson Study Area" ("Facility Plan"), the purpose of the Facility Plan being to address the long term sewage disposal needs of the study area which includes an area along Pocopson Road (SR 3020) between Lenape Road/Route 52 (SR0052) and Street Road/Route 926 (SR0926).

WHEREAS, the Township finds that the Facility Plan described above conforms to the applicable governing ordinances and plans of the Township and to a comprehensive program of pollution control and water quality management.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of Pocopson Township, Chester County, Pennsylvania, hereby adopt and submit to the Department for its approval as a revision of the Act 537 Plan of the Township, the above referenced Facility Plan. The Township hereby assures the Department of the complete and timely implementation of the Facility Plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act, as amended).

POCOPSON TOWNSHIP BOARD OF SUPERVISORS

By: Stephen R Conary
Stephen R. Conary, Chairman

By: Georgia F Brutscher
Georgia F. Brutscher, Vice Chairman

By: Lauressa J McNemar
Lauressa J. McNemar, P.E., Supervisor

[Attestation of signatures continues on next page]

ATTEST:
(As to All)

Susan Simone

Susan Simone, Administrative Secretary

I, Susan Simone, Secretary of the Board of Supervisors of Pocopson Township, hereby certify that the foregoing is a true copy of the Township's Resolution No. 2009-12, adopted June 8, 2009, 2009.

Susan Simone

Susan Simone, Administrative Secretary

AMENDED SCHEDULE 4.09 TO APPLICATION EXHIBIT B1

Schedule 4.09

Real Property and Easements; Liens

Owned Real Property:

Admin Building and Parking Lot:

- 49-03-00346-01: 100 E. 5th Street, Chester City, Pennsylvania (Admin Building)
- 49-03-00739-00: 507-509 Welsh Street, Chester, Pennsylvania (Admin Parking Lot)
- 49-03-00740-00: 511-513 Welsh Street, Chester, Pennsylvania (Admin Parking Lot)

Wastewater Treatment Plant & Pump Station:

- 49-11-01315-00: 3201 West Front Street, Chester, Pennsylvania
- 49-11-01315-00 (formerly before subdivision/purchase 49-11-01310-90): Thurlow and Front Street (Lot 1), Chester, Pennsylvania

Pump Stations & Gravity Main:

- 18-00-00161-01 (Eddystone PS): 8th Street and Eddystone Avenue, Eddystone Borough, Pennsylvania
- 18-00-00161-02 (Eddystone PS): 8th Street and Eddystone Avenue, Eddystone Borough, Pennsylvania
- 24-00-00032-03 (Marcus Hook PS): 401 Penn Avenue, Marcus Hook, Pennsylvania
- 31-00-00609-05 (Muckinipates PS): Hook Road, Norwood, Pennsylvania
- 38-06-01147-00 (Central Delco PS): Sellers Avenue, Ridley Township, Pennsylvania
- 38-06-01149-00 (Central Delco PS): Sellers Avenue, Ridley Township, Pennsylvania
- 49-06-00048-00 (Chester PS): East of 2nd & Penn, Chester, Pennsylvania
- 49-08-00749-01 (Broomall PS): 1 Broomall Street, Chester, Pennsylvania
- 49-04-00800-00 (Gravity Main GM 3901): W. 2nd Street, Chester City, Pennsylvania

Easements: See attached spreadsheet

Leases:

- Lease of Site for Communication Facilities dated February 4, 2015, between Newtown Square Tower L.P, as Lessor, and DELCORA, as Lessee, for purposes of providing DECLORA a site to install antennas or antenna systems and related facilitated at the Lessor's site, 395 Bishop Hollow Road, Newtown Square, PA 19073. The initial term of the lease was for 5 years, and is subject to automatic renewal through September 30, 2037.
- Communications Site Lease Agreement dated April 5, 2012, between Barcro, LLC, as Lessor, and DELCORA, as Lessee, whereby DELCORA leases a portion of 419 Avenue of the States, Chester, PA 19013 for the operation of a wireless repeater communications site. The initial term of the lease is 5 years, and DELCORA has the right to extend the term for 4 additional terms of 5 years each.
- Air Space Lease Agreement dated May 6, 2001 between Chester Housing Authority, as Lessor, and DELCORA, as Lessee, for purposes of leasing the upper plane of the roof on the building located at 1101 Avenue of the States, Chester, Pennsylvania. The initial term was 5 years, and the lease automatically renews for periods of 5 years unless either party terminates.

- Lease between the Borough of Rose Valley, as Lessor, and DELCORA as Lessee for the Long Point Lane Pumping House and Ground (Folio #39-00-00066-50) dated June 29, 2009 for a term of 99 years. Any attempt of termination must be sent to the other party by certified mail with the specific reason for termination
- Lease between the Borough of Rose Valley, as Lessor, and DELCORA as Lessee for the Old Mill Pumping Station dated June 29, 2009 for a term of 99 years. Any attempt of termination must be sent to the other party by certified mail with the specific reason for termination
- Lease between the Borough of Rose Valley, as Lessor, and DELCORA as Lessee for the Brookhaven Pumping Station dated June 29, 2009 for a term of 99 years. Any attempt of termination must be sent to the other party by certified mail with the specific reason for termination
- Lease between the Borough of Rose Valley, as Lessor, and DELCORA as Lessee for the Sewer Treatment Plant dated June 29, 2009 for a term of 99 years. Any attempt of termination must be sent to the other party by certified mail with the specific reason for termination
- Lease between the Borough of Rose Valley, as Lessor, and DELCORA as Lessee for Forestview Siphon Station dated June 29, 2009 for a term of 99 years. Any attempt of termination must be sent to the other party by certified mail with the specific reason for termination

Attachment to Schedule 4.09
DELCORA Easements

Folio No.	To Access	Location	Municipality
24-00-00129-00	Pump Station	Delaware Avenue, Marcus Hook	Marcus Hook Borough
24-00-00130-00	Pump Station	Delaware Avenue, Marcus Hook	Marcus Hook Borough
24-00-00151-00	Pump Station	Delaware Avenue, Marcus Hook	Marcus Hook Borough
24-00-00152-00	Pump Station	Delaware Avenue, Marcus Hook	Marcus Hook Borough
24-00-00155-01	Pump Station	Delaware Avenue, Marcus Hook	Marcus Hook Borough
49-10-01026-00	Force Main	128 Watts Street, Chester, PA	Chester City
49-07-00129-00	Force Main	609 W. 2nd Street, Chester, PA	Chester City
49-07-00117-00	Force Main	525 W. 2nd Street, Chester, PA	Chester City
49-07-00125-00	Force Main	601 W. 2nd Street, Chester, PA	Chester City
49-10-00925-00	Force Main	136 Reaney Street, Chester, PA	Chester City
49-11-00112-00	Force Main	2501-2507 W. 2nd Street, Chester, PA	Chester City
49-07-00109-00	Force Main	509 W 2nd Street, Chester, PA	Chester City
49-11-01969-00	Force Main	112 Thurlow Street, Chester, PA	Chester City
49-07-00135-00	Force Main	621 W. 2nd Street, Chester, PA	Chester City
47-00-00948-00	Gravity Main	310 Tenth St. Upland, PA	Upland Borough
49-08-01309-01	Force Main	W. 2nd Street, Chester, PA	Chester City
49-11-01311-01	Force Main	WRTP Entrance Harwick St.	Chester City
49-11-01310-95	Force Main	10 Highland Avenue, Chester, PA	Chester City
49-09-00081-00	Force Main	1701-1703 W. 2nd Street, Chester, PA	Chester City
49-09-00945-00	Force Main	123 Flower Street, Chester, PA	Chester City
49-09-00487-00	Force Main	126-128 Abbott Street, Chester, PA	Chester City
49-09-00866-00	Force Main	122-128 Edwards Street, Chester, PA	Chester City
49-09-00795-00	Force Main	125 Edwards Street, Chester, PA	Chester City
49-11-00142-00	Force Main	2717 W. 2nd Street, Chester, PA	Chester City
49-09-00673-00	Gravity Main	124 Central Avenue, Chester, PA	Chester City
49-08-00707-00	Force Main	Broomall Street, Chester, PA	Chester City
49-06-00080-00	Force Main	425 W. 2nd Street, Chester, PA	Chester City
49-07-00127-00	Force Main	605 W. 2nd St, Chester, PA	Chester City
49-11-00143-00	Force Main	2719 W. 2nd Street, Chester, PA	Chester City
49-11-00144-00	Force Main	2721 W. 2nd Street, Chester, PA	Chester City
49-11-00145-00	Force Main	2723 W. 2nd Street, Chester, PA	Chester City
49-11-00146-00	Force Main	2725 W. 2nd Street, Chester, PA	Chester City
49-07-00042-00	Force Main	2nd Street, Chester, PA	Chester City
49-06-00010-00	Force Main	208 W. 2nd Street, Chester, PA	Chester City
49-06-00077-00	Force Main	419 W. 2nd Street, Chester, PA	Chester City
49-06-00078-00	Force Main	611 W. 2nd Street, Chester, PA	Chester City
49-07-00130-00	Force Main	611 W. 2nd Street, Chester, PA	Chester City
49-11-00130-00	Force Main	2603 W. 2nd Street, Chester, PA	Chester City
49-11-00132-00	Force Main	2617 W. 2nd Street, Chester, PA	Chester City
49-11-00129-00	Force Main	2601 W. 2nd Street, Chester, PA	Chester City
49-10-00603-02	Water	Seaport Dr. Chester, PA	Chester City
07-00-02045-00	Force Main	53 Concord Rd, Twp. Of Chester, PA	Chester Township
07-00-00236-00	Force Main	CONCORD RD	Chester Township
07-00-00289-07	Force Main	Incinerator Rd	Chester Township
07-00-00289-00	Force Main	Incinerator Rd	Chester Township
07-00-00262-00	Force Main	56 Concord Rd	Chester Township
07-00-00260-00	Force Main	52 Concord Rd, Aston, PA	Chester Township
18-00-00500-05	Force Main	Industrial Highway (SR291) Eddystone	Eddystone Borough
19-00-00037-78	Pump Station	30 Charter Oak Dr, Edgmont Twp, PA	Edgmont Township
30-00-01143-00	Force Main	3801 Gradyville Rd, Newtown Sq. PA	Edgmont Township
49-11-00149-90	Force Main	2801-2803 W. 2nd Street, Chester, PA	Chester City
39-00-00082-00	Gravity Main	222 Possum Hollow Rd, Rose Valley, PA	Rose Valley Borough
49-11-01310-97	Force Main	10 Highland Avenue, Chester, PA	Chester City
49-07-00110-00	Force Main	511 W. 2nd Street, Chester, PA	Chester City
46-00-00659-04	Pump Station	498 Smith St Trainer, PA	Trainer Borough
49-11-01972-00	Force Main	118 Thurlow Street, Chester, PA	Chester City
49-11-00015-00	Force Main	W. Front Street, Chester, PA	Chester City

02-00-02914-01	Pump Station	1 Gamble Lane	Aston Township
49-11-01310-93	Gravity Main	10 Highland Avenue, Chester, PA	Chester City
39-00-00163-00	Force Main	67 Rose Valley Rd	Rose Valley Borough
49-06-00735-00	Force Main	201-209 Penn Street, Chester, PA	Chester City
49-06-01029-00	Force Main	211 Penn Street, Chester, PA	Chester City
49-06-01030-00	Force Main	213 Penn Street, Chester, PA	Chester City
49-06-01031-00	Force Main	215 Penn Street, Chester, PA	Chester City
49-06-01032-00	Force Main	217 Penn Street, Chester, PA	Chester City
49-07-00041-09	Force Main	805 2nd Street, Chester, PA	Chester City
49-08-00087-00	Force Main	1117-1119 W. 2nd Street, Chester, PA	Chester City
49-10-00089-00	Force Main	1917-1923 W. 2nd Street, Chester, PA	Chester City
49-11-00136-00	Force Main	2629 W. 2nd Street, Chester, PA	Chester City
49-11-00117-00	Force Main	2515 W. 2nd Street, Chester, PA	Chester City
49-10-00103-00	Force Main	2029 W. 2nd Street, Chester, PA	Chester City
49-10-00104-00	Force Main	2031 W. 2nd Street, Chester, PA	Chester City
49-10-00102-00	Force Main	W. 2nd Street, Chester, PA	Chester City
49-07-00151-00	Force Main	717 W. 2nd Street, Chester, PA	Chester City
49-07-00150-00	Force Main	717 W. 2nd Street, Chester, PA	Chester City
49-07-00138-00	Force Main	627 W. 2nd Street, Chester, PA	Chester City
49-07-00136-00	Force Main	623 W. 2nd Street Chester, PA	Chester City
49-07-00134-00	Force Main	619 W. 2nd Street, Chester, PA	Chester City
49-07-00133-00	Force Main	617 W. 2nd Street, Chester, PA	Chester City
49-07-00132-00	Force Main	615 W. 2nd Street, Chester, PA	Chester City
49-07-00131-00	Force Main	613 W. 2nd Street, Chester, PA	Chester City
49-07-00121-00	Force Main	533 W. 2nd Street, Chester, PA	Chester City
49-07-00120-00	Force Main	531 W. 2nd Street, Chester, PA	Chester City
49-06-00064-00	Force Main	321 W. 2nd Street, Chester, PA	Chester City
02-00-02914-04	Force Main	1 Gamble Rd	Aston Township
18-00-00556-00	Force Main	Eddystone Ave & Ind. Hwy. (SR291)	Eddystone Borough
18-00-00556-01	Force Main	Eddystone Ave & Ind. Hwy. (SR291)	Eddystone Borough
18-00-00500-07	Force Main	Crum Creek & Ind. Hwy. (SR0291)	Eddystone Borough
49-06-00731-00	Force Main	134 W. 2nd Street, Chester, PA	Chester City
49-06-00008-00	Force Main	204 W. 2nd Street, Chester, PA	Chester City
49-06-00009-00	Force Main	206 W. 2nd Street, Chester, PA	Chester City
49-06-00062-00	Force Main	317 W. 2nd Street, Chester, PA	Chester City
49-06-00063-00	Force Main	319 W. 2nd Street, Chester, PA	Chester City
49-06-00065-00	Force Main	323 W. 2nd Street, Chester, PA	Chester City
49-06-00076-00	Force Main	413 W. 2nd Street, Chester, PA	Chester City
49-06-00075-00	Force Main	411 W. 2nd Street, Chester, PA	Chester City
49-06-00079-00	Force Main	423 W. 2nd Street, Chester, PA	Chester City
49-06-00081-00	Force Main	427 W. 2nd Street, Chester, PA	Chester City
49-07-00111-00	Force Main	513 W. 2nd Street, Chester, PA	Chester City
49-07-00112-00	Force Main	515 W. 2nd Street, Chester, PA	Chester City
49-07-00113-00	Force Main	517 W. 2nd Street, Chester, PA	Chester City
49-07-00114-00	Force Main	519 W. 2nd Street, Chester, PA	Chester City
49-07-00115-00	Force Main	521 W. 2nd Street, Chester, PA	Chester City
49-07-00116-00	Force Main	523 W. 2nd Street, Chester, PA	Chester City
49-07-00118-00	Force Main	527 W. 2nd Street, Chester, PA	Chester City
49-07-00119-00	Force Main	529 W. 2nd Street, Chester, PA	Chester City
49-07-00128-00	Force Main	607 W. 2nd Street, Chester, PA	Chester City
49-07-00137-00	Force Main	625 W. 2nd Street, Chester, PA	Chester City
49-07-01323-02	Force Main	134 Kerlin Street, Chester, PA	Chester City
49-07-01323-03	Force Main	136 Kerlin Street, Chester, PA	Chester City
49-07-00152-00	Force Main	719 W. 2nd Street, Chester, PA	Chester City
49-07-00153-00	Force Main	721 W. 2nd Street, Chester, PA	Chester City
49-07-00154-00	Force Main	723 W. 2nd Street, Chester, PA	Chester City
49-07-00155-00	Force Main	725 W. 2nd Street, Chester, PA	Chester City
49-07-00156-00	Force Main	727 W. 2nd Street, Chester, PA	Chester City
49-07-00157-00	Force Main	729 W. 2nd Street, Chester, PA	Chester City
49-07-00035-00	Force Main	W. Front Street, Chester, PA	Chester City

49-10-00924-00	Force Main	134 Reaney Street, Chester, PA	Chester City
49-10-00807-00	Force Main	128 Jeffrey Street, Chester, PA	Chester City
49-10-00951-00	Force Main	127 Townsend Street, Chester, PA	Chester City
49-10-00137-00	Force Main	2401 W. 2nd Street, Chester, PA	Chester City
49-10-00138-00	Force Main	2423-2427 W. 2nd Street, Chester, PA	Chester City
49-11-00116-00	Force Main	2513 W. 2nd Street, Chester, PA	Chester City
49-11-00147-00	Force Main	2729-2731 W. 2nd Street, Chester, PA	Chester City
49-11-00151-00	Force Main	2811 W. 2nd Street, Chester, PA	Chester City
49-11-00153-00	Force Main	2817 W. 2nd Street, Chester, PA	Chester City
49-11-01970-00	Force Main	114 Thurlow Street, Chester, PA	Chester City
49-11-01971-00	Force Main	116 Thurlow Street, Chester, PA	Chester City
49-11-01973-00	Force Main	120 Thurlow Street, Chester, PA	Chester City
49-11-01974-00	Force Main	122 Thurlow Street, Chester, PA	Chester City
49-09-00674-00	Gravity Main	132 Central Avenue, Chester, PA	Chester City
49-08-00088-91	Force Main	1121-1125 W. 2nd Street, Chester, PA	Chester City
49-10-01025-00	Force Main	126 Watts Street, Chester, PA	Chester City
49-10-00969-00	Force Main	126 Townsend Street, Chester, PA	Chester City
49-11-01311-00	Gravity Main	Highland Ave.	Chester City
49-08-00648-00	Gravity Main	9th St	Chester City
49-11-01308-00	Pump Station	Seaport Dr. Chester, PA	Chester City
24-00-00637-01	Pump Station	6 Walnut St	Marcus Hook Borough
46-00-00376-01	Pump Station	Post Rd & Price St, Trainer	Trainer Borough
49-08-00789-00	Force Main	West Front St	Chester City
49-06-00007-00	Force Main	202 W. 2nd Street, Chester, PA	Chester City
49-06-00006-00	Force Main	200 W. 2nd Street, Chester, PA	Chester City
49-07-01323-01	Force Main	132 Kerlin Street, Chester, PA	Chester City
49-10-00711-00	Force Main	127 Iowa Street, Chester, PA	Chester City
49-10-00806-00	Force Main	126 Jeffrey Street, Chester, PA	Chester City
38-01-00092-00	Force Main	Rt 291	Ridley Township
04-00-00069-64	Gravity Main	3101 BRIDLEWOOD DR	Chadds Ford Township
04-00-00069-65	Gravity Main	3102 BRIDLEWOOD DR	Chadds Ford Township
04-00-00069-66	Gravity Main	3103 BRIDLEWOOD DR	Chadds Ford Township
04-00-00069-68	Gravity Main	3105 BRIDLEWOOD DR	Chadds Ford Township
04-00-00127-31	Gravity Main	3701 FOX POINTE CT	Chadds Ford Township
04-00-00127-33	Gravity Main	3703 FOX POINTE CT	Chadds Ford Township
04-00-00177-10	Gravity Main	601 MEADOW CT	Chadds Ford Township
04-00-00177-13	Gravity Main	604 MEADOW CT	Chadds Ford Township
04-00-00177-14	Gravity Main	605 MEADOW CT	Chadds Ford Township
04-00-00204-99	Gravity Main	PLEASANT HILL DR	Chadds Ford Township
04-00-00375-01	Gravity Main	2002 WINDFIELD CT	Chadds Ford Township
19-00-00261-02	Gravity Main	2 OAK CIR. Newtown SW. PA	Edgmont Township
19-00-00326-16	Gravity Main	17 Rockhill Rd,Newtown Sq. PA	Edgmont Township
19-00-00074-55	Pump Station	30 Dream Valley Dr, Edmont Twp. PA	Edgmont Township
19-00-00163-88	Gravity Main	27 Langton Lane, Edgmont Twp. PA	Edgmont Township
19-00-00326-17	Gravity Main	14 Rockhill Rd,Newtown Sq. PA	Edgmont Township
38-06-00425-02	Force Main	Darby & Clymer Rd, Ridley Townshup	Ridley Township
38-06-00421-00	Force Main	MACDADE BLVD & MORTON AVE	Ridley Township
38-06-00502-01	Force Main	MACDADE BLVD & MORTON AVE	Ridley Township
02-00-02914-00	Force Main	Bridgewater Rd	Aston Township
38-06-00425-03	Force Main	Darby Rd. Ridley Township, PA	Ridley Township
38-06-00504-00	Force Main	DOROTHY RD	Ridley Township
38-06-00425-01	Force Main	563 DARBY RD	Ridley Township
24-00-00983-00	Gravity Main	YATES AVE	Marcus Hook Borough
24-00-00723-00	Gravity Main	53 SPRUCE ST	Marcus Hook Borough
24-00-00724-00	Gravity Main	55 SPRUCE ST	Marcus Hook Borough
24-00-00725-00	Gravity Main	57 SPRUCE ST	Marcus Hook Borough
24-00-00722-00	Gravity Main	51 SPRUCE ST	Marcus Hook Borough
24-00-00747-00	Gravity Main	50 SPRUCE ST	Marcus Hook Borough
24-00-00745-00	Gravity Main	46 SPRUCE ST	Marcus Hook Borough
24-00-00744-00	Gravity Main	44 SPRUCE ST	Marcus Hook Borough

24-00-00905-00	Gravity Main	1126 WASHINGTON ST	Marcus Hook Borough
24-00-00326-00	Gravity Main	31 MAPLE ST	Marcus Hook Borough
24-00-00746-00	Gravity Main	48 SPRUCE ST	Marcus Hook Borough
24-00-00325-00	Gravity Main	29 MAPLE ST	Marcus Hook Borough
24-00-00324-00	Gravity Main	27 MAPLE ST	Marcus Hook Borough
24-00-00346-00	Gravity Main	22 MAPLE ST	Marcus Hook Borough
24-00-00347-00	Gravity Main	24 MAPLE ST	Marcus Hook Borough
24-00-00039-00	Gravity Main	25 CEDAR ST	Marcus Hook Borough
24-00-00038-00	Gravity Main	23 CEDAR ST	Marcus Hook Borough
24-00-00011-00	Gravity Main	22 CEDAR ST	Marcus Hook Borough
24-00-00010-00	Gravity Main	20 CEDAR ST	Marcus Hook Borough
24-00-00876-00	Gravity Main	33 WALNUT ST	Marcus Hook Borough
24-00-00009-00	Gravity Main	18 CEDAR ST	Marcus Hook Borough
24-00-00875-00	Gravity Main	31 WALNUT ST	Marcus Hook Borough
24-00-00874-00	Gravity Main	29 WALNUT ST	Marcus Hook Borough
24-00-00859-00	Gravity Main	30 WALNUT ST	Marcus Hook Borough
24-00-00979-00	Gravity Main	YATES AVE	Marcus Hook Borough
24-00-00318-00	Gravity Main	17 MAPLE ST	Marcus Hook Borough
24-00-00714-00	Gravity Main	35 SPRUCE ST	Marcus Hook Borough
24-00-00868-00	Gravity Main	13 WALNUT ST	Marcus Hook Borough
24-00-00005-00	Gravity Main	10 CEDAR ST	Marcus Hook Borough
24-00-00337-00	Gravity Main	6 MAPLE ST	Marcus Hook Borough
24-00-00031-00	Gravity Main	5 CEDAR ST	Marcus Hook Borough
24-00-00950-00	Gravity Main	632 10TH ST E	Marcus Hook Borough
24-00-00317-00	Gravity Main	15 MAPLE ST	Marcus Hook Borough
24-00-00713-00	Gravity Main	33 SPRUCE ST	Marcus Hook Borough
24-00-00867-00	Gravity Main	11 WALNUT ST	Marcus Hook Borough
24-00-00004-00	Gravity Main	8 CEDAR ST	Marcus Hook Borough
24-00-00949-00	Gravity Main	630 10TH ST E	Marcus Hook Borough
24-00-00316-00	Gravity Main	13 MAPLE ST	Marcus Hook Borough
24-00-00336-00	Gravity Main	4 MAPLE ST	Marcus Hook Borough
24-00-00030-00	Gravity Main	3 CEDAR ST	Marcus Hook Borough
24-00-00712-00	Gravity Main	31 SPRUCE ST	Marcus Hook Borough
24-00-00948-00	Gravity Main	628 10TH ST E	Marcus Hook Borough
24-00-00737-00	Gravity Main	30 SPRUCE ST	Marcus Hook Borough
24-00-00866-00	Gravity Main	9 WALNUT ST	Marcus Hook Borough
24-00-00003-00	Gravity Main	6 CEDAR ST	Marcus Hook Borough
24-00-00315-00	Gravity Main	11 MAPLE ST	Marcus Hook Borough
24-00-00335-00	Gravity Main	2 MAPLE ST	Marcus Hook Borough
24-00-00029-00	Gravity Main	1 CEDAR ST	Marcus Hook Borough
24-00-00865-00	Gravity Main	7 WALNUT ST	Marcus Hook Borough
24-00-00711-00	Gravity Main	30 1/2 SPRUCE ST	Marcus Hook Borough
24-00-00002-00	Gravity Main	4 CEDAR ST	Marcus Hook Borough
24-00-00314-00	Gravity Main	9 MAPLE ST	Marcus Hook Borough
24-00-00736-00	Gravity Main	28 SPRUCE ST	Marcus Hook Borough
24-00-00977-00	Gravity Main	1050 YATES AVE	Marcus Hook Borough
24-00-00624-00	Gravity Main	10 PLAZA ST	Marcus Hook Borough
24-00-00625-00	Gravity Main	11 PLAZA ST	Marcus Hook Borough
24-00-00313-00	Gravity Main	7 MAPLE ST	Marcus Hook Borough
24-00-00947-00	Gravity Main	626 10TH ST E	Marcus Hook Borough
24-00-00001-00	Gravity Main	2 CEDAR ST	Marcus Hook Borough
24-00-00626-00	Gravity Main	12 PLAZA ST	Marcus Hook Borough
24-00-00735-00	Gravity Main	26 SPRUCE ST	Marcus Hook Borough
24-00-00710-00	Gravity Main	29 1/2 SPRUCE ST	Marcus Hook Borough
24-00-00623-00	Gravity Main	9 PLAZA ST	Marcus Hook Borough
24-00-00312-00	Gravity Main	5 MAPLE ST	Marcus Hook Borough
24-00-00946-00	Gravity Main	624 POST RD	Marcus Hook Borough
24-00-00627-00	Gravity Main	13 PLAZA ST	Marcus Hook Borough
24-00-00734-00	Gravity Main	24 SPRUCE ST	Marcus Hook Borough
24-00-00733-00	Gravity Main	22 SPRUCE ST	Marcus Hook Borough

24-00-00945-00	Gravity Main	622 10TH ST	E	Marcus Hook Borough
24-00-00311-00	Gravity Main	3 MAPLE ST		Marcus Hook Borough
24-00-00709-00	Gravity Main	29 SPRUCE ST		Marcus Hook Borough
24-00-00628-00	Gravity Main	14 PLAZA ST		Marcus Hook Borough
24-00-00944-00	Gravity Main	620 10TH ST	E	Marcus Hook Borough
24-00-00732-00	Gravity Main	20 SPRUCE ST		Marcus Hook Borough
24-00-00629-00	Gravity Main	15 PLAZA ST		Marcus Hook Borough
24-00-00943-00	Gravity Main	618 POST RD		Marcus Hook Borough
24-00-00310-00	Gravity Main	1 MAPLE ST		Marcus Hook Borough
24-00-00630-00	Gravity Main	16 PLAZA ST		Marcus Hook Borough
24-00-00708-00	Gravity Main	27 SPRUCE ST		Marcus Hook Borough
24-00-00631-00	Gravity Main	17 PLAZA ST		Marcus Hook Borough
24-00-00731-00	Gravity Main	18 SPRUCE ST		Marcus Hook Borough
24-00-00942-00	Gravity Main	616 POST RD		Marcus Hook Borough
24-00-00622-00	Gravity Main	8 PLAZA ST		Marcus Hook Borough
24-00-00707-00	Gravity Main	25 SPRUCE ST		Marcus Hook Borough
24-00-00728-00	Gravity Main	6 SPRUCE ST		Marcus Hook Borough
24-00-00729-00	Gravity Main	8 SPRUCE ST		Marcus Hook Borough
24-00-00727-00	Gravity Main	4 SPRUCE ST		Marcus Hook Borough
24-00-00706-00	Gravity Main	23 SPRUCE ST		Marcus Hook Borough
24-00-00730-00	Gravity Main	10 SPRUCE ST		Marcus Hook Borough
24-00-00726-00	Gravity Main	2 SPRUCE ST		Marcus Hook Borough
24-00-00621-00	Gravity Main	7 PLAZA ST		Marcus Hook Borough
24-00-00705-00	Gravity Main	21 SPRUCE ST		Marcus Hook Borough
24-00-00620-00	Gravity Main	6 PLAZA ST		Marcus Hook Borough
24-00-00704-00	Gravity Main	19 SPRUCE ST		Marcus Hook Borough
24-00-00619-00	Gravity Main	5 PLAZA ST		Marcus Hook Borough
24-00-00703-00	Gravity Main	17 SPRUCE ST		Marcus Hook Borough
24-00-00702-00	Gravity Main	15 SPRUCE ST		Marcus Hook Borough
24-00-00701-00	Gravity Main	13 SPRUCE ST		Marcus Hook Borough
24-00-00700-00	Gravity Main	11 SPRUCE ST		Marcus Hook Borough
24-00-00699-00	Gravity Main	9 SPRUCE ST		Marcus Hook Borough
24-00-00698-00	Gravity Main	7 SPRUCE ST		Marcus Hook Borough
24-00-00697-00	Gravity Main	5 SPRUCE ST		Marcus Hook Borough
24-00-00696-00	Gravity Main	3 SPRUCE ST		Marcus Hook Borough
24-00-00695-00	Gravity Main	1 SPRUCE ST		Marcus Hook Borough
24-00-00618-00	Gravity Main	4 PLAZA ST		Marcus Hook Borough
24-00-00617-00	Gravity Main	3 PLAZA ST		Marcus Hook Borough
24-00-00616-00	Gravity Main	2 PLAZA ST		Marcus Hook Borough
24-00-00941-00	Gravity Main	322 10TH ST	E	Marcus Hook Borough
24-00-00940-00	Gravity Main	320 10TH ST	E	Marcus Hook Borough
24-00-00939-00	Gravity Main	318 10TH ST	E	Marcus Hook Borough
24-00-00938-00	Gravity Main	316 10TH ST	E	Marcus Hook Borough
24-00-00615-00	Gravity Main	1 PLAZA ST		Marcus Hook Borough
24-00-00027-00	Gravity Main	52 CEDAR ST		Marcus Hook Borough
24-00-00073-00	Gravity Main	21 CHESTNUT ST		Marcus Hook Borough
24-00-00072-00	Gravity Main	20 CHESTNUT ST		Marcus Hook Borough
24-00-00026-00	Gravity Main	50 CEDAR ST		Marcus Hook Borough
24-00-00071-00	Gravity Main	19 CHESTNUT ST		Marcus Hook Borough
24-00-00025-00	Gravity Main	48 CEDAR ST		Marcus Hook Borough
24-00-00054-00	Gravity Main	53 CEDAR ST		Marcus Hook Borough
24-00-00024-00	Gravity Main	46 CEDAR ST		Marcus Hook Borough
24-00-00069-00	Gravity Main	17 CHESTNUT ST		Marcus Hook Borough
24-00-00023-00	Gravity Main	44 CEDAR ST		Marcus Hook Borough
24-00-00053-00	Gravity Main	51 CEDAR ST		Marcus Hook Borough
24-00-00068-00	Gravity Main	16 CHESTNUT ST		Marcus Hook Borough
24-00-00022-00	Gravity Main	42 CEDAR ST		Marcus Hook Borough
24-00-00067-00	Gravity Main	15 CHESTNUT ST		Marcus Hook Borough
24-00-00052-00	Gravity Main	49 CEDAR ST		Marcus Hook Borough
24-00-00066-00	Gravity Main	14 CHESTNUT ST		Marcus Hook Borough

24-00-00021-00	Gravity Main	40 CEDAR ST	Marcus Hook Borough
24-00-00359-00	Gravity Main	48 MAPLE ST	Marcus Hook Borough
24-00-00051-00	Gravity Main	47 CEDAR ST	Marcus Hook Borough
24-00-00065-00	Gravity Main	12 CHESTNUT ST	Marcus Hook Borough
24-00-00020-00	Gravity Main	38 CEDAR ST	Marcus Hook Borough
24-00-00064-00	Gravity Main	10 CHESTNUT ST	Marcus Hook Borough
24-00-00050-00	Gravity Main	45 CEDAR ST	Marcus Hook Borough
24-00-00063-00	Gravity Main	9 CHESTNUT ST	Marcus Hook Borough
24-00-00019-00	Gravity Main	36 CEDAR ST	Marcus Hook Borough
24-00-00358-00	Gravity Main	46 MAPLE ST	Marcus Hook Borough
24-00-00049-00	Gravity Main	43 CEDAR ST	Marcus Hook Borough
24-00-00062-00	Gravity Main	8 CHESTNUT ST	Marcus Hook Borough
24-00-00061-00	Gravity Main	7 CHESTNUT ST	Marcus Hook Borough
24-00-00018-00	Gravity Main	34 CEDAR ST	Marcus Hook Borough
24-00-00357-00	Gravity Main	44 MAPLE ST	Marcus Hook Borough
24-00-00356-00	Gravity Main	42 MAPLE ST	Marcus Hook Borough
24-00-00048-00	Gravity Main	41 CEDAR ST	Marcus Hook Borough
24-00-00060-00	Gravity Main	6 CHESTNUT ST	Marcus Hook Borough
24-00-00861-00	Gravity Main	34 WALNUT ST	Marcus Hook Borough
24-00-00329-00	Gravity Main	37 MAPLE ST	Marcus Hook Borough
24-00-00041-00	Gravity Main	27 CEDAR ST	Marcus Hook Borough
24-00-00349-00	Gravity Main	28 MAPLE ST	Marcus Hook Borough
24-00-00013-00	Gravity Main	26 CEDAR ST	Marcus Hook Borough
24-00-00750-00	Gravity Main	56 SPRUCE ST	Marcus Hook Borough
24-00-00878-00	Gravity Main	37 WALNUT ST	Marcus Hook Borough
24-00-00860-00	Gravity Main	32 WALNUT ST	Marcus Hook Borough
24-00-00328-00	Gravity Main	35 MAPLE ST	Marcus Hook Borough
24-00-00748-00	Gravity Main	52 SPRUCE ST	Marcus Hook Borough
24-00-00749-00	Gravity Main	54 SPRUCE ST	Marcus Hook Borough
24-00-00877-00	Gravity Main	35 WALNUT ST	Marcus Hook Borough
24-00-00348-00	Gravity Main	26 MAPLE ST	Marcus Hook Borough
24-00-00012-00	Gravity Main	24 CEDAR ST	Marcus Hook Borough
24-00-00017-00	Gravity Main	32 CEDAR ST	Marcus Hook Borough
24-00-00334-00	Gravity Main	47 MAPLE ST	Marcus Hook Borough
24-00-00047-00	Gravity Main	39 CEDAR ST	Marcus Hook Borough
24-00-00355-00	Gravity Main	40 MAPLE ST	Marcus Hook Borough
24-00-00059-00	Gravity Main	5 CHESTNUT ST	Marcus Hook Borough
24-00-00016-00	Gravity Main	30 CEDAR ST	Marcus Hook Borough
24-00-00058-00	Gravity Main	4 CHESTNUT ST	Marcus Hook Borough
24-00-00046-00	Gravity Main	37 CEDAR ST	Marcus Hook Borough
24-00-00354-00	Gravity Main	38 MAPLE ST	Marcus Hook Borough
24-00-00057-00	Gravity Main	3 CHESTNUT ST	Marcus Hook Borough
24-00-00015-00	Gravity Main	28 CEDAR ST	Marcus Hook Borough
24-00-00333-00	Gravity Main	45 MAPLE ST	Marcus Hook Borough
24-00-00045-00	Gravity Main	35 CEDAR ST	Marcus Hook Borough
24-00-00353-00	Gravity Main	36 MAPLE ST	Marcus Hook Borough
24-00-00864-00	Gravity Main	40 WALNUT ST	Marcus Hook Borough
24-00-00056-00	Gravity Main	2 CHESTNUT ST	Marcus Hook Borough
24-00-00044-00	Gravity Main	33 CEDAR ST	Marcus Hook Borough
24-00-00332-00	Gravity Main	43 MAPLE ST	Marcus Hook Borough
24-00-00352-00	Gravity Main	34 MAPLE ST	Marcus Hook Borough
24-00-00055-00	Gravity Main	1 CHESTNUT ST	Marcus Hook Borough
24-00-00863-00	Gravity Main	38 WALNUT ST	Marcus Hook Borough
24-00-00043-00	Gravity Main	31 CEDAR ST	Marcus Hook Borough
24-00-00331-00	Gravity Main	41 MAPLE ST	Marcus Hook Borough
24-00-00351-00	Gravity Main	32 MAPLE ST	Marcus Hook Borough
24-00-00751-00	Gravity Main	58 SPRUCE ST	Marcus Hook Borough
24-00-00862-00	Gravity Main	36 WALNUT ST	Marcus Hook Borough
24-00-00330-00	Gravity Main	39 MAPLE ST	Marcus Hook Borough
24-00-00879-00	Gravity Main	39 WALNUT ST	Marcus Hook Borough

24-00-00042-00	Gravity Main	29 CEDAR ST	Marcus Hook Borough
24-00-00350-00	Gravity Main	30 MAPLE ST	Marcus Hook Borough
24-00-00856-00	Gravity Main	24 WALNUT ST	Marcus Hook Borough
24-00-00742-00	Gravity Main	40 SPRUCE ST	Marcus Hook Borough
24-00-00720-00	Gravity Main	47 SPRUCE ST	Marcus Hook Borough
24-00-00563-06	Gravity Main	MCCLENACHAN TERR	Marcus Hook Borough
24-00-00321-00	Gravity Main	21 MAPLE ST	Marcus Hook Borough
24-00-00853-00	Gravity Main	18 WALNUT ST	Marcus Hook Borough
24-00-00035-00	Gravity Main	17 CEDAR ST	Marcus Hook Borough
24-00-00873-00	Gravity Main	23 WALNUT ST	Marcus Hook Borough
24-00-00741-00	Gravity Main	38 SPRUCE ST	Marcus Hook Borough
24-00-00719-00	Gravity Main	45 SPRUCE ST	Marcus Hook Borough
24-00-00343-00	Gravity Main	18 MAPLE ST	Marcus Hook Borough
24-00-00034-00	Gravity Main	15 CEDAR ST	Marcus Hook Borough
24-00-00852-00	Gravity Main	16 WALNUT ST	Marcus Hook Borough
24-00-00718-00	Gravity Main	43 SPRUCE ST	Marcus Hook Borough
24-00-00872-00	Gravity Main	21 WALNUT ST	Marcus Hook Borough
24-00-00342-00	Gravity Main	16 MAPLE ST	Marcus Hook Borough
24-00-00851-00	Gravity Main	14 WALNUT ST	Marcus Hook Borough
24-00-00740-00	Gravity Main	36 SPRUCE ST	Marcus Hook Borough
24-00-00033-00	Gravity Main	9 CEDAR ST	Marcus Hook Borough
24-00-00717-00	Gravity Main	41 SPRUCE ST	Marcus Hook Borough
24-00-00341-00	Gravity Main	14 MAPLE ST	Marcus Hook Borough
24-00-00871-00	Gravity Main	19 WALNUT ST	Marcus Hook Borough
24-00-00850-00	Gravity Main	12 WALNUT ST	Marcus Hook Borough
24-00-00340-00	Gravity Main	12 MAPLE ST	Marcus Hook Borough
24-00-00739-00	Gravity Main	34 SPRUCE ST	Marcus Hook Borough
24-00-00716-00	Gravity Main	39 SPRUCE ST	Marcus Hook Borough
24-00-00319-00	Gravity Main	19 MAPLE ST	Marcus Hook Borough
24-00-00870-00	Gravity Main	17 WALNUT ST	Marcus Hook Borough
24-00-00849-00	Gravity Main	10 WALNUT ST	Marcus Hook Borough
24-00-00339-00	Gravity Main	10 MAPLE ST	Marcus Hook Borough
24-00-00738-00	Gravity Main	32 SPRUCE ST	Marcus Hook Borough
24-00-00715-00	Gravity Main	37 SPRUCE ST	Marcus Hook Borough
24-00-00848-00	Gravity Main	8 WALNUT ST	Marcus Hook Borough
24-00-00869-00	Gravity Main	15 WALNUT ST	Marcus Hook Borough
24-00-00032-00	Gravity Main	7 CEDAR ST	Marcus Hook Borough
24-00-00338-00	Gravity Main	8 MAPLE ST	Marcus Hook Borough
24-00-00951-00	Gravity Main	634 POST RD	Marcus Hook Borough
24-00-00008-00	Gravity Main	16 CEDAR ST	Marcus Hook Borough
24-00-00323-00	Gravity Main	25 MAPLE ST	Marcus Hook Borough
24-00-00037-00	Gravity Main	21 CEDAR ST	Marcus Hook Borough
24-00-00855-00	Gravity Main	22 WALNUT ST	Marcus Hook Borough
24-00-00743-00	Gravity Main	42 SPRUCE ST	Marcus Hook Borough
24-00-00721-00	Gravity Main	49 SPRUCE ST	Marcus Hook Borough
24-00-00036-00	Gravity Main	19 CEDAR ST	Marcus Hook Borough
24-00-00322-00	Gravity Main	23 MAPLE ST	Marcus Hook Borough
24-00-00854-00	Gravity Main	20 WALNUT ST	Marcus Hook Borough
24-00-00344-00	Gravity Main	20 MAPLE ST	Marcus Hook Borough
24-00-00085-00	Gravity Main	35 CHESTNUT ST	Marcus Hook Borough
24-00-00084-00	Gravity Main	34 CHESTNUT ST	Marcus Hook Borough
24-00-00083-00	Gravity Main	33 CHESTNUT ST	Marcus Hook Borough
24-00-00082-00	Gravity Main	32 CHESTNUT ST	Marcus Hook Borough
24-00-00081-00	Gravity Main	31 CHESTNUT ST	Marcus Hook Borough
24-00-00080-00	Gravity Main	30 CHESTNUT ST	Marcus Hook Borough
24-00-00079-00	Gravity Main	29 CHESTNUT ST	Marcus Hook Borough
24-00-00078-00	Gravity Main	28 CHESTNUT ST	Marcus Hook Borough
24-00-00077-00	Gravity Main	27 CHESTNUT ST	Marcus Hook Borough
24-00-00028-00	Gravity Main	54 CEDAR ST	Marcus Hook Borough
24-00-00076-00	Gravity Main	26 CHESTNUT ST	Marcus Hook Borough

24-00-00075-00	Gravity Main	24 CHESTNUT ST	Marcus Hook Borough
24-00-00074-00	Gravity Main	22 CHESTNUT ST	Marcus Hook Borough
24-00-00086-00	Gravity Main	36 CHESTNUT ST	Marcus Hook Borough
04-00-00176-75	Gravity Main	101 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00176-76	Gravity Main	102 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00176-77	Gravity Main	103 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00176-78	Gravity Main	104 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00176-79	Gravity Main	105 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00176-80	Gravity Main	106 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00176-81	Gravity Main	107 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00176-82	Gravity Main	108 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00176-83	Gravity Main	201 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00176-84	Gravity Main	202 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00176-85	Gravity Main	203 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00176-86	Gravity Main	204 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00176-87	Gravity Main	205 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00176-88	Gravity Main	206 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00176-89	Gravity Main	301 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00176-90	Gravity Main	302 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00176-91	Gravity Main	303 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00176-92	Gravity Main	304 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00176-93	Gravity Main	305 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00176-94	Gravity Main	306 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00176-95	Gravity Main	307 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00176-96	Gravity Main	401 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00176-97	Gravity Main	402 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00176-98	Gravity Main	403 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00176-99	Gravity Main	404 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00177-01	Gravity Main	405 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00177-02	Gravity Main	406 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00177-03	Gravity Main	501 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00177-04	Gravity Main	502 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00177-05	Gravity Main	503 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00177-06	Gravity Main	504 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00177-07	Gravity Main	505 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00177-08	Gravity Main	506 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00177-09	Gravity Main	507 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00177-11	Gravity Main	602 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00177-12	Gravity Main	603 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00177-15	Gravity Main	606 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00177-16	Gravity Main	607 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00177-17	Gravity Main	701 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00177-18	Gravity Main	702 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00177-19	Gravity Main	703 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00177-20	Gravity Main	704 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00177-21	Gravity Main	705 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00177-22	Gravity Main	706 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00177-23	Gravity Main	801 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00177-24	Gravity Main	802 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00177-25	Gravity Main	803 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00177-26	Gravity Main	804 Meadow Court, Glen Mills, PA	Chadds Ford Township
04-00-00186-20	Gravity Main	901 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-21	Gravity Main	902 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-22	Gravity Main	903 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-23	Gravity Main	904 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-24	Gravity Main	905 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-25	Gravity Main	1001 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-26	Gravity Main	1002 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-27	Gravity Main	1003 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-28	Gravity Main	1004 N. Glen Drive, Glen Mills, PA	Chadds Ford Township

04-00-00186-29	Gravity Main	1005 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-30	Gravity Main	1006 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-31	Gravity Main	1101 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-32	Gravity Main	1102 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-33	Gravity Main	1103 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-34	Gravity Main	1104 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-35	Gravity Main	1105 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-36	Gravity Main	1106 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-37	Gravity Main	1107 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-38	Gravity Main	1201 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-39	Gravity Main	1202 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-40	Gravity Main	1203 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-41	Gravity Main	1204 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-42	Gravity Main	1205 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-43	Gravity Main	1206 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-44	Gravity Main	1207 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-45	Gravity Main	1301 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-46	Gravity Main	1302 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-47	Gravity Main	1303 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-48	Gravity Main	1304 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-49	Gravity Main	1305 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-50	Gravity Main	1306 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-51	Gravity Main	1307 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-52	Gravity Main	1401 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-53	Gravity Main	1402 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-54	Gravity Main	1403 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-55	Gravity Main	1404 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-56	Gravity Main	1501 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-57	Gravity Main	1502 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-58	Gravity Main	1503 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-59	Gravity Main	1504 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-60	Gravity Main	1601 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-61	Gravity Main	1602 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-62	Gravity Main	1603 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-63	Gravity Main	1604 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-64	Gravity Main	1605 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-65	Gravity Main	1606 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-66	Gravity Main	1607 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-67	Gravity Main	1701 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-68	Gravity Main	1702 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-69	Gravity Main	1703 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-70	Gravity Main	1704 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-71	Gravity Main	1705 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-72	Gravity Main	1706 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-73	Gravity Main	1707 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-74	Gravity Main	1801 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-75	Gravity Main	1802 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-76	Gravity Main	1803 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-77	Gravity Main	1804 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-78	Gravity Main	1805 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-79	Gravity Main	1806 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-80	Gravity Main	1807 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-81	Gravity Main	1808 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-82	Gravity Main	1901 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-83	Gravity Main	1902 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-84	Gravity Main	1903 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-85	Gravity Main	1904 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-86	Gravity Main	1905 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-87	Gravity Main	1906 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00186-88	Gravity Main	1907 N. Glen Drive, Glen Mills, PA	Chadds Ford Township

04-00-00186-89	Gravity Main	1908 N. Glen Drive, Glen Mills, PA	Chadds Ford Township
04-00-00375-00	Gravity Main	2001 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-02	Gravity Main	2003 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-03	Gravity Main	2004 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-04	Gravity Main	2005 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-05	Gravity Main	2006 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-06	Gravity Main	2007 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-07	Gravity Main	2008 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-08	Gravity Main	2101 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-09	Gravity Main	2102 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-10	Gravity Main	2103 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-11	Gravity Main	2104 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-12	Gravity Main	2105 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-13	Gravity Main	2106 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-14	Gravity Main	2107 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-15	Gravity Main	2108 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-16	Gravity Main	2201 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-17	Gravity Main	2202 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-18	Gravity Main	2203 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-19	Gravity Main	2204 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-20	Gravity Main	2205 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-21	Gravity Main	2206 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-22	Gravity Main	2207 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-23	Gravity Main	2208 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-24	Gravity Main	2301 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-25	Gravity Main	2302 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-26	Gravity Main	2303 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-27	Gravity Main	2304 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-28	Gravity Main	2305 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-29	Gravity Main	2306 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-30	Gravity Main	2307 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-31	Gravity Main	2308 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-32	Gravity Main	2401 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-33	Gravity Main	2402 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-34	Gravity Main	2403 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-35	Gravity Main	2404 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-36	Gravity Main	2405 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-37	Gravity Main	2406 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00375-38	Gravity Main	2407 Windfield Court, Glen Mills, PA	Chadds Ford Township
04-00-00114-40	Gravity Main	2501 Crestline Court, Glen Mills, PA	Chadds Ford Township
04-00-00114-41	Gravity Main	2502 Crestline Court, Glen Mills, PA	Chadds Ford Township
04-00-00114-42	Gravity Main	2503 Crestline Court, Glen Mills, PA	Chadds Ford Township
04-00-00114-43	Gravity Main	2504 Crestline Court, Glen Mills, PA	Chadds Ford Township
04-00-00114-44	Gravity Main	2505 Crestline Court, Glen Mills, PA	Chadds Ford Township
04-00-00114-45	Gravity Main	2601 Crestline Court, Glen Mills, PA	Chadds Ford Township
04-00-00114-46	Gravity Main	2602 Crestline Court, Glen Mills, PA	Chadds Ford Township
04-00-00114-47	Gravity Main	2603 Crestline Court, Glen Mills, PA	Chadds Ford Township
04-00-00114-48	Gravity Main	2604 Crestline Court, Glen Mills, PA	Chadds Ford Township
04-00-00114-49	Gravity Main	2605 Crestline Court, Glen Mills, PA	Chadds Ford Township
04-00-00114-50	Gravity Main	2701 Crestline Court, Glen Mills, PA	Chadds Ford Township
04-00-00114-51	Gravity Main	2702 Crestline Court, Glen Mills, PA	Chadds Ford Township
04-00-00114-52	Gravity Main	2703 Crestline Court, Glen Mills, PA	Chadds Ford Township
04-00-00114-53	Gravity Main	2704 Crestline Court, Glen Mills, PA	Chadds Ford Township
04-00-00114-54	Gravity Main	2801 Crestline Court, Glen Mills, PA	Chadds Ford Township
04-00-00114-55	Gravity Main	2802 Crestline Court, Glen Mills, PA	Chadds Ford Township
04-00-00114-56	Gravity Main	2803 Crestline Court, Glen Mills, PA	Chadds Ford Township
04-00-00114-57	Gravity Main	2804 Crestline Court, Glen Mills, PA	Chadds Ford Township
04-00-00114-58	Gravity Main	2805 Crestline Court, Glen Mills, PA	Chadds Ford Township
04-00-00114-59	Gravity Main	2806 Crestline Court, Glen Mills, PA	Chadds Ford Township
04-00-00337-00	Gravity Main	2901 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township

04-00-00069-56	Gravity Main	2902 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-57	Gravity Main	2903 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-58	Gravity Main	2904 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-59	Gravity Main	3001 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-60	Gravity Main	3002 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-61	Gravity Main	3003 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-62	Gravity Main	3004 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-63	Gravity Main	3005 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-67	Gravity Main	3104 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-69	Gravity Main	3201 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-70	Gravity Main	3202 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-71	Gravity Main	3203 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-72	Gravity Main	3204 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-73	Gravity Main	3205 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-74	Gravity Main	3206 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-75	Gravity Main	3301 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-76	Gravity Main	3302 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-77	Gravity Main	3303 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-78	Gravity Main	3304 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-79	Gravity Main	3305 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-80	Gravity Main	3401 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-81	Gravity Main	3402 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-82	Gravity Main	3403 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-83	Gravity Main	3404 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-84	Gravity Main	3405 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-85	Gravity Main	3501 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-86	Gravity Main	3502 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-87	Gravity Main	3503 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-88	Gravity Main	3504 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-89	Gravity Main	3601 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-90	Gravity Main	3602 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-91	Gravity Main	3603 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-92	Gravity Main	3604 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-93	Gravity Main	3605 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00069-94	Gravity Main	3606 Bridlewood Dr, Glen Mills, PA	Chadds Ford Township
04-00-00127-32	Gravity Main	3702 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-34	Gravity Main	3704 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-35	Gravity Main	3705 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-36	Gravity Main	3801 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-37	Gravity Main	3802 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-38	Gravity Main	3803 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-39	Gravity Main	3804 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-40	Gravity Main	3901 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-41	Gravity Main	3902 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-42	Gravity Main	3903 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-43	Gravity Main	3904 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-44	Gravity Main	3905 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-45	Gravity Main	3906 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-46	Gravity Main	4001 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-47	Gravity Main	4002 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-48	Gravity Main	4003 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-49	Gravity Main	4004 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-50	Gravity Main	4005 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-51	Gravity Main	4101 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-52	Gravity Main	4102 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-53	Gravity Main	4103 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-54	Gravity Main	4104 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-55	Gravity Main	4201 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-56	Gravity Main	4202 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-57	Gravity Main	4203 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township

04-00-00127-58	Gravity Main	4204 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-59	Gravity Main	4205 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-60	Gravity Main	4206 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-61	Gravity Main	4301 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-62	Gravity Main	4302 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-63	Gravity Main	4303 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-64	Gravity Main	4304 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-65	Gravity Main	4305 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-66	Gravity Main	4306 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-67	Gravity Main	4401 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-68	Gravity Main	4402 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-69	Gravity Main	4403 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-70	Gravity Main	4404 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-71	Gravity Main	4405 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-72	Gravity Main	4501 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-73	Gravity Main	4502 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-74	Gravity Main	4503 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-75	Gravity Main	4504 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-76	Gravity Main	4505 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-77	Gravity Main	4601 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-78	Gravity Main	4602 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-79	Gravity Main	4603 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-80	Gravity Main	4604 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-81	Gravity Main	4701 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-82	Gravity Main	4702 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-83	Gravity Main	4703 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-84	Gravity Main	4704 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-85	Gravity Main	4705 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00127-86	Gravity Main	4706 Fox Pointe Ct. Glen Mills, PA	Chadds Ford Township
04-00-00204-45	Gravity Main	Pleasant Hill Drive. Glen Mills, PA	Chadds Ford Township
19-00-00330-01	Gravity Main	18 Roscommon Rd , Edgmont Twp. PA	Edgmont Township
19-00-00330-02	Gravity Main	22 Roscommon Rd , Edgmont Twp. PA	Edgmont Township
19-00-00330-03	Gravity Main	29 Roscommon Rd , Edgmont Twp. PA	Edgmont Township
19-00-00134-00	Gravity Main	26 Roscommon Rd , Edgmont Twp. PA	Edgmont Township
19-00-00136-03	Gravity Main	4451 Gradyville Rd, Edgmont Twp. PA	Edgmont Township
19-00-00037-72	Gravity Main	42 Charter Oak Dr, Newtown Sq. PA	Edgmont Township
19-00-00037-71	Gravity Main	44 Charter Oak Dr, Newtown Sq. PA	Edgmont Township
19-00-00261-03	Gravity Main	3 OAK CIR. Newtown Sq. PA	Edgmont Township
19-00-00349-00		2 Spruce Road, Newtown Sq. PA	Edgmont Township
19-00-00332-11		3523 RunnyMeade Dr. Edmont Twp. PA	Edgmont Township
19-00-00332-10		3525 RunnyMeade Dr. Edmont Twp. PA	Edgmont Township
19-00-00294-00	Gravity Main	7745 Providence Rd, Newtown Sq. PA	Edgmont Township
19-00-00425-01	Gravity Main	4989 Weste Chester Pike, Edmont Twp. PA	Edgmont Township
30-00-01167-00	Force Main	Gradyville Rd. Edmont Twp. PA	Edgmont Township
19-00-00395-00	Gravity Main	Castle Rock	Edgmont Township
19-00-00419-10	Gravity Main	4753 Weste Chester Pike, Edmont Twp. PA	Edgmont Township
19-00-00332-07	Pump Station	3531 RunnyMeade Dr. Edmont Twp. PA	Edgmont Township
19-00-00047-51	Pump Station	45 Dream Valley Dr, Edmont Twp. PA	Edgmont Township
19-00-00000-00		RunnyMeade Dr. Edmont Twp. PA	Edgmont Township
19-00-00030-56	Gravity Main	70 Carnoutstie Way, Media, PA	Edgmont Township
31-00-01383-02	Force Main	Summit Ave	Norwood
31-00-00609-03	Force Main	Winova Ave, Norwood , PA	Norwood
20-00-01130-02	Force Main	1851 Maple Ave, Folcroft, PA	Folcroft
20-00-00063-01	Force Main	Maple & Ashland Ave, Folcroft PA	Folcroft
24-00-00302-00	Gravity Main	Green St. Marcus Hook, PA	Marcus Hook Borough
49-06-00500-00	Gravity Main	Penn St. & South Eyre Dr.	Chester City
49-06-00568-00	Gravity Main	Penn St. & South Eyre Dr.	Chester City
15-00-02052-00	Force Main	Calcoon Hook Rd. & Tribbitt Ave, Sharon Hill, PA	Darby Township
15-00-02050-00	Pump Station	Calcoon Hook Rd. & Tribbitt Ave, Sharon Hill, PA	Darby Township
15-00-02058-00	Force Main	Calcoon Hook Rd. & Tribbitt Ave, Sharon Hill, PA	Darby Township

49-07-01084-00	Gravity Main	Villa Drive, Chester City	Chester City
49-07-01769-00	Gravity Main	Villa Drive, Chester City	Chester City
49-07-01779-00	Gravity Main	Villa Drive, Chester City	Chester City
31-00-00609-01	Force Main	Hook Rd, Norwood, PA	Norwood
31-00-00609-02	Force Main	Hook Rd, Norwood, PA	Norwood
49-03-00183-00	Gravity Main	301 303 E 3RD ST	Eddystone Borough
49-03-00186-00	Gravity Main	FRONT ST	Eddystone Borough
20-00-00028-01	Force Main	Maple & Ashland Ave, Folcroft PA	Folcroft
39-00-00000-00		Rose Valley	Rose Valley Borough
49-10-00608-00	Gravity Main	Seaport Dr. Chester, PA	Chester City
49-11-01313-00	Force Main	Seaport Dr. Chester, PA	Chester City
49-10-00603-00		Seaport Dr. Chester, PA	Chester City
49-10-00607-00	Gravity Main	Seaport Dr. Chester, PA	Chester City
49-10-00604-00	Force Main	Seaport Dr. Chester, PA	Chester City
33-00-00867-00	Force Main	LAZARETTO RD, Prospect Park, PA	Prospect Park
33-00-00228-10	Force Main	Darby Crescent Rd, Prospect Park, PA	Prospect Park
20-00-01127-00	Force Main	Folcroft Landfill	Folcroft
20-00-01135-01	Force Main	Horne Dr. Folcroft, PA	Folcroft
20-00-01135-03	Force Main	6 Horne Dr. Folcroft, PA	Folcroft
20-00-01135-05	Force Main	4 Horne Dr. Folcroft, PA	Folcroft
20-00-01251-02	Force Main	2500 HENDERSON BLVD. Folcroft, PA	Folcroft
49-06-00003-00	Force Main	132 W. 2nd Street, Chester, PA	Chester City
49-03-00364-00	Force Main	304 E 5th St,. Chester, PA	Chester City
07-00-00275-01	Gravity Main	Fairgrounds	Chester Township
07-00-00202-00	Gravity Main	Fairgrounds	Chester Township
49-03-00262-00	Force Main	111 East 4th St. Chester, PA	Chester City
49-03-00263-00	Force Main	113 East 4th St. Chester, PA	Chester City
18-00-00500-03	Force Main	Rt 291	Ridley Township
49-03-00264-00	Force Main	115 East 4th St. Chester, PA	Chester City
18-00-00500-06	Force Main	Rt 291	Ridley Township
49-03-00265-00	Force Main	117 East 4th St. Chester, PA	Chester City
49-03-00266-00	Force Main	119 East 4th St. Chester, PA	Chester City
49-03-00267-00	Force Main	121 East 4th St. Chester, PA	Chester City
49-03-00268-00	Force Main	123 East 4th St. Chester, PA	Chester City
49-03-00269-00	Force Main	125 East 4th St. Chester, PA	Chester City
49-03-00270-00	Force Main	127 East 4th St. Chester, PA	Chester City
49-03-00271-00	Force Main	129 East 4th St. Chester, PA	Chester City
49-03-00362-00	Force Main	304 East 5th St. Chester, PA	Chester City
49-03-00365-00	Force Main	306 East 5th St. Chester, PA	Chester City
49-03-00366-00	Force Main	310 East 5th St. Chester, PA	Chester City
49-03-00367-00	Force Main	312 East 5th St. Chester, PA	Chester City
49-03-00368-00	Force Main	314 East 5th St. Chester, PA	Chester City
49-03-00369-00	Force Main	316 East 5th St. Chester, PA	Chester City
49-03-00370-00	Force Main	318 East 5th St. Chester, PA	Chester City
49-03-00371-00	Force Main	320 East 5th St. Chester, PA	Chester City
49-03-00372-00	Force Main	E 5th St. Alley	Chester City
49-03-00373-00	Force Main	322 East 5th St. Chester, PA	Chester City
49-03-00374-00	Force Main	324 East 5th St. Chester, PA	Chester City
49-03-00375-00	Force Main	326 East 5th St. Chester, PA	Chester City
49-03-00376-00	Force Main	328 East 5th St. Chester, PA	Chester City
49-03-00377-00	Force Main	330 East 5th St. Chester, PA	Chester City
49-03-00378-00	Force Main	332 East 5th St. Chester, PA	Chester City
49-03-00379-00	Force Main	334 East 5th St. Chester, PA	Chester City
49-03-00380-00	Force Main	336 East 5th St. Chester, PA	Chester City
49-03-00381-00	Force Main	338 East 5th St. Chester, PA	Chester City
49-06-00182-00	Force Main	300 West 3rd St. Chester, PA	Chester City
49-06-00168-00	Force Main	200 West 3rd St., Chester	Chester City
38-01-00092-02	Force Main	Sellers Ave	Ridley Township
49-06-00283-00	Force Main	3rd & Penn St.	Chester City
49-04-00475-00	Gravity Main	805-813 Ave of the States, Chester, PA	Chester City

19-00-00377-50	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-51	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-52	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-53	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-54	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-55	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-56	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-57	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-58	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-59	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-60	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-61	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-62	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-63	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-64	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-65	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-66	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-67	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-68	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-69	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-70	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-71	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-72	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-73	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-74	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-75	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-76	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-77	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-78	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-79	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-80	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-81	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-82	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-83	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-84	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-85	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-86	Trotters Court	Trotters Court	Edgmont Township
19-00-00377-87	Trotters Court	Trotters Court	Edgmont Township
20-00-00763-00	Force Main	Calcoon Hook & Tribbett Rd.	Folcroft
49-03-00450-00	Gravity Main	E FRONT ST	Chester City
49-03-00458-00	Gravity Main	E FRONT ST	Chester City
07-00-00275-02	Gravity Main	Fairgrounds	Chester Township
20-00-01491-01	Pump Station	Taylor Dr.	Folcroft
24-00-00032-04	Force Main	4TH ST E	Marcus Hook Borough
20-00-01507-01	Force Main	TAYLOR DR	Folcroft
18-00-00096-00	Force Main	7TH ST	Eddystone Borough
49-03-00423-00	Force Main	241 E 5th St.	Chester City
49-06-00180-00	Force Main	222 228 3RD ST W	Chester City
49-06-00049-00	Force Main	2ND ST W	Chester City
49-07-00039-00	Force Main	2ND ST W	Chester City
38-06-00854-02	Force Main	Dorothy Rd	Ridley Township
49-03-00228-00	Force Main	4TH ST W	Chester City
38-06-00903-01	Force Main	SELLERS AVE	Ridley Township
49-03-00202-01	Force Main	201 5TH ST E	Chester City
49-03-00578-00	Force Main	405 Hickson St.	Chester CIty
49-03-00236-00	Force Main	614 4TH ST E	Chester City
49-03-00237-00	Force Main	616 4TH ST E	Chester City
49-03-00238-00	Force Main	618 4TH ST E	Chester City
49-03-00239-00	Force Main	620 4TH ST E	Chester City
49-03-00240-00	Force Main	622 4TH ST E	Chester City

49-03-00241-00	Force Main	626 4TH ST E	Chester City
49-03-00242-00	Force Main	628 4TH ST E	Chester City
49-03-00243-00	Gravity Main	712 4TH ST E	Chester City
49-03-00244-00	Force Main	716 4TH ST E	Chester City
49-03-00245-00	Force Main	718 4TH ST E	Chester City
49-03-00246-00	Force Main	722 4TH ST E	Chester City
49-03-00247-00	Force Main	724 4TH ST E	Chester City
49-03-00248-00	Force Main	726 4TH ST E	Chester City
49-03-00700-00	Force Main	724 4TH ST E	Chester City
49-03-00701-00	Force Main	4TH ST E	Chester City
49-03-00230-00	Force Main	600 4TH ST E	Chester City
49-03-00231-00	Force Main	604 4TH ST E	Chester City
49-03-00232-00	Force Main	606 4TH ST E	Chester City
49-03-00233-00	Force Main	608 4TH ST E	Chester City
49-03-00234-00	Force Main	610 4TH ST E	Chester City
49-03-00235-00	Force Main	612 4TH ST E	Chester City
49-03-00577-00	Force Main	403 HINKSON ST	Chester City
07-00-00260-01	Force Main	52 CONCORD RD	Chester Township
24-00-00481-02	Force Main	PENN AVE	Marcus Hook Borough
46-00-00524-02	Force Main	STONEY CREEK RD	Trainer Borough
08-00-00774-01	Gravity Main	MORTON ST	Lower Chichester
24-00-00458-00	Gravity Main	MARKET ST	Marcus Hook Borough
08-00-00879-03	Pump Station	1500 NAAMANS CREEK RD	Lower Chichester
19-00-00330-09	Force Main	PROVIDENCE RD	Edgmont Township
19-00-00332-09	Gravity Main	RUNNYMEADE DR	Edgmont Township
19-00-00383-75	Gravity Main	31 POST RUN	Edgmont Township
19-00-00383-76	Gravity Main	33 POST RUN	Edgmont Township
19-00-00325-64	Gravity Main	41 RIDGEVIEW RD	Edgmont Township
19-00-00079-59	Gravity Main	FLYWAY DR	Edgmont Township
19-00-00079-60	Gravity Main	FLYWAY DR	Edgmont Township
19-00-00079-61	Gravity Main	8 FLYWAY DR	Edgmont Township
19-00-00079-62	Gravity Main	10 FLYWAY DR	Edgmont Township
19-00-00079-63	Gravity Main	12 FLYWAY DR	Edgmont Township
19-00-00079-64	Gravity Main	14 FLYWAY DR	Edgmont Township
19-00-00079-65	Gravity Main	16 FLYWAY DR	Edgmont Township
19-00-00037-88	Gravity Main	9 CHARTER OAK DR	Edgmont Township
19-00-00037-51	Gravity Main	59 CHARTER OAK DR	Edgmont Township
19-00-00037-52	Gravity Main	55 CHARTER OAK DR	Edgmont Township
19-00-00037-56	Gravity Main	47 CHARTER OAK DR	Edgmont Township
19-00-00037-70	Gravity Main	56 CHARTER OAK DR	Edgmont Township
19-00-00037-73	Gravity Main	40 CHARTER OAK DR	Edgmont Township
19-00-00037-74	Gravity Main	38 CHARTER OAK DR	Edgmont Township
19-00-00037-75	Gravity Main	36 CHARTER OAK DR	Edgmont Township
19-00-00037-76	Gravity Main	34 CHARTER OAK DR	Edgmont Township
19-00-00037-77	Gravity Main	32 CHARTER OAK DR	Edgmont Township
19-00-00037-79	Gravity Main	28 CHARTER OAK DR	Edgmont Township
19-00-00037-80	Gravity Main	26 CHARTER OAK DR	Edgmont Township
19-00-00037-81	Gravity Main	24 CHARTER OAK DR	Edgmont Township
19-00-00037-82	Gravity Main	22 CHARTER OAK DR	Edgmont Township
19-00-00029-56	Gravity Main	15 BEECHVIEW DR	Edgmont Township
19-00-00029-57	Gravity Main	12 BEECHVIEW DR	Edgmont Township
19-00-00029-84	Gravity Main	10 MUIRFIELD CT	Edgmont Township
19-00-00025-06	Gravity Main	MUIRFIELD CT	Edgmont Township
19-00-00163-87	Gravity Main	25 LANGTON LN	Edgmont Township
19-00-00163-89	Gravity Main	22 LANGTON LN	Edgmont Township
19-00-00163-90	Gravity Main	20 LANGTON LN	Edgmont Township
19-00-00326-10	Gravity Main	ROCK HILL RD	Edgmont Township
19-00-00326-11	Gravity Main	7 ROCK HILL RD	Edgmont Township
19-00-00326-12	Gravity Main	ROCK HILL RD	Edgmont Township
19-00-00326-13	Gravity Main	ROCK HILL RD	Edgmont Township

19-00-00326-14	Gravity Main	13 ROCK HILL RD	Edgmont Township
19-00-00326-15	Gravity Main	ROCK HILL RD	Edgmont Township
19-00-00326-21	Gravity Main	2 ROCK HILL RD	Edgmont Township
19-00-00064-27	Gravity Main	30 SAWGRASS LN	Edgmont Township
19-00-00064-28	Gravity Main	31 SAWGRASS LN	Edgmont Township
19-00-00064-29	Gravity Main	32 SAWGRASS LN	Edgmont Township
19-00-00030-28	Gravity Main	44 SAWGRASS LN	Edgmont Township
19-00-00030-36	Gravity Main	36 SAWGRASS LN	Edgmont Township
19-00-00030-37	Gravity Main	35 SAWGRASS LN	Edgmont Township
19-00-00030-38	Gravity Main	34 SAWGRASS LN	Edgmont Township
19-00-00030-39	Gravity Main	33 SAWGRASS LN	Edgmont Township
19-00-00284-31	Gravity Main	307 PRITCHARD PL	Edgmont Township
19-00-00284-43	Gravity Main	407 PRITCHARD PL	Edgmont Township
19-00-00284-51	Gravity Main	503 PRITCHARD PL	Edgmont Township
19-00-00284-76	Gravity Main	704 PRITCHARD PL	Edgmont Township
19-00-00285-33	Gravity Main	1112 PRITCHARD PL	Edgmont Township
19-00-00285-38	Gravity Main	1205 PRITCHARD PL	Edgmont Township
19-00-00287-10	Gravity Main	3641 PROVIDENCE RD	Edgmont Township
19-00-00287-11	Gravity Main	3645 PROVIDENCE RD	Edgmont Township
19-00-00288-23	Gravity Main	PROVIDENCE RD	Edgmont Township
19-00-00288-32	Gravity Main	912 PRITCHARD PL	Edgmont Township
19-00-00288-34	Gravity Main	PROVIDENCE RD	Edgmont Township
19-00-00288-45	Gravity Main	PRITCHARD PL	Edgmont Township
19-00-00288-81	Gravity Main	PRITCHARD PL	Edgmont Township
19-00-00288-97	Gravity Main	PRITCHARD PL	Edgmont Township
19-00-00163-41	Gravity Main	33 HORSESHOE LN	Edgmont Township
19-00-00163-42	Gravity Main	35 HORSESHOE LN	Edgmont Township
19-00-00030-10	Gravity Main	67 BRIDLE WAY	Edgmont Township
19-00-00030-11	Gravity Main	68 BRIDLE WAY	Edgmont Township
19-00-00030-15	Gravity Main	59 BRIDLE WAY	Edgmont Township
19-00-00030-16	Gravity Main	57 BRIDLE WAY	Edgmont Township
19-00-00030-17	Gravity Main	55 BRIDLE WAY	Edgmont Township
19-00-00030-18	Gravity Main	53 BRIDLE WAY	Edgmont Township
19-00-00030-19	Gravity Main	51 BRIDLE WAY	Edgmont Township
19-00-00330-45	Gravity Main	1 SADDLE RUN	Edgmont Township
19-00-00037-94	Gravity Main	1 PRITCHARD PL	Edgmont Township
19-00-00030-57	Gravity Main	80 CARNOUSTIE WAY	Edgmont Township
19-00-00030-58	Gravity Main	90 CARNOUSTIE WAY	Edgmont Township
19-00-00030-59	Gravity Main	100 CARNOUSTIE WAY	Edgmont Township
19-00-00030-69	Gravity Main	195 CARNOUSTIE WAY	Edgmont Township
19-00-00030-82	Gravity Main	35 KINGSTON RD	Edgmont Township
19-00-00060-76	Gravity Main	1025 ARBOR WAY	Edgmont Township
19-00-00060-77	Gravity Main	1023 ARBOR WAY	Edgmont Township
19-00-00054-51	Gravity Main	19 COLUMBUS AVE	Edgmont Township
19-00-00064-00	Gravity Main	15 Columbus Ave.	Edgmont Township
19-00-00448-03	Gravity Main	1200 WINDERLY LN	Edgmont Township
19-00-00448-04	Gravity Main	1190 WINDERLY LN	Edgmont Township
19-00-00448-05	Gravity Main	1180 WINDERLY LN	Edgmont Township
19-00-00263-51	Gravity Main	5 HICKORY RUN	Edgmont Township
19-00-00263-54	Gravity Main	6 HICKORY RUN	Edgmont Township
19-00-00263-55	Gravity Main	2 HICKORY RUN	Edgmont Township
19-00-00037-54	Gravity Main	51 Charter Oak Dr	Edgmont Township
07-00-00207-00	Force Main	CONCORD RD	Chester Township
24-00-00007-00	Gravity Main	14 CEDAR ST	Marcus Hook Borough
07-00-00137-00	Gravity Main	2902 BETHEL RD	Chester Township
07-00-00226-04	Gravity Main	CONCORD RD	Chester Township
07-00-00275-04	Gravity Main	ENGLE ST	Chester Township
07-00-00322-00	Gravity Main	ENGLE ST	Chester Township
07-00-00392-00	Force Main	2404 FELTON AVE	Chester Township
07-00-00417-00	Force Main	2410 GREEN ST	Chester Township

07-00-00418-00	Force Main	2418 GREEN ST	Chester Township
07-00-00419-00	Force Main	2424 GREEN ST	Chester Township
07-00-00420-00	Force Main	2434 GREEN ST	Chester Township
07-00-00853-34	Gravity Main	2105 WILLIAMS CIR S	Chester Township
07-00-00854-00	Gravity Main	WILLIAMS CIR E	Chester Township
07-00-00866-00	Gravity Main	YARNALL ST	Chester Township
07-00-00883-07	Gravity Main	2100 10TH ST W	Chester Township
24-00-00857-00	Gravity Main	26 WALNUT ST	Marcus Hook Borough
24-00-00638-02	Gravity Main	POST RD	Marcus Hook Borough
24-00-00638-05	Gravity Main	POST RD	Marcus Hook Borough
24-00-00638-12	Gravity Main	POST RD	Marcus Hook Borough
24-00-00638-13	Force Main	POST RD	Marcus Hook Borough
24-00-00638-14	Force Main	POST RD	Marcus Hook Borough
24-00-00638-15	Force Main	POST RD	Marcus Hook Borough
24-00-00638-17	Force Main	POST RD	Marcus Hook Borough
24-00-00638-18	Gravity Main	POST RD	Marcus Hook Borough
33-00-00232-50	Force Main	Darby Rd	Prospect Park
33-00-00233-00	Force Main	Darby Rd	Prospect Park
33-00-00852-01	Force Main	100 LINCOLN AVE	Prospect Park
49-11-00007-00	Force Main	CLAYTON ST	Chester City
04-00-00338-00	Gravity Main	1833 WILMINGTON PK	Chadds Ford Township
13-00-00611-58	Force Main	PLEASANT HILL DR	Concord Township
13-00-01060-00	Gravity Main	449 WILMINGTON PK	Concord Township
13-00-01060-08	Gravity Main	SPRINGHILL DR	Concord Township
32-00-00082-00	Gravity Main	300 E Avon Rd. Chester, PA	Nether Providence Township
34-00-00426-00	Gravity Main	Bullns La, Nether Prov. Township	Nether Providence Township
34-00-00648-01	Gravity Main	Harvey & Chestnut, Nether Prov. PA	Nether Providence Township
34-00-00985-24	Gravity Main	2 Irving Rd. Wallingford, PA	Nether Providence Township
34-00-00985-25	Gravity Main	1012 Glen Rd. Wallingford, PA	Nether Providence Township
34-00-00985-26	Gravity Main	1013 Glen Rd. Nether Prov. PA	Nether Providence Township
34-00-00985-27	Gravity Main	1012 Glen Rd. Wallingford, PA	Nether Providence Township
34-00-00985-28	Gravity Main	Irving Rd. Chester, PA Lot #15	Nether Providence Township
34-00-00985-29	Gravity Main	1013 Glen Rd. Nether Prov. PA	Nether Providence Township
34-00-01133-19	Gravity Main	802 Harvey Rd, Nether Prov. PA	Nether Providence Township
34-00-01324-01	Gravity Main	Irvington & Bullens La. Chester, PA	Nether Providence Township
34-00-02081-00	Gravity Main	1020 S Providence Rd. Nether Prov. PA	Nether Providence Township
34-00-02081-02	Gravity Main	1 Irving Rd, Nether Prov. Pa	Nether Providence Township
34-00-02144-00	Gravity Main	Providence & Irving Rd. Nether Prov. PA	Nether Providence Township
38-02-00222-02	Gravity Main	Bulllens La. Ridley Township, PA	Ridley Township
49-01-00270-00	Gravity Main	700 E. 14th St. Chester, PA	Chester City
49-01-00959-01	Gravity Main	1000 MacDade Boul. Chester, PA	Chester City
49-01-01182-90	Gravity Main	Melrose & 22nd St. Chester, Pa	Chester City
49-01-01478-00	Gravity Main	783-780 E 24th St. Chester, PA	Chester City
49-01-02699-00	Gravity Main	Ridley Creek & E 25th Nether Prov. Pa	Chester City
49-02-01374-00	Gravity Main	1401 A Morton Ave. Chester, PA	Chester City
49-02-01554-00	Gravity Main	1400-1422 Remington St. Chester, PA	Chester City
49-05-00431-00	Gravity Main	E 9th and Ridley Creek	Chester City
49-02-01374-91	Gravity Main	1415 Remington St. Chester, PA	Chester City
49-02-01374-86	Gravity Main	1401 Remington St. Chester, PA	Chester City
34-00-00592-01	Gravity Main	Taylor Arboretum	Nether Providence Township
49-01-03070-01	Gravity Main	Chester Park	Chester City
46-00-00659-03	Gravity Main	TOWNSHIP LINE RD	Trainer Borough
46-00-00485-55	Gravity Main	TOWNSHIP LINE RD	Trainer Borough
46-00-00485-70	Gravity Main	9TH ST	Trainer Borough
46-00-00363-00	Gravity Main	9TH ST	Trainer Borough
46-00-00187-25	Gravity Main	5TH ST	Trainer Borough
46-00-00300-00	Gravity Main	506 MAIN ST	Trainer Borough
46-00-00157-00	Gravity Main	DELVIEW AVE	Trainer Borough
46-00-00636-56	Gravity Main	3523 12TH ST W	Trainer Borough
46-00-00334-00	Gravity Main	FORREST ST	Trainer Borough

46-00-00537-00	Gravity Main	3524 DAWES CT	Trainer Borough
46-00-00306-01	Gravity Main	MAIN ST	Trainer Borough
46-00-00659-00	Gravity Main	POST RD	Trainer Borough
46-00-00325-01	Gravity Main	MAIN ST	Trainer Borough
46-00-00659-01	Gravity Main	TOWNSHIP LINE RD	Trainer Borough
46-00-00330-00	Gravity Main	9TH ST	Trainer Borough
46-00-00189-00	Gravity Main	Forrest St	Trainer Borough
46-00-00192-00	Gravity Main	3501 10th St.	Trainer Borough
46-00-00191-00	Gravity Main	929 Sunset St	Trainer Borough
46-00-00681-00	Gravity Main	7 Woodland Ave	Trainer Borough
46-00-00188-00	Gravity Main	3531 Dawes Ct.	Trainer Borough
46-00-00636-35	Gravity Main	3518 12TH ST W	Trainer Borough
46-00-00637-00	Gravity Main	3501 13TH ST W	Trainer Borough
46-00-00638-00	Gravity Main	3507 13TH ST	Trainer Borough
24-00-00827-00	Gravity Main	3 3RD ST W	Marcus Hook Borough
24-00-00456-02	Gravity Main	MARKET ST	Marcus Hook Borough
24-00-00817-01	Gravity Main	10TH ST W	Marcus Hook Borough
24-00-00517-00	Gravity Main	MARKET ST	Marcus Hook Borough
13-00-00611-56	Gravity Main	86 PLEASANT HILL DR	Concord Township
39-00-00041-50	Gravity Main	LONGPOINT LN S	Rose Valley Borough
39-00-00011-50	Pump Station	BROOKHAVEN RD	Rose Valley Borough
39-00-00161-48	Gravity Main	1 OLD MILL LN	Rose Valley Borough
49-06-00790-00	Gravity Main	PENN ST	Chester City
49-03-00012-00	Gravity Main	2ND ST W	Chester City
49-03-00105-00	Gravity Main	300 700 3RD ST E	Chester City
49-01-03070-00	Gravity Main	WORRELL ST	Chester City
47-00-00261-09	Gravity Main	MAIN ST	Upland Borough
47-00-00454-04	Gravity Main	9 SCOTT AVE	Upland Borough
47-00-00454-05	Gravity Main	8 SCOTT AVE	Upland Borough
47-00-00454-15	Gravity Main	16 SCOTT AVE	Upland Borough
39-00-00040-00	Gravity Main	8 LONGPOINT LN N	Rose Valley Borough
39-00-00068-00	Gravity Main	12 Orchard Ln	Rose Valley Borough
39-00-00009-01	Gravity Main	607 BROOKHAVEN RD	Rose Valley Borough
49-05-00227-00	Force Main	8TH ST W	Chester City
49-11-01306-04	Gravity Main	1208 CULHANE ST	Chester City
49-11-01306-12	Gravity Main	1108 CULHANE ST	Chester City
49-11-01306-13	Gravity Main	1106 CULHANE ST	Chester City
49-11-01306-20	Gravity Main	1209 BEVERLY LN	Chester City
49-11-01306-24	Gravity Main	BEVERLY LN	Chester City
49-11-01306-32	Gravity Main	1102 BEVERLY LN	Chester City
49-11-01306-33	Gravity Main	1104 BEVERLY LN	Chester City
49-11-01306-35	Gravity Main	1200 BEVERLY LN	Chester City
49-11-01306-36	Gravity Main	1202 BEVERLY LN	Chester City
49-11-01306-37	Gravity Main	1204 BEVERLY LN	Chester City
49-11-01306-38	Gravity Main	1206 BEVERLY LN	Chester City
49-11-01306-39	Gravity Main	1208 BEVERLY LN	Chester City
32-00-00056-00	Gravity Main	206 AVON RD E	Parkside Borough
32-00-00057-00	Gravity Main	208 AVON RD E	Parkside Borough
32-00-00058-00	Gravity Main	210 AVON RD E	Parkside Borough
32-00-00059-00	Gravity Main	AVON RD E	Parkside Borough
32-00-00060-00	Gravity Main	220 AVON RD E	Parkside Borough
32-00-00061-00	Gravity Main	222 AVON RD E	Parkside Borough
32-00-00061-01	Gravity Main	224 AVON RD E	Parkside Borough
32-00-00062-00	Gravity Main	226 AVON RD E	Parkside Borough
32-00-00063-00	Gravity Main	230 AVON RD E	Parkside Borough
32-00-00063-01	Gravity Main	228 AVON RD E	Parkside Borough
32-00-00065-00	Gravity Main	232 AVON RD E	Parkside Borough
32-00-00066-00	Gravity Main	234 AVON RD E	Parkside Borough
32-00-00067-00	Gravity Main	236 AVON RD E	Parkside Borough
32-00-00068-00	Gravity Main	238 AVON RD E	Parkside Borough

32-00-00069-00	Gravity Main	240 AVON RD	E	Parkside Borough
32-00-00070-00	Gravity Main	242 AVON RD	E	Parkside Borough
32-00-00071-00	Gravity Main	244 AVON RD	E	Parkside Borough
32-00-00072-00	Gravity Main	246 AVON RD	E	Parkside Borough
32-00-00073-00	Gravity Main	248 AVON RD	E	Parkside Borough
32-00-00074-00	Gravity Main	250 AVON RD	E	Parkside Borough
32-00-00075-00	Gravity Main	252 AVON RD	E	Parkside Borough
32-00-00076-00	Gravity Main	254 AVON RD	E	Parkside Borough
32-00-00077-00	Gravity Main	256 AVON RD	E	Parkside Borough
32-00-00078-00	Gravity Main	258 AVON RD	E	Parkside Borough
32-00-00079-00	Gravity Main	260 AVON RD	E	Parkside Borough
32-00-00080-00	Gravity Main	262 AVON RD	E	Parkside Borough
47-00-00261-03	Gravity Main	1100 MAIN ST		Upland Borough
24-00-00309-00	Gravity Main	5 MALLON ST		Marcus Hook Borough
24-00-00309-01	Gravity Main	7 MALLON ST		Marcus Hook Borough
24-00-00309-02	Gravity Main	8 MALLON ST		Marcus Hook Borough
24-00-00309-03	Gravity Main	11 MALLON ST		Marcus Hook Borough
24-00-00309-04	Gravity Main	13 MALLON ST		Marcus Hook Borough
24-00-00309-05	Gravity Main	15 MALLON ST		Marcus Hook Borough
39-00-00030-00	Gravity Main	1 LONGPOINT LN	S	Rose Valley Borough
39-00-00031-00	Gravity Main	2 LONGPOINT LN	S	Rose Valley Borough
39-00-00032-00	Gravity Main	26 LONGPOINT LN	S	Rose Valley Borough
39-00-00033-00	Gravity Main	25 LONGPOINT LN	S	Rose Valley Borough
39-00-00034-00	Gravity Main	24 LONGPOINT LN	S	Rose Valley Borough
39-00-00035-00	Gravity Main	23 LONGPOINT LN	S	Rose Valley Borough
39-00-00036-00	Gravity Main	22 LONGPOINT LN	S	Rose Valley Borough
39-00-00037-00	Gravity Main	21 LONGPOINT LN		Rose Valley Borough
39-00-00039-00	Gravity Main	11 LONGPOINT LN		Rose Valley Borough
39-00-00041-00	Gravity Main	17 LONGPOINT LN	S	Rose Valley Borough
39-00-00042-00	Gravity Main	19 LONGPOINT LN		Rose Valley Borough
39-00-00043-00	Gravity Main	27 LONGPOINT LN	S	Rose Valley Borough
39-00-00045-00	Gravity Main	29 LONGPOINT LN	S	Rose Valley Borough
39-00-00046-00	Gravity Main	30 LONGPOINT LN	S	Rose Valley Borough
39-00-00047-00	Gravity Main	31 LONGPOINT LN	S	Rose Valley Borough
39-00-00048-00	Gravity Main	32 LONGPOINT LN	S	Rose Valley Borough
39-00-00049-00	Gravity Main	33 LONGPOINT LN	S	Rose Valley Borough
39-00-00052-00	Gravity Main	5 LONGPOINT LN	N	Rose Valley Borough
39-00-00053-00	Gravity Main	6 LONGPOINT LN		Rose Valley Borough
39-00-00054-00	Gravity Main	7 LONGPOINT LN	N	Rose Valley Borough
39-00-00056-00	Gravity Main	9 LONGPOINT LN	N	Rose Valley Borough
39-00-00056-01	Gravity Main	10 LONGPOINT LN		Rose Valley Borough
39-00-00057-00	Gravity Main	16 LONGPOINT LN	N	Rose Valley Borough
39-00-00058-00	Gravity Main	14 LONGPOINT LN	N	Rose Valley Borough
39-00-00059-00	Gravity Main	15 LONGPOINT LN	N	Rose Valley Borough
39-00-00060-00	Gravity Main	40 LONGPOINT LN	N	Rose Valley Borough
39-00-00069-00	Gravity Main	15 ORCHARD LN		Rose Valley Borough
39-00-00069-04	Gravity Main	20 ORCHARD LN		Rose Valley Borough
39-00-00069-06	Gravity Main	5 ORCHARD LN		Rose Valley Borough
39-00-00159-00	Gravity Main	45 ROSE VALLEY RD		Rose Valley Borough
39-00-00160-00	Gravity Main	51 ROSE VALLEY RD		Rose Valley Borough
39-00-00161-00	Gravity Main	2 OLD MILL LN		Rose Valley Borough
39-00-00161-07	Gravity Main	109 TRAYMORE LN		Rose Valley Borough
39-00-00161-09	Gravity Main	152 TRAYMORE LN		Rose Valley Borough
39-00-00161-10	Gravity Main	150 TRAYMORE LN		Rose Valley Borough
39-00-00161-11	Gravity Main	148 TRAYMORE LN		Rose Valley Borough
39-00-00161-12	Gravity Main	146 TRAYMORE LN		Rose Valley Borough
39-00-00161-13	Gravity Main	144 TRAYMORE LN		Rose Valley Borough
39-00-00161-14	Gravity Main	142 TRAYMORE LN		Rose Valley Borough
39-00-00161-15	Gravity Main	140 TRAYMORE LN		Rose Valley Borough
39-00-00161-16	Gravity Main	TRAYMORE LN		Rose Valley Borough

39-00-00161-17	Gravity Main	136 TRAYMORE LN	Rose Valley Borough
39-00-00161-18	Gravity Main	134 TRAYMORE LN	Rose Valley Borough
39-00-00161-19	Gravity Main	132 TRAYMORE LN	Rose Valley Borough
39-00-00161-20	Gravity Main	130 TRAYMORE LN	Rose Valley Borough
39-00-00161-21	Gravity Main	128 TRAYMORE LN	Rose Valley Borough
39-00-00161-27	Gravity Main	205 SAUL LN	Rose Valley Borough
39-00-00161-35	Gravity Main	113 TRAYMORE LN	Rose Valley Borough
39-00-00161-36	Gravity Main	115 TRAYMORE LN	Rose Valley Borough
39-00-00161-37	Gravity Main	117 TRAYMORE LN	Rose Valley Borough
39-00-00161-38	Gravity Main	119 TRAYMORE LN	Rose Valley Borough
39-00-00161-39	Gravity Main	121 TRAYMORE LN	Rose Valley Borough
39-00-00161-40	Gravity Main	123 TRAYMORE LN	Rose Valley Borough
39-00-00161-41	Gravity Main	125 TRAYMORE LN	Rose Valley Borough
39-00-00161-45	Gravity Main	151 TRAYMORE LN	Rose Valley Borough
39-00-00161-47	Gravity Main	3 OLD MILL LN	Rose Valley Borough
39-00-00161-49	Gravity Main	TRAYMORE LN	Rose Valley Borough
39-00-00161-50	Gravity Main	ROSE VALLEY RD	Rose Valley Borough
39-00-00161-52	Gravity Main	TRAYMORE LN	Rose Valley Borough
46-00-00365-00	Gravity Main	3209 9TH ST W	Trainer Borough
46-00-00365-01	Gravity Main	3211 9TH ST W	Trainer Borough
46-00-00366-00	Gravity Main	3207 9TH ST W	Trainer Borough
46-00-00368-00	Gravity Main	3201 9TH ST	Trainer Borough
46-00-00525-01	Gravity Main	9TH ST	Trainer Borough
46-00-00525-03	Gravity Main	TRAINER ST	Trainer Borough
39-00-00007-00	Gravity Main	BART SHAY LN	Rose Valley Borough
39-00-00020-00	Gravity Main	8 CHESTNUT LN	Rose Valley Borough
39-00-00020-01	Gravity Main	13 CHESTNUT LN	Rose Valley Borough
39-00-00009-03	Gravity Main	603 BROOKHAVEN RD	Rose Valley Borough
39-00-00009-04	Gravity Main	511 BROOKHAVEN RD W	Rose Valley Borough
39-00-00022-01	Gravity Main	6 CEDAR HOLLOW DR	Rose Valley Borough
39-00-00022-02	Gravity Main	18 CEDAR HOLLOW DR	Rose Valley Borough
39-00-00022-04	Gravity Main	10 CEDAR HOLLOW DR	Rose Valley Borough
39-00-00022-03	Gravity Main	14 CEDAR HOLLOW DR	Rose Valley Borough
39-00-00022-05	Gravity Main	22 CEDAR HOLLOW DR	Rose Valley Borough
47-00-00261-05	Gravity Main	3401 3499 VISTA LN	Upland Borough
39-00-00187-37	Gravity Main	2 CEDAR HOLLOW DR	Rose Valley Borough
39-00-00009-05	Gravity Main	507 BROOKHAVEN RD W	Rose Valley Borough
39-00-00018-23	Gravity Main	30 BRIARCREST DR	Rose Valley Borough
39-00-00009-06	Gravity Main	505 BROOKHAVEN RD W	Rose Valley Borough
39-00-00009-09	Gravity Main	503 BROOKHAVEN RD	Rose Valley Borough
39-00-00018-13	Gravity Main	10 BROOKVIEW LN	Rose Valley Borough
34-00-00380-00	Gravity Main	401 BROOKHAVEN RD W	Nether Providence Township
34-00-00380-01	Gravity Main	403 BROOKHAVEN RD W	Nether Providence Township
39-00-00022-16	Gravity Main	32 FORESTVIEW RD	Rose Valley Borough
39-00-00022-17	Gravity Main	27 FORESTVIEW RD	Rose Valley Borough
39-00-00009-10	Gravity Main	2 TODMORDEN DR	Rose Valley Borough
39-00-00187-02	Gravity Main	6 TODMORDEN DR	Rose Valley Borough
49-11-01021-06	Gravity Main	3012 11TH ST W	Chester City
49-11-01037-06	Gravity Main	3013 11TH ST W	Chester City
39-00-00024-00	Gravity Main	2 LOCUST LN	Rose Valley Borough
39-00-00025-00	Gravity Main	3 LOCUST LN	Rose Valley Borough
39-00-00026-00	Gravity Main	4 LOCUST LN	Rose Valley Borough
39-00-00027-00	Gravity Main	5 LOCUST LN	Rose Valley Borough
39-00-00028-00	Gravity Main	6 LOCUST LN	Rose Valley Borough
39-00-00029-00	Gravity Main	7 LOCUST LN	Rose Valley Borough
39-00-00008-00	Gravity Main	5 OLD MILL LN	Rose Valley Borough
39-00-00018-04	Gravity Main	15 BUTTONWOOD WAY	Rose Valley Borough
39-00-00018-03	Gravity Main	8 BUTTONWOOD WAY	Rose Valley Borough
39-00-00018-05	Gravity Main	11 BUTTONWOOD WAY	Rose Valley Borough
39-00-00018-06	Gravity Main	5 BUTTONWOOD WAY	Rose Valley Borough

39-00-00101-00	Gravity Main	18 RABBIT RUN RD	Rose Valley Borough
39-00-00102-00	Gravity Main	14 RABBIT RUN RD	Rose Valley Borough
39-00-00115-00	Gravity Main	3 RABBIT RUN RD	Rose Valley Borough
39-00-00125-01	Gravity Main	6 ROSE VALLEY RD	Rose Valley Borough
39-00-00125-02	Gravity Main	2 THORNPATH WAY	Rose Valley Borough
39-00-00125-04	Gravity Main	1 THORNPATH WAY	Rose Valley Borough
39-00-00125-05	Gravity Main	5 THORNPATH WAY	Rose Valley Borough
39-00-00153-01	Gravity Main	2 ROSE VALLEY RD	Rose Valley Borough
39-00-00154-00	Gravity Main	1 ROYLEN CROFT LN	Rose Valley Borough
47-00-00291-00	Gravity Main	SCOTT AVE	Upland Borough
34-00-00192-09	Gravity Main	1017 BEECH RD	Nether Providence Township
34-00-00969-06	Gravity Main	212 FOX LN	Nether Providence Township
34-00-00969-07	Gravity Main	210 FOX LN	Nether Providence Township
34-00-00969-08	Gravity Main	208 FOX LN	Nether Providence Township
34-00-00969-09	Gravity Main	206 FOX LN	Nether Providence Township
39-00-00001-00	Gravity Main	10 APPLE BOUGH LN	Rose Valley Borough
39-00-00115-01		12 Hilltop Rd	Rose Valley Borough
39-00-00205-02	Gravity Main	117 VERNON LN	Rose Valley Borough
39-00-00154-01	Gravity Main	10 WHITE PINE LN	Rose Valley Borough
39-00-00197-00	Gravity Main	12 VALLEY VIEW RD	Rose Valley Borough
32-00-00652-00	Gravity Main	201 ROLAND RD E	Parkside Borough
32-00-00653-00	Gravity Main	203 ROLAND RD E	Parkside Borough
07-00-00254-02	Pump Station	2410 Concord Rd	Chester Township
09-00-03400-01	Gravity Main	950 TOWNSHIP LINE RD	Lower Chichester
24-00-00163-00	Gravity Main	16 8TH ST W	Marcus Hook Borough
24-00-00579-04	Gravity Main	21 8TH ST W	Marcus Hook Borough
32-00-00094-01	Gravity Main	259 BEECHWOOD RD	Parkside Borough
32-00-00164-00	Gravity Main	110 ELBON RD E	Parkside Borough
32-00-00329-00	Gravity Main	160 CHELTON RD E	Parkside Borough
32-00-00387-01	Gravity Main	2 FORESTVIEW RD E	Parkside Borough
32-00-00585-11	Gravity Main	2626 2632 PARKSIDE TERR	Parkside Borough
32-00-00595-01	Gravity Main	ELBON RD E	Parkside Borough
32-00-00598-22	Gravity Main	23 PARK VALLEI LN	Parkside Borough
32-00-00598-24	Gravity Main	25 PARK VALLEI LN	Parkside Borough
32-00-00598-25	Gravity Main	26 PARK VALLEI LN	Parkside Borough
32-00-00598-26	Gravity Main	27 PARK VALLEI LN	Parkside Borough
32-00-00598-27	Gravity Main	28 PARK VALLEI LN	Parkside Borough
32-00-00598-28	Gravity Main	29 PARK VALLEI LN	Parkside Borough
34-00-02064-00	Gravity Main	131 POSSUM HOLLOW RDW	Nether Providence Township
34-00-02066-00	Gravity Main	121 POSSUM HOLLOW RDW	Nether Providence Township
34-00-02067-00	Gravity Main	117 POSSUM HOLLOW RDW	Nether Providence Township
34-00-02067-01	Gravity Main	119 POSSUM HOLLOW RDW	Nether Providence Township
34-00-02285-00	Gravity Main	10 RIDLEY DR	Nether Providence Township
38-02-01693-99	Gravity Main	RIDLEY MILL LN	Ridley Township
39-00-00005-00	Gravity Main	23 VERNON LN	Rose Valley Borough
39-00-00019-00	Gravity Main	12 CHESTNUT LN	Rose Valley Borough
39-00-00021-00	Gravity Main	6 CHESTNUT LN	Rose Valley Borough
39-00-00022-00	Gravity Main	6 CHESTNUT LN	Rose Valley Borough
39-00-00075-00	Gravity Main	208 POSSUM HOLLOW RD	Rose Valley Borough
39-00-00075-01	Gravity Main	204 POSSUM HOLLOW RD	Rose Valley Borough
39-00-00079-00	Gravity Main	213 POSSUM HOLLOW RD	Rose Valley Borough
39-00-00080-00	Gravity Main	209 POSSUM HOLLOW RD	Rose Valley Borough
39-00-00081-00	Gravity Main	205 POSSUM HOLLOW RD	Rose Valley Borough
39-00-00083-00	Gravity Main	201 POSSUM HOLLOW RDW	Rose Valley Borough
39-00-00088-00	Gravity Main	21 PRICES LN	Rose Valley Borough
39-00-00089-00	Gravity Main	25 PRICES LN	Rose Valley Borough
39-00-00090-00	Gravity Main	5 ARBOR LN	Rose Valley Borough
39-00-00100-02	Gravity Main	22 RABBIT RUN RD	Rose Valley Borough
39-00-00103-00	Gravity Main	10 RABBIT RUN RD	Rose Valley Borough
39-00-00116-00	Gravity Main	8 HILLTOP RD	Rose Valley Borough

39-00-00117-00	Gravity Main	12 Hilltop Rd	Rose Valley Borough
39-00-00118-00	Gravity Main	16 Hilltop Rd	Rose Valley Borough
39-00-00129-00	Gravity Main	30 PRICES LN	Rose Valley Borough
39-00-00130-00	Gravity Main	44 ROSE VALLEY RD	Rose Valley Borough
39-00-00133-00	Gravity Main	64 ROSE VALLEY RD	Rose Valley Borough
39-00-00135-00	Gravity Main	60 ROSE VALLEY RD	Rose Valley Borough
39-00-00136-00	Gravity Main	4 PORTER LN	Rose Valley Borough
39-00-00137-00	Gravity Main	2 PORTER LN	Rose Valley Borough
39-00-00184-00	Gravity Main	19 SCHOOL LN	Rose Valley Borough
39-00-00185-00	Gravity Main	8 SCHOOL LN	Rose Valley Borough
39-00-00186-00	Gravity Main	SCHOOL LN	Rose Valley Borough
39-00-00186-01	Gravity Main	SCHOOL LN	Rose Valley Borough
39-00-00187-00	Gravity Main	SCHOOL LN	Rose Valley Borough
39-00-00188-00	Gravity Main	7 VALLEY VIEW RD	Rose Valley Borough
39-00-00189-00	Gravity Main	8 VALLEY VIEW RD	Rose Valley Borough
39-00-00190-00	Gravity Main	VALLEY VIEW RD	Rose Valley Borough
39-00-00199-00	Gravity Main	6 VERNON LN	Rose Valley Borough
39-00-00205-01	Gravity Main	119 VERNON LN	Rose Valley Borough
39-00-00212-00	Gravity Main	230 WOODWARD RD	Rose Valley Borough
47-00-00155-00	Gravity Main	3605 DEEPWATER LN	Upland Borough
47-00-00239-00	Gravity Main	257 259 6TH ST	Upland Borough
47-00-00261-02	Gravity Main	3RD ST	Upland Borough
47-00-00261-06	Gravity Main	6TH ST	Upland Borough
47-00-00293-00	Gravity Main	1011 MAIN ST	Upland Borough
47-00-00294-00	Gravity Main	1009 MAIN ST	Upland Borough
47-00-00286-03	Gravity Main	1151 MAIN ST	Upland Borough
47-00-00295-00	Gravity Main	1007 MAIN ST	Upland Borough
47-00-00327-00	Gravity Main	3 MAIN ST	Upland Borough
47-00-00409-00	Gravity Main	1013 1015 MULBERRY ST	Upland Borough
47-00-00423-00	Gravity Main	713 PATTON AVE	Upland Borough
47-00-00575-00	Gravity Main	1032 WOODSIDE AVE	Upland Borough
47-00-00576-00	Gravity Main	1030 WOODSIDE AVE	Upland Borough
47-00-00577-00	Gravity Main	1020 WOODSIDE AVE	Upland Borough
47-00-00579-00	Gravity Main	1006 WOODSIDE AVE	Upland Borough
47-00-00615-00	Gravity Main	314 WOODSIDE AVE	Upland Borough
47-00-00757-00	Gravity Main	36 6TH ST	Upland Borough
47-00-00765-01	Gravity Main	208 6TH ST	Upland Borough
49-01-00007-00	Gravity Main	348 15TH ST W	Chester City
49-01-00007-01	Gravity Main	350 15TH ST W	Chester City
49-01-00008-00	Gravity Main	346 15TH ST W	Chester City
49-01-00009-00	Gravity Main	344 15TH ST W	Chester City
49-01-00010-00	Gravity Main	342 15TH ST W	Chester City
49-01-00011-00	Gravity Main	340 15TH ST W	Chester City
49-01-00012-00	Gravity Main	338 15TH ST W	Chester City
49-01-00039-00	Gravity Main	210 15TH ST W	Chester City
49-01-00061-01	Gravity Main	15TH ST E	Chester City
49-01-00098-00	Gravity Main	17TH ST E	Chester City
49-01-00555-00	Gravity Main	21ST ST E	Chester City
49-01-00801-00	Gravity Main	202 22ND ST E	Chester City
49-01-00890-00	Gravity Main	207 22ND ST E	Chester City
49-01-00891-00	Gravity Main	209 22ND ST E	Chester City
49-01-00892-00	Gravity Main	211 22ND ST E	Chester City
49-01-00893-00	Gravity Main	213 22ND ST E	Chester City
49-01-00894-00	Gravity Main	215 22ND ST E	Chester City
49-01-00895-00	Gravity Main	217 22ND ST E	Chester City
49-01-00896-00	Gravity Main	219 22ND ST E	Chester City
49-01-00897-00	Gravity Main	221 22ND ST E	Chester City
49-01-00898-00	Gravity Main	223 22ND ST E	Chester City
49-01-00899-00	Gravity Main	225 22ND ST E	Chester City
49-01-00900-00	Gravity Main	227 22ND ST E	Chester City

49-01-00901-00	Gravity Main	229 22ND ST	E	Chester City
49-01-00902-00	Gravity Main	231 22ND ST	E	Chester City
49-01-00903-00	Gravity Main	233 22ND ST	E	Chester City
49-01-00904-00	Gravity Main	235 22ND ST	E	Chester City
49-01-00905-00	Gravity Main	237 22ND ST	E	Chester City
49-01-00906-00	Gravity Main	239 22ND ST	E	Chester City
49-01-01035-01	Gravity Main	18 22ND ST	W	Chester City
49-01-01222-00	Gravity Main	301 23RD ST	E	Chester City
49-01-01369-00	Gravity Main	500 24TH ST	E	Chester City
49-01-01456-01	Gravity Main	403 24TH ST	E	Chester City
49-01-01489-00	Gravity Main	787 24TH ST	E	Chester City
49-01-01590-00	Gravity Main	712 25TH ST	E	Chester City
49-01-01591-00	Gravity Main	714 25TH ST	E	Chester City
49-01-01592-00	Gravity Main	716 25TH ST	E	Chester City
49-01-01593-00	Gravity Main	718 25TH ST	E	Chester City
49-01-01594-00	Gravity Main	720 25TH ST	E	Chester City
49-01-01595-00	Gravity Main	722 25TH ST	E	Chester City
49-01-01596-00	Gravity Main	724 25TH ST	E	Chester City
49-01-01597-00	Gravity Main	726 25TH ST	E	Chester City
49-01-01598-00	Gravity Main	728 25TH ST	E	Chester City
49-01-01599-00	Gravity Main	730 25TH ST	E	Chester City
49-01-01600-00	Gravity Main	732 25TH ST	E	Chester City
49-01-01601-00	Gravity Main	734 25TH ST	E	Chester City
49-01-01602-00	Gravity Main	736 25TH ST	E	Chester City
49-01-01603-00	Gravity Main	738 25TH ST	E	Chester City
49-01-01604-00	Gravity Main	740 25TH ST	E	Chester City
49-01-01605-00	Gravity Main	742 25TH ST	E	Chester City
49-01-01606-00	Gravity Main	744 25TH ST	E	Chester City
49-01-01607-00	Gravity Main	746 25TH ST	E	Chester City
49-01-01608-00	Gravity Main	748 25TH ST	E	Chester City
49-01-01609-00	Gravity Main	750 25TH ST	E	Chester City
49-01-01662-00	Gravity Main	225 AVON RD	E	Chester City
49-01-01663-00	Gravity Main	227 AVON RD	E	Chester City
49-01-01664-00	Gravity Main	231 AVON RD	E	Chester City
49-01-01665-00	Gravity Main	229 AVON RD	E	Chester City
49-01-01666-00	Gravity Main	233 AVON RD	E	Chester City
49-01-01667-00	Gravity Main	235 AVON RD	E	Chester City
49-01-01681-00	Gravity Main	2701 CHESTNUT ST		Chester City
49-01-01681-01	Gravity Main	PROVIDENCE AVE		Chester City
49-01-01763-00	Gravity Main	2027 2035 EDGMONT AVE		Chester City
49-01-02025-00	Gravity Main	744 IRVINGTON RD		Chester City
49-01-02180-00	Gravity Main	MADISON ST		Chester City
49-01-02222-00	Gravity Main	2402 MADISON ST		Chester City
49-01-02223-00	Gravity Main	2404 MADISON ST		Chester City
49-01-02224-00	Gravity Main	2406 MADISON ST		Chester City
49-01-02225-00	Gravity Main	2410 MADISON ST		Chester City
49-01-02226-00	Gravity Main	2412 MADISON ST		Chester City
49-01-02227-00	Gravity Main	2414 MADISON ST		Chester City
49-01-02228-00	Gravity Main	2416 MADISON ST		Chester City
49-01-02229-00	Gravity Main	2418 MADISON ST		Chester City
49-01-02230-00	Gravity Main	2420 MADISON ST		Chester City
49-01-02231-00	Gravity Main	2422 MADISON ST		Chester City
49-01-02232-00	Gravity Main	2424 MADISON ST		Chester City
49-01-02233-00	Gravity Main	2426 MADISON ST		Chester City
49-01-02234-00	Gravity Main	2428 MADISON ST		Chester City
49-01-02235-00	Gravity Main	2430 MADISON ST		Chester City
49-01-02236-00	Gravity Main	2432 MADISON ST		Chester City
49-01-02251-00	Gravity Main	2708 MADISON ST		Chester City
49-01-02498-00	Gravity Main	228 PARKWAY AVE	E	Chester City
49-01-02499-00	Gravity Main	234 PARKWAY AVE	E	Chester City

49-01-02589-00	Gravity Main	21ST ST E	Chester City
49-01-02701-01	Gravity Main	754 758 25TH ST E	Chester City
49-01-02705-00	Gravity Main	2501 2509 PROVIDENCE AVE	Chester City
49-02-00059-00	Gravity Main	12TH ST E	Chester City
49-02-00060-00	Gravity Main	127 12TH ST E	Chester City
49-02-00061-00	Gravity Main	129 12TH ST E	Chester City
49-02-00062-00	Gravity Main	131 12TH ST E	Chester City
49-02-00079-00	Gravity Main	401 12TH ST E	Chester City
49-02-00080-00	Gravity Main	403 12TH ST E	Chester City
49-02-00081-00	Gravity Main	405 12TH ST E	Chester City
49-02-00082-00	Gravity Main	407 12TH ST E	Chester City
49-02-00083-00	Gravity Main	409 12TH ST E	Chester City
49-02-00084-00	Gravity Main	411 12TH ST E	Chester City
49-02-00085-00	Gravity Main	413 12TH ST E	Chester City
49-02-00086-00	Gravity Main	415 12TH ST E	Chester City
49-02-00087-00	Gravity Main	417 12TH ST E	Chester City
49-02-00088-00	Gravity Main	419 12TH ST E	Chester City
49-02-00089-00	Gravity Main	421 12TH ST E	Chester City
49-02-00090-00	Gravity Main	423 12TH ST E	Chester City
49-02-00091-00	Gravity Main	425 12TH ST E	Chester City
49-02-00092-00	Gravity Main	427 12TH ST E	Chester City
49-02-00093-00	Gravity Main	429 12TH ST E	Chester City
49-02-00094-00	Gravity Main	431 12TH ST E	Chester City
49-02-00095-00	Gravity Main	433 12TH ST E	Chester City
49-02-00096-00	Gravity Main	435 12TH ST E	Chester City
49-02-00097-00	Gravity Main	437 12TH ST E	Chester City
49-02-00098-00	Gravity Main	439 12TH ST E	Chester City
49-02-00781-01	Gravity Main	1200 CROSBY ST	Chester City
49-02-01129-00	Gravity Main	1301 HANCOCK ST	Chester City
49-02-01130-00	Gravity Main	1303 HANCOCK ST	Chester City
49-02-01131-00	Gravity Main	1305 HANCOCK ST	Chester City
49-02-01132-00	Gravity Main	1307 HANCOCK ST	Chester City
49-02-01133-00	Gravity Main	1309 HANCOCK ST	Chester City
49-02-01134-00	Gravity Main	1311 HANCOCK ST	Chester City
49-02-01135-00	Gravity Main	1313 HANCOCK ST	Chester City
49-02-01136-00	Gravity Main	1315 HANCOCK ST	Chester City
49-02-01137-00	Gravity Main	1317 HANCOCK ST	Chester City
49-02-01138-00	Gravity Main	1319 HANCOCK ST	Chester City
49-02-01139-00	Gravity Main	1321 HANCOCK ST	Chester City
49-02-01140-00	Gravity Main	1323 HANCOCK ST	Chester City
49-02-01141-00	Gravity Main	1325 HANCOCK ST	Chester City
49-02-01142-00	Gravity Main	1327 HANCOCK ST	Chester City
49-02-01143-00	Gravity Main	1329 HANCOCK ST	Chester City
49-02-01144-00	Gravity Main	1331 HANCOCK ST	Chester City
49-02-01473-00	Gravity Main	PROVIDENCE AVE	Chester City
49-02-01503-00	Gravity Main	1410 1490 PROVIDENCE AVE	Chester City
49-03-00428-00	Gravity Main	39 41 COMMISSION ST	Chester City
49-03-00497-00	Gravity Main	212 236 EDGMONT AVE	Chester City
49-05-00347-00	Gravity Main	9TH ST E	Chester City
49-05-00478-00	Gravity Main	CALDWELL ST	Chester City
49-06-00386-00	Gravity Main	208 8TH ST W	Chester City
49-06-00411-00	Gravity Main	8TH ST W	Chester City
49-06-00446-00	Gravity Main	203 9TH ST W	Chester City
49-06-00447-00	Gravity Main	205 9TH ST W	Chester City
49-06-00448-00	Gravity Main	205 9TH ST W	Chester City
49-07-00041-00	Gravity Main	FRONT ST W	Chester City
49-07-00041-03	Gravity Main	FRONT ST	Chester City
49-07-00041-15	Gravity Main	FRONT ST W	Chester City
49-07-00312-00	Gravity Main	3RD ST W	Chester City
49-07-00390-00	Gravity Main	801 6TH ST W	Chester City

49-07-00769-00	Gravity Main	10TH ST W	Chester City
49-07-00782-00	Gravity Main	10TH ST W	Chester City
49-07-00829-01	Gravity Main	12TH ST W	Chester City
49-07-00877-00	Gravity Main	499 13TH ST W	Chester City
49-07-00886-00	Gravity Main	14TH ST W	Chester City
49-07-00903-00	Gravity Main	613 14TH ST W	Chester City
49-07-00904-00	Gravity Main	615 14TH ST W	Chester City
49-07-00906-00	Gravity Main	619 14TH ST W	Chester City
49-07-00995-00	Gravity Main	1006 BUTLER ST	Chester City
49-07-01086-00	Gravity Main	1100 CONCORD AVE	Chester City
49-07-01087-00	Gravity Main	1102 CONCORD AVE	Chester City
49-07-01088-00	Gravity Main	1104 CONCORD AVE	Chester City
49-07-01155-00	Gravity Main	812 HUGHES ST	Chester City
49-07-01165-00	Gravity Main	811 HUGHES ST	Chester City
49-07-01275-00	Gravity Main	1251 KERLIN ST	Chester City
49-07-01276-00	Gravity Main	1253 KERLIN ST	Chester City
49-07-01277-00	Gravity Main	1255 KERLIN ST	Chester City
49-07-01278-00	Gravity Main	1257 KERLIN ST	Chester City
49-07-01280-00	Gravity Main	1301 KERLIN ST	Chester City
49-07-01281-00	Gravity Main	1303 KERLIN ST	Chester City
49-07-01282-00	Gravity Main	1305 KERLIN ST	Chester City
49-07-01283-00	Gravity Main	1307 KERLIN ST	Chester City
49-07-01284-00	Gravity Main	1309 KERLIN ST	Chester City
49-07-01286-00	Gravity Main	1313 KERLIN ST	Chester City
49-07-01292-00	Gravity Main	1339 KERLIN ST	Chester City
49-07-01314-00	Gravity Main	1457 KERLIN ST	Chester City
49-07-01315-00	Gravity Main	1457 KERLIN ST	Chester City
49-07-01317-00	Gravity Main	1461 KERLIN ST	Chester City
49-07-01428-00	Gravity Main	901 LINCOLN ST	Chester City
49-07-01429-00	Gravity Main	903 LINCOLN ST	Chester City
49-07-01430-00	Gravity Main	905 LINCOLN ST	Chester City
49-07-01431-00	Gravity Main	907 LINCOLN ST	Chester City
49-07-01433-00	Gravity Main	909 LINCOLN ST	Chester City
49-07-01434-00	Gravity Main	911 LINCOLN ST	Chester City
49-07-01435-00	Gravity Main	913 LINCOLN ST	Chester City
49-07-01436-00	Gravity Main	915 LINCOLN ST	Chester City
49-07-01437-00	Gravity Main	917 LINCOLN ST	Chester City
49-07-01438-00	Gravity Main	919 LINCOLN ST	Chester City
49-07-01439-00	Gravity Main	921 LINCOLN ST	Chester City
49-07-01440-00	Gravity Main	923 LINCOLN ST	Chester City
49-07-01441-00	Gravity Main	925 LINCOLN ST	Chester City
49-07-01443-00	Gravity Main	1001 LINCOLN ST	Chester City
49-07-01444-00	Gravity Main	1003 LINCOLN ST	Chester City
49-07-01445-00	Gravity Main	1005 LINCOLN ST	Chester City
49-07-01446-00	Gravity Main	1007 LINCOLN ST	Chester City
49-07-01447-00	Gravity Main	1009 LINCOLN ST	Chester City
49-07-01448-00	Gravity Main	1011 LINCOLN ST	Chester City
49-07-01449-00	Gravity Main	1013 LINCOLN ST	Chester City
49-07-01469-00	Gravity Main	812 MACDONALD ST	Chester City
49-07-01470-00	Gravity Main	814 MACDONALD ST	Chester City
49-07-01471-00	Gravity Main	816 MACDONALD ST	Chester City
49-07-01472-00	Gravity Main	818 MACDONALD ST	Chester City
49-07-01473-00	Gravity Main	820 MACDONALD ST	Chester City
49-07-01474-00	Gravity Main	822 MACDONALD ST	Chester City
49-07-01475-00	Gravity Main	824 MACDONALD ST	Chester City
49-07-01476-00	Gravity Main	826 MACDONALD ST	Chester City
49-07-01479-00	Gravity Main	811 MACDONALD ST	Chester City
49-07-01481-00	Gravity Main	MACDONALD ST	Chester City
49-07-01482-00	Gravity Main	817 MACDONALD ST	Chester City
49-07-01483-00	Gravity Main	819 MACDONALD ST	Chester City

49-07-01484-00	Gravity Main	821 MACDONALD ST	Chester City
49-07-01485-00	Gravity Main	823 MACDONALD ST	Chester City
49-07-01486-00	Gravity Main	825 MACDONALD ST	Chester City
49-07-01767-00	Gravity Main	1332 PARKER ST	Chester City
49-08-00261-00	Gravity Main	3rd St	Chester City
49-08-00385-01	Gravity Main	1318 7TH ST W	Chester City
49-08-00386-00	Gravity Main	1320 7TH ST W	Chester City
49-08-00388-00	Gravity Main	1324 7TH ST W	Chester City
49-08-00431-00	Gravity Main	PENNELL ST	Chester City
49-08-00649-00	Gravity Main	9TH ST W	Chester City
49-08-00743-00	Gravity Main	1144 CONCORD AVE	Chester City
49-08-00744-00	Gravity Main	1146 CONCORD AVE	Chester City
49-08-00745-00	Gravity Main	1148 CONCORD AVE	Chester City
49-08-00746-00	Gravity Main	1150 CONCORD AVE	Chester City
49-08-00751-00	Gravity Main	DELAWARE AVE	Chester City
49-08-00753-00	Gravity Main	DELAWARE AVE	Chester City
49-08-00778-00	Gravity Main	FRONT ST W	Chester City
49-08-01000-05	Gravity Main	606 LLOYD ST	Chester City
49-08-01000-09	Gravity Main	538 DORIAN ST	Chester City
49-08-01000-27	Gravity Main	1112 DORIAN CT	Chester City
49-08-01000-28	Gravity Main	1114 DORIAN CT	Chester City
49-08-01000-29	Gravity Main	1116 DORIAN CT	Chester City
49-08-01000-30	Gravity Main	1118 DORIAN CT	Chester City
49-08-01000-31	Gravity Main	1120 DORIAN CT	Chester City
49-08-01000-32	Gravity Main	1122 DORIAN CT	Chester City
49-08-01000-33	Gravity Main	1101 DORIAN CT	Chester City
49-08-01000-34	Gravity Main	1103 DORIAN CT	Chester City
49-08-01000-35	Gravity Main	1105 DORIAN CT	Chester City
49-08-01000-36	Gravity Main	1107 DORIAN CT	Chester City
49-08-01000-37	Gravity Main	1109 DORIAN CT	Chester City
49-08-01000-38	Gravity Main	1111 DORIAN CT	Chester City
49-08-01000-39	Gravity Main	1113 DORIAN CT	Chester City
49-08-01000-44	Gravity Main	1123 DORIAN CT	Chester City
49-08-01084-00	Gravity Main	619 NORRIS ST	Chester City
49-08-01088-00	Gravity Main	NORRIS ST	Chester City
49-08-01107-00	Gravity Main	332 NORRIS ST	Chester City
49-08-01112-00	Gravity Main	600 NORRIS ST	Chester City
49-08-01349-00	Gravity Main	325 331 TILGHMAN ST	Chester City
49-09-00258-00	Gravity Main	1332 7TH ST W	Chester City
49-09-00299-01	Gravity Main	EDWARDS ST	Chester City
49-09-00332-00	Gravity Main	TILGHMAN ST	Chester City
49-09-00497-00	Gravity Main	1115 ABBOTT ST	Chester City
49-09-00498-00	Gravity Main	1117 ABBOTT ST	Chester City
49-09-00499-00	Gravity Main	1119 ABBOTT ST	Chester City
49-09-00587-00	Gravity Main	7TH ST W	Chester City
49-09-00587-01	Gravity Main	1601 7TH ST W	Chester City
49-09-00666-00	Gravity Main	102 CENTRAL AVE	Chester City
49-09-00667-00	Gravity Main	112 CENTRAL AVE	Chester City
49-09-00668-00	Gravity Main	114 CENTRAL AVE	Chester City
49-09-00669-00	Gravity Main	116 CENTRAL AVE	Chester City
49-09-00670-00	Gravity Main	118 CENTRAL AVE	Chester City
49-09-00671-00	Gravity Main	118 1/2 CENTRAL AVE	Chester City
49-09-00672-00	Gravity Main	120 122 CENTRAL AVE	Chester City
49-09-00696-02	Gravity Main	LAMOKIN ST	Chester City
49-09-00911-00	Gravity Main	1120 1122 EDWARDS ST	Chester City
49-09-00912-00	Gravity Main	1124 EDWARDS ST	Chester City
49-09-00913-00	Gravity Main	1126 EDWARDS ST	Chester City
49-09-00914-00	Gravity Main	1128 EDWARDS ST	Chester City
49-09-01179-05	Gravity Main	810 TILGHMAN ST	Chester City
49-10-00032-00	Gravity Main	2301 FRONT ST W	Chester City

49-10-00334-00	Gravity Main	2300 4TH ST W	Chester City
49-10-00429-00	Gravity Main	6TH ST W	Chester City
49-10-00460-00	Gravity Main	1900 9TH ST W	Chester City
49-10-00469-00	Gravity Main	2100 9TH ST W	Chester City
49-10-00530-00	Gravity Main	2201 9TH ST W	Chester City
49-10-00532-00	Gravity Main	2211 2217 9TH ST W	Chester City
49-10-00533-00	Gravity Main	2221 2223 9TH ST W	Chester City
49-10-00534-00	Gravity Main	2229 9TH ST W	Chester City
49-10-00535-00	Gravity Main	2239 9TH ST W	Chester City
49-10-00675-00	Gravity Main	102 ENGLE ST	Chester City
49-10-00942-00	Gravity Main	101 TOWNSEND ST	Chester City
49-10-01082-00	Gravity Main	438 YARNALL ST	Chester City
49-10-01083-00	Gravity Main	440 YARNALL ST	Chester City
49-10-01084-00	Gravity Main	442 YARNALL ST	Chester City
49-10-01085-00	Gravity Main	444 YARNALL ST	Chester City
49-10-01086-00	Gravity Main	446 YARNALL ST	Chester City
49-10-01087-00	Gravity Main	448 YARNALL ST	Chester City
49-10-01088-00	Gravity Main	450 YARNALL ST	Chester City
49-10-01089-00	Gravity Main	452 YARNALL ST	Chester City
49-10-01090-00	Gravity Main	454 YARNALL ST	Chester City
49-10-01091-00	Gravity Main	YARNALL ST	Chester City
49-10-01092-00	Gravity Main	458 YARNALL ST	Chester City
49-10-01093-00	Gravity Main	460 YARNALL ST	Chester City
49-10-01094-00	Gravity Main	462 YARNALL ST	Chester City
49-10-01095-00	Gravity Main	464 YARNALL ST	Chester City
49-11-00433-00	Gravity Main	4TH ST W	Chester City
49-11-00676-00	Gravity Main	3041 6TH ST W	Chester City
49-11-00810-00	Gravity Main	2500 9TH ST W	Chester City
49-11-00849-00	Gravity Main	9TH ST W	Chester City
49-11-01000-00	Gravity Main	3409 3415 10TH ST W	Chester City
49-11-01001-00	Gravity Main	3417 3423 10TH ST W	Chester City
49-11-01002-00	Gravity Main	3425 3431 10TH ST W	Chester City
49-11-01054-00	Gravity Main	KEYSTONE RD	Chester City
49-11-01057-00	Gravity Main	CLOVER LN	Chester City
49-11-01059-00	Gravity Main	3150 13TH ST W	Chester City
49-11-01125-00	Gravity Main	900 920 BOOTH ST	Chester City
49-11-01164-00	Gravity Main	3301 CARTER LN	Chester City
49-11-01165-00	Gravity Main	3303 CARTER LN	Chester City
49-11-01166-00	Gravity Main	3305 CARTER LN	Chester City
49-11-01167-00	Gravity Main	3307 CARTER LN	Chester City
49-11-01168-00	Gravity Main	3309 CARTER LN	Chester City
49-11-01169-00	Gravity Main	3311 CARTER LN	Chester City
49-11-01170-00	Gravity Main	3313 CARTER LN	Chester City
49-11-01171-00	Gravity Main	3315 CARTER LN	Chester City
49-11-01171-01	Gravity Main	3317 CARTER LN	Chester City
49-11-01171-02	Gravity Main	3319 CARTER LN	Chester City
49-11-01171-03	Gravity Main	3321 CARTER LN	Chester City
49-11-01171-04	Gravity Main	3323 CARTER LN	Chester City
49-11-01171-05	Gravity Main	3325 CARTER LN	Chester City
49-11-01171-06	Gravity Main	3327 CARTER LN	Chester City
49-11-01171-07	Gravity Main	3329 CARTER LN	Chester City
49-11-01171-08	Gravity Main	3331 CARTER LN	Chester City
49-11-01171-25	Gravity Main	3336 CARTER LN	Chester City
49-11-01171-26	Gravity Main	3338 CARTER LN	Chester City
49-11-01171-27	Gravity Main	3340 CARTER LN	Chester City
49-11-01171-28	Gravity Main	3342 CARTER LN	Chester City
49-11-01171-29	Gravity Main	3344 CARTER LN	Chester City
49-11-01171-30	Gravity Main	3346 CARTER LN	Chester City
49-11-01171-31	Gravity Main	3348 CARTER LN	Chester City
49-11-01171-32	Gravity Main	3350 CARTER LN	Chester City

49-11-01171-33	Gravity Main	3352 CARTER LN	Chester City
49-11-01171-34	Gravity Main	3354 CARTER LN	Chester City
49-11-01171-35	Gravity Main	3356 CARTER LN	Chester City
49-11-01171-36	Gravity Main	3358 CARTER LN	Chester City
49-11-01171-37	Gravity Main	3360 CARTER LN	Chester City
49-11-01171-38	Gravity Main	3362 CARTER LN	Chester City
49-11-01171-39	Gravity Main	3364 CARTER LN	Chester City
49-11-01171-40	Gravity Main	3366 CARTER LN	Chester City
49-11-01171-41	Gravity Main	3368 CARTER LN	Chester City
49-11-01171-42	Gravity Main	3370 CARTER LN	Chester City
49-11-01171-43	Gravity Main	3372 CARTER LN	Chester City
49-11-01171-44	Gravity Main	3374 CARTER LN	Chester City
49-11-01171-45	Gravity Main	3401 CARTER LN	Chester City
49-11-01171-46	Gravity Main	3403 CARTER LN	Chester City
49-11-01171-47	Gravity Main	3405 CARTER LN	Chester City
49-11-01171-55	Gravity Main	3400 CARTER LN	Chester City
49-11-01171-56	Gravity Main	3402 CARTER LN	Chester City
49-11-01171-57	Gravity Main	3404 CARTER LN	Chester City
49-11-01171-58	Gravity Main	3406 CARTER LN	Chester City
49-11-01171-59	Gravity Main	3408 CARTER LN	Chester City
49-11-01171-60	Gravity Main	3410 CARTER LN	Chester City
49-11-01171-61	Gravity Main	3412 CARTER LN	Chester City
49-11-01171-62	Gravity Main	3414 CARTER LN	Chester City
49-11-01171-63	Gravity Main	3416 CARTER LN	Chester City
49-11-01313-05	Gravity Main	DELAWARE AVE	Chester City
49-11-01402-00	Gravity Main	HAYES ST	Chester City
49-11-01454-00	Gravity Main	SEAPORT DR	Chester City
49-11-01454-01	Gravity Main	FRONT ST	Chester City
49-11-01504-02	Gravity Main	HIGHLAND AVE	Chester City
49-11-01661-00	Gravity Main	HIGHLAND AVE	Chester City
49-11-01711-02	Gravity Main	3310 TOWNSHIP LINE RD	Chester City
49-11-01772-00	Gravity Main	907 913 MEADOW LN	Chester City
49-11-01776-00	Gravity Main	1003 1009 MEADOW LN	Chester City
49-11-01807-00	Gravity Main	MEADOW LN	Chester City
49-11-01808-00	Gravity Main	912 918 MEADOW LN	Chester City
49-11-01809-00	Gravity Main	1000 MEADOW LN	Chester City
49-11-01835-00	Gravity Main	1158 MEADOW LN	Chester City
49-11-01837-00	Gravity Main	12TH ST W	Chester City
49-11-01855-00	Gravity Main	939 941 PINE LN	Chester City
49-11-01947-00	Gravity Main	1300 1330 RENSHAW RD	Chester City
49-11-01994-00	Gravity Main	3301 TOWNSHIP LINE RD	Chester City
49-11-02123-01	Gravity Main	WARD ST	Chester City
49-11-02123-90	Gravity Main	1120 WARD ST	Chester City
49-11-02137-01	Gravity Main	WARD ST	Chester City
49-11-02350-00	Gravity Main	2753 BETHEL RD	Chester City
49-11-02353-01	Gravity Main	PERKINS ST	Chester City
49-11-02499-00	Gravity Main	2737 FORWOOD ST	Chester City
49-11-02500-00	Gravity Main	2739 FORWOOD ST	Chester City
49-11-02501-00	Gravity Main	2741 FORWOOD ST	Chester City
49-11-02502-00	Gravity Main	2743 FORWOOD ST	Chester City
49-11-02503-00	Gravity Main	2745 FORWOOD ST	Chester City
49-11-02843-00	Gravity Main	2503 PEOPLES ST	Chester City

VERIFICATION

I, William C. Packer, Vice President - Controller of Aqua Pennsylvania, Inc., hereby state that the facts set forth in the letters of Counsel of Aqua Pennsylvania Wastewater, Inc., dated May 7, 2020 and May 8, 2020, addressing information requests of the Bureau of Technical Utility Services in the matter at PaPUC Docket No. A-2019-3015173, are true and correct to the best of my knowledge, information and belief and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa. C.S. § 4904 (relating to unsworn falsification to authorities).

William C. Packer
Vice President – Controller
Aqua Pennsylvania, Inc.

Dated: May 8, 2020

CERTIFICATE OF SERVICE

I hereby certify that I have this 8th day of May, 2020, served a true and correct copy of the foregoing Letter and Additional Information, including Confidential Information, upon the persons and in the manner set forth below:

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