pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0260967**
Facility Type	**Non-Municipal**	APS ID	**986513**
Major / Minor	**Minor**	Authorization ID	**1458408**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Silver Spring Country Estates**	Facility Name	**Silver Spring Country Estates**
Applicant Address	508 Elm Street	Facility Address	82 Linda Drive
	Fredrick, MD 21701		Mechanicsburg, PA 17050
Applicant Contact	Dan D'Agostino	Facility Contact	Dan D'Agostino
Applicant Phone	(717) 516-1643	Facility Phone	(717) 516-1643
Client ID	347833	Site ID	1070
Ch 94 Load Status	Not Overloaded	Municipality	Silver Spring Township
Connection Status	No Limitations	County	Cumberland
Date Application Received	October 15, 2023	EPA Waived?	Yes
Date Application Accepted	November 2, 2023	If No, Reason	
Purpose of Application	NPDES Renewal.		

Summary of Review

Silver Spring Country Estates has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its NPDES permit. The permit was last reissued on May 20, 2019 and became effective on June 1, 2019. The permit was amended on August 1, 2022 to replace chlorination to UV disinfection. The permit expired on May 31, 2024.

Based on the review, it is recommended that the permit be drafted.

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Approve	Deny	Signatures	Date
X		*Jinsu Kim* Jinsu Kim / Environmental Engineering Specialist	June 13, 2024
X		Maria D. Bebenek for Daniel W. Martin, P.E. / Environmental Engineer Manager	June 20, 2024
X		Maria D. Bebenek Maria D. Bebenek, P.E. / Program Manager	June 20, 2024

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.013
Latitude	40º 16' 28"	Longitude	-77º 3' 34"
Quad Name	Wertzville	Quad Code	1629
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Conodoguinet Creek (WWF, MF)	Stream Code	10236
NHD Com ID	56403869	RMI	1.29
Drainage Area	0.04 sq.mi.	Yield (cfs/mi^2)	0.147
Q_{7-10} Flow (cfs)	0.00588	Q_{7-10} Basis	USGS Gage no. 01570000
Elevation (ft)	444	Slope (ft/ft)	
Watershed No.	7-B	Chapter 93 Class.	WWF, MF
Existing Use	N/A	Existing Use Qualifier	N/A
Exceptions to Use	N/A	Exceptions to Criteria	N/A
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	N/A		
Source(s) of Impairment	N/A		
TMDL Status	N/A	Name	N/A
Nearest Downstream Public Water Supply Intake	PA American Waters		
PWS Waters	Conodoguinet Creek	Flow at Intake (cfs)	
PWS RMI	19.14	Distance from Outfall (mi)	4.6

Drainage Area

The discharge is to Unnamed Tributary 10236 to Conodoguinet Creek at RMI 1.29. A drainage area upstream of the discharge is estimated to be 0.04 sq.mi, according to USGS PA StreamStats available at https://streamstats.usgs.gov/ss/. A point of first use was conducted by DEP Water Pollutant Biologist in 2002 indicated that the POFU was determined to be at the point of discharge. The 2002 report is attached to this fact sheet.

Streamflow

Since USGS PA StreamStats estimated the drainage area that is below the minimum value allowed by USGS's regression equations, the USGS gage station no. 01570000 on Conodoguinet Creek near Hogestown will be used to calculate the Q7-10 at the point of discharge using a low flow yield method.

$$\text{Low Flow Yield} = Q7\text{-}10_{gage} / \text{Drainage Area}_{gage} = 69.3 \text{ cfs} / 470 \text{ sq.mi.} = 0.147 \text{ cfs/sq.mi.}$$
$$Q7\text{-}10_{site} = 0.147 \text{ cfs/sq.mi.} * \text{Drainage Area}_{site} = 0.147 \text{ cfs/sq.mi.} * 0.04 \text{ sq.mi.} = 0.00588 \text{ cfs}$$

Yellow Breeches Creek

25 Pa Code §93.9o designated all unnamed tributaries of Conodoguinet Creek from PA 997 at Roxbury to Mouth of the stream as warm water fishery surface waters. No special protection water is therefore impacted by the discharge. The latest integrated water quality report prepared in 2024 showed that the discharge is located in a stream segment listed as attaining uses.

Potable Water Supply Intake

The nearest downstream public water supply intake is PA American Water located on the Conodoguinet Creek in Silver Spring Township, approximately 4.6 miles from the point of discharge. Given the nature and dilution, the discharge is not expected to significantly impact the water supply.

Treatment Facility Summary

Treatment Facility Name: Hodges MHP

WQM Permit No.	Issuance Date
2110401	08/15/2011
2110401 A-1	08/01/2022

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary With Phosphorus Removal	Extended Aeration	UV Disinfection	0.013

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.013	21.7	Not Overloaded	Sludge Holding	Other WWTP

The existing wastewater treatment system serves sanitary wastewater generated from Hodges Mobile Home Park (MHP). With having both annual average design flow and hydraulic capacity of 0.013 MGD, the system utilizes an extended aeration treatment process. The treatment process, according to the application, is as follows:

Screening → Equalization Tank → Aeration Tanks (2) → Clarifier → UV Disinfection → Post Aeration with dechlorination → Outfall 001 to Unnamed Tributary to Conodoguinet Creek

Aluminum Sulfate (Alum) is used for phosphorous removal, and soda ash is used for pH control.

Compliance History

Summary of DMRs:	A summary of 12-month DMR data is presented on the next page.
Summary of Inspections:	06/16/2023: DEP conducted a routine inspection. No significant issues were found at the time of inspection. The plant operator indicted that the construction to install a new UV disinfection system will begin in 1 month.
Other Comments:	DEP's database shows the facility had a number of permit violations mostly associated with late DMR Submission (see below)

Date	Description	Parameter	Results	Limits	Units	SBC
7/29/2019	Late DMR Submission					
12/29/2020	Late DMR Submission					
7/28/2021	Violation of permit condition	Total Phosphorus	3.275	2	mg/L	Average Monthly
12/31/2022	Late DMR Submission					
5/30/2023	Late DMR Submission					
5/30/2023	Violation of permit condition	Dissolved Oxygen	4.6	5	mg/L	Instantaneous Minimum
6/28/2023	Violation of permit condition	Fecal Coliform	399.2	200	No./100 ml	Geometric Mean
10/29/2023	Late DMR Submission					
10/29/2023	Late DMR Submission					
11/29/2023	Late DMR Submission					

The database also shows that there are three (3) pending violations associated with this permittee or facility in which all of them were identified by Safe Drinking Water Program in 2022. A draft permit cover letter will indicate that the permit may not be issued until all violations are resolved.

Effluent Data

DMR Data for Outfall 001 (from May 1, 2023 to April 30, 2024)

Parameter	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23
Flow (MGD) Average Monthly	0.0056777	0.0037889	0.004923	0.005963	0.004138	0.005087	0.004168	0.004801	0.00297	0.004109	0.003657	0.003963
Flow (MGD) Daily Maximum	0.022054	0.009314	0.012747	0.029475	0.012785	0.016282	0.006209	0.01969	0.003837	0.010371	0.00712	0.017053
pH (S.U.) Instantaneous Minimum	7.29	7.31	7.3	7.33	7.31	7.52	7.35	7.44	7.07	7.39	7.49	7.37
pH (S.U.) Instantaneous Maximum	7.49	7.45	7.56	7.44	7.59	7.66	7.6	7.64	7.87	7.57	7.61	7.62
DO (mg/L) Instantaneous Minimum	7.9	7.9	7.0	7.0	6.3	6.9	5.7	5.3	5.2	6.6	6.2	5.6
TRC (mg/L) Average Monthly	0.01	0.01	0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
TRC (mg/L) Instantaneous Maximum	0.01	0.01	0.1	0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
CBOD5 (mg/L) Average Monthly	< 3.0	< 2.0	< 2.0	< 5.0	2.0	< 4.0	< 2.0	< 4.0	< 2.0	< 4.0	< 5.0	< 2.0
TSS (mg/L) Average Monthly	< 5.0	< 5.0	< 5.0	< 9.0	6.0	< 5.0	9.0	< 5.0	11.0	< 8.0	< 5.0	< 10.0
Fecal Coliform (No./100 ml) Geometric Mean	< 206.0	< 1.0	< 1.0	< 1210.0	< 1	< 1.0	< 1.0	< 4.0	< 1.0	7.0	< 1.0	399.2
Fecal Coliform (No./100 ml) Instantaneous Maximum	411.0	< 1.0	< 1.0	2419.8	1	< 1.0	1.0	6.0	< 1.0	11.0	1.0	613.0
Nitrate-Nitrite (lbs/day) Daily Maximum		0.1			0.6			0.6			< 0.06	
Nitrate-Nitrite (mg/L) Daily Maximum		19.5			24.4			27.1			< 0.1	
Total Nitrogen (lbs/day) Daily Maximum		E			0.6			< 0.6			< 0.7	
Total Nitrogen (mg/L) Daily Maximum		E			25.4			< 28.10			< 1.1	

Parameter	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23
Ammonia (mg/L) Average Monthly	< 0.1	0.2	< 0.2	0.7	1.0	< 0.1	< 0.6	< 0.1	< 0.1	0.4	< 0.2	< 0.1
TKN (lbs/day) Daily Maximum		E			0.03			< 0.1			< 0.6	
TKN (mg/L) Daily Maximum		E			1.0			< 1.0			< 1.0	
Total Phosphorus (mg/L) Average Monthly	< 0.1	0.2	< 0.1	0.3	0.1	< 0.2	0.2	0.2	0.1	0.2	< 0.2	0.1

Existing Effluent Limits and Monitoring Requirements

A table below summarizes effluent limits and monitoring requirements specified in the current permit:

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.03	XXX	0.10	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	XXX	XXX	XXX	25.0	XXX	50	2/month	24-Hr Composite
Total Suspended Solids	XXX	XXX	XXX	30.0	XXX	60	2/month	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Nitrate-Nitrite as N	XXX	Report Daily Max	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Total Nitrogen	XXX	Report Daily Max	XXX	XXX	Report Daily Max	XXX	1/quarter	Calculation
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	4.5	XXX	9	2/month	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	1.5	XXX	3	2/month	24-Hr Composite
Total Kjeldahl Nitrogen	XXX	Report Daily Max	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	2.0	XXX	4	2/month	24-Hr Composite

Development of Effluent Limitations and Monitoring Requirements

Outfall No. 001 **Design Flow (MGD)** .013
Latitude 40º 16' 28.00" **Longitude** -77º 3' 34.00"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)

Water Quality-Based Limitations

CBOD5, NH3-N and Dissolved Oxygen (DO)
WQM 7.0 version 1.0b is a water quality model designed to assist DEP to determine appropriate permit requirements for CBOD5, NH3-N and DO. DEP's technical guidance no. 391-2000-007 describes the technical methods contained in the model for conducting wasteload allocation analyses and for determining recommended limits for point source discharges. Due to the very low-flow conditions expected in the receiving stream, the entire watershed of this receiving stream has been evaluated. The model output indicated that all existing effluent limits are still protective of water quality. No change is therefore recommended.

Toxics
This is a minor sewage facility receiving domestic wastewater only and the current application does not require sampling of toxic pollutants (or heavy metals) for those facilities with design flows less than 0.1 MGD. Therefore, no reasonable potential analysis for toxic pollutants has been performed for this permit renewal.

Best Professional Judgment (BPJ) Limitations

Dissolved Oxygen
A minimum of 5.0 mg/L for DO is an existing effluent limit and is a water quality criterion for warm water fishery waters taken directly from 25 Pa. Code § 93.7(a). The effluent limit will remain unchanged in the draft permit to ensure that the discharge does not violate the water quality standards. This approach is consistent with DEP's SOP and the similar requirement has also been assigned to other sewage facilities throughout the state.

Total Phosphorus (TP)
The discharge from this facility is currently required to meet effluent limits of 2.0 mg/L (average monthly) and 4.0 mg/L (IMAX). It appears this requirement was included in the permit based on the survey conducted in 1987 showing a phosphorus impact in the lower Conodoguinet Creek. Therefore, similar to this facility, effluent limits have been consistently assigned to all point sources within the Conodoguinet Creek basin who have the potential to discharge quantifiable levels of phosphorus into the stream. This approach is consistent with DEP's SOP no. BPNPSM-PMT-033 as well as the state regulation found in 25 Pa Code §96.5(c) which states the following: *When it is determined that the discharge of phosphorus, alone or in combination with the discharge of other pollutants, contributes or threatens to impair existing or designated uses*

in a free-flowing surface water, phosphorus discharges from point source discharges shall be limited to an average monthly concentration of 2 mg/l. More stringent controls on point source discharges may be imposed, or may be otherwise adjusted as a result of a TMDL which has been developed. Consequently, existing effluent limits will remain unchanged in the draft permit in accordance with 40 CFR §122.44(l)(1).

Additional Considerations

Flow Monitoring
The requirement to monitor the volume of effluent will remain in the draft permit per 40 CFR § 122.44(i)(1)(ii).

E. Coli Monitoring Requirement
DEP's SOP no. BPNPSM-PMT-033 recommends an annual routine monitoring of E. Coli for all sewage facilities that have design flow less than 0.05 MGD but greater than 0.002 MGD. An annual monitoring for E. Coli will therefore be included in the permit.

UV Monitoring Requirement
The pending renewal application indicates that the facility is now equipped with UV disinfection. Therefore, a routine monitoring of UV output is recommended. This requirement was placed in the permit amendment issued in 2022 and is consistent with DEP's SOP no. BPNPSM-PMT-033. The permit amendment required a monthly monitoring of UV transmittance. However, the upcoming permit renewal will require a daily monitoring to be in line with a daily monitoring for TRC.

Chesapeake Bay TMDL
DEP's Phase III Watershed Implementation Plan (WIP) categorizes this facility as a phase 5 non-significant sewage facility that has a design flow less than 0.2 MGD but greater than 0.002 MGD. The WIP recommends monitoring and reporting for Total Nitrogen and Total Phosphorus throughout the permit term at a frequency no less than annually. The requirement to monitor for these parameters is also recommended by DEP's SOP no. BPNPSM-PMT-033. The facility has therefore been monitoring for nutrients and will continue to monitor nutrients for the upcoming permit renewal. No change is therefore recommended.

Monitoring Frequency and Sample Type
Unless otherwise specified throughout this fact sheet, existing monitoring frequencies and sample types will remain unchanged in the permit.

Anti-Degradation Requirements
All effluent limitations and monitoring requirements have been developed to ensure that existing instream water uses and the level of water quality necessary to protect the existing uses are maintained and protected.

Anti-Backsliding Requirements
Unless stated otherwise in this fact sheet, all permit requirements proposed in this fact sheet are at least as stringent as existing permit requirements in accordance with 40 CFR §122.44(l)(1).

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Daily Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
CBOD5	XXX	XXX	XXX	25.0	XXX	50	2/month	24-Hr Composite
TSS	XXX	XXX	XXX	30.0	XXX	60	2/month	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
UV Transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Nitrate-Nitrite	XXX	Report Daily Max	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Total Nitrogen	XXX	Report Daily Max	XXX	XXX	Report Daily Max	XXX	1/quarter	Calculation
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	4.5	XXX	9	2/month	24-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	1.5	XXX	3	2/month	24-Hr Composite
TKN	XXX	Report Daily Max	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	2.0	XXX	4	2/month	24-Hr Composite
E. Coli (no. / 100 mL)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab

Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☐	Toxics Management Spreadsheet (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 386-2000-010, 3/1999.
☐	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP:
☐	Other:

Attachments

StreamStats Report

Region ID: PA
Workspace ID: PA20240613232822812000
Clicked Point (Latitude, Longitude): 40.27458, -77.05905
Time: 2024-06-13 19:28:42 -0400

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	0	percent
DRNAREA	Area that drains to a point on a stream	0.0471	square miles
PRECIP	Mean Annual Precipitation	39	inches
ROCKDEP	Depth to rock	3	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	0	miles per square mile

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.0471	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	39	inches	35	50.4
STRDEN	Stream Density	0	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	3	feet	3.32	5.65
CARBON	Percent Carbonate	0	percent	0	99

Low-Flow Statistics Flow Report [Low Flow Region 2]

Statistic	Value	Unit

Low-Flow Statistics Citations

Application Version: 4.20.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

ENVIRONMENTAL PROTECTION
November 26, 2002

Stream code 10236
Stream file 2.21.0

SUBJECT: Cekovich Mobile Home Park
Silver Spring Township
Cumberland County

TO: Tim Finnegan
Water Quality Specialist Supervisor
Water Management Program
Southcentral Region

FROM: Robert J. Schott RJS
Water Pollution Biologist
Water Management Program
Southcentral Region

On June 26, 2002 I conducted a Point of First Use survey on an unnamed tributary (UNT) to the Conodoguinet Creek. The owner of the Cecovich Mobile Home Park (MHP) would like to construct a sewage treatment facility due to a problem with failing septic systems. The plant would discharge to the UNT.

Due to drought conditions in 2001 and 2002 the UNT was not flowing at the MHP in June. Flowing water and a viable benthic community was observed approximately 1000 ft downstream from the MHP and approximately 450 ft. upstream from Pleasant Grove Road.

Due to more normal rainfall over the past few months I went to the MHP on November 25, 2002. Evidently, the UNT splits into two branches upstream from where I conducted my survey in June. There were two branches at the MHP and both were flowing. A sampling of the benthic macroinvertebrate community revealed the presence of aquatic worms (Oligochaeta) and red midge larvae (*Chironomus*), both of which are tolerant of organic pollution. The substrate had a coating of filamentous bacteria (*Sphaerotilus*) that was growing in response to raw sewage getting into the stream.

Based upon this latest investigation the Point of First Use should be changed to the proposed point of discharge. Due to the existing discharge of raw sewage into the stream the construction of a sewage treatment system is needed to eliminate the presence of a human health problem.

cc: Ruth Plant
Marty Ferry

ENVIRONMENTAL PROTECTION
September 4, 2002

SUBJECT: Cekovich Mobile Home Park
Silver Spring Township
Cumberland County

TO: Tim Finnegan
Water Quality Specialist Supervisor
Water Management Program
Southcentral Region

FROM: Robert J. Schott RJS
Water Pollution Biologist
Water Management Program
Southcentral Region

On September 3, 2002 I met with representatives from Silver Spring Township at the site where I did a Point of First Use (POFU) survey for the Cecovich Mobile Home Park (MHP) on June 26, 2002. The following were there: Kelly Kelch, Assistant Township Manager, Mark Bruening, Township Engineer, Gary Morrow, Sewage Enforcement Officer, and Don Hodges, owner of the mobile home park. Bill Cooke, Township Manager, had asked me to meet with them to discuss the survey that I conducted back in June.

Basically, they wanted to know how I decided on the POFU and how it related to perennial flow. I explained to them that the POFU does not always equate with perennial flow and that my job was to determine where to set effluent limits to protect aquatic life. As you remember, the township rescinded their initial approval for the discharge to a dry swale near the MHP due to a complaint from a former township supervisor who lives near the site. The township is now requiring Mr. Hodges, the owner, to pipe the discharge to a location where the stream is perennial. I told them that due to the severe drought that has been occurring for the past two years it's very hard to determine where the stream is normally perennial. The place where I determined the POFU to be at is now under contention since it's close to the home of the former township supervisor. I also said that based on my findings back in June I would have no doubts that normal perennial conditions are probably much further upstream than where I determined the POFU to be due to the fact that we have been experiencing drought conditions for at least two years. Gary Morrow, the township SEO, claimed that the stream typically flows for most of the year up near the MHP during years of normal rainfall.

Mr. Hodges has been trying to resolve the problems with the malfunctioning septic system for a number of years and is presently having the tanks pumped on a weekly basis which is costly. He is very frustrated with the township and I do not blame him. First they give him approval to discharge to the dry swale then they change their minds and require him to pipe it to the point where the stream is perennial. I did my survey to find the POFU and now the township does not like my determination since the former supervisor lives near the location.

cc: Ruth Plant
Marty Ferry

Pennsylvania Department of Environmental Protection

909 Elmerton Avenue
Harrisburg, PA 17110-8200

July 31, 2002

Southcentral Regional Office

717-705-4707
FAX - 717-705-4760

Mr. Chris A. Hoover
Hoover Engineering Services, Inc.
658 Gaumer Road, Suite 100
New Cumberland, PA 17070-2823

Re: **Revised Copy**
Cekovich Mobile Home Park
Silver Spring Township, Cumberland County

Dear Mr. Hoover:

This letter serves as a follow-up to your May 29, 2002 letter to the Department requesting that our biologist investigate and determine the point at which the receiving stream near the Cekovich Mobile Home Park becomes perennial. On June 26, 2002, a Point of First Use survey was conducted on an unnamed tributary (UNT) to Conodoguinet Creek in Silver Spring Township, Cumberland County.

The purpose of a Point of First Use survey is to determine the point where the creek supports aquatic life in order to set effluent limits. In some instances, the Point of First Use can occur some distance upstream from where there is flowing water since many macroinvertebrates are capable of escaping deep into the streambed and surviving. Unfortunately, due to drought condition and low flows, the actual Point of First Use for this stream may be under estimated (i.e., it may be further upstream). The best time of the year to conduct such a survey is from November to April when flows are typically higher although this can vary due to drought conditions.

Based on the conditions presented to Mr. Robert Schott, Biologist, during this investigation, the Point of First Use should be established at a point approximately 150 yards upstream from Pleasant Grove Road.

If you have any questions, please call me at 717-705-4793.

Sincerely,

Ruth M. Plant
Sewage Planning Specialist
Water Management Program

cc: James Hall, Zoning Officer, Silver Spring Township
Silver Spring Township Supervisors
L. Don Hodges

bcc: Marty Ferry✓
File
T

ENVIRONMENTAL PROTECTION
July 23, 2002

Stream Code 10236
Stream File 2.21.0

SUBJECT: Point of First Use Survey
Cekovich Mobile Home Park
Cumberland County

TO: Tim Finnegan
Water Quality Specialist Supervisor
Water Management Program
Southcentral Region

FROM: Robert J. Schott RJS
Water Pollution Biologist
Water Management Program
Southcentral Region

On June 26, 2002 I conducted a Point of First Use survey on an unnamed tributary to Conodoguinet Creek, Silver Spring Township, Cumberland County. The survey had to do with the proposed discharge from the Cekovich Mobile Home Park.

In that report I concluded that the Point of First Use was approximately 450 ft. upstream from Green Ridge Drive. Actually I misidentified the road from which I entered the stream. I entered the stream from Pleasant Grove Road. Therefore, the Point of First Use is 450 ft. upstream from Pleasant Grove Road. A copy of the corrected report is attached.

cc: Ruth Plant
Marty Ferry

ENVIRONMENTAL PROTECTION
June 27, 2002

Stream code 10236
Stream file 2.21.0

SUBJECT: Point of First Use Survey
Unnamed tributary to Conodoguinet Creek
Cekovich Mobile Home Park
Cumberland County
June 26, 2002

TO: Tim Finnegan
Water Quality Specialist Supervisor
Water Management Program
Southcentral Regional Office

FROM: Robert J Schott RJS
Water Pollution Biologist
Water Management Program
Southcentral Regional Office

On June 26, 2002 a Point of First Use survey was conducted on an unnamed tributary (UNT) to Conodoguinet Creek, Silver Spring Township, Cumberland County. The Department had received a Sewage Facilities Planning Module for a proposed discharge from the Cekovich Mobile Home Park with a discharge to the UNT. Hoover Engineering Services, Inc. included a map with the module indicating the point where they felt the stream became perennial.

I entered the UNT at Pleasant Grove Road and walked upstream to the area where there was no longer any flowing water. I paced the distance off at approximately 450 ft. The point shown on the map provided by Hoover Engineering placed it approximately 2000 ft upstream from Pleasant Grove Road. It is quite possible that there was flow in the stream further upstream when they conducted their investigation. At the point where I found no flow there was still a well-defined channel upstream and the substrate was damp indicating that it had not been dry for a long period. Nonetheless, I had to limit my biological sampling where there was flowing water. The results of the sampling revealed a fairly diverse macroinvertebrate community (see attached form). Small fish (blacknose dace) were also observed.

The purpose of a Point of First Use survey is to determine the point where the creek supports aquatic life in order to set effluent limits. In some instances the Point of First Use can occur some distance upstream from where there is flowing water since many macroinvertebrates are capable of escaping deep into the streambed and surviving. Unfortunately, due to drought conditions and low flows, the actual Point of First Use for this stream may be under estimated, i.e. it may be further upstream. The best time of the year to conduct such a survey is from November to April when flows are typically higher although this can vary due to drought conditions.

Based on the conditions presented to me during my investigation the Point of First Use should be established at a point approximately 150 yd. upstream from Pleasant Grove Road.

cc: Marty Ferry
Ruth Plant

Stream Code: 10236
Stream File: 2.21.0

POINT OF FIRST USE DETERMINATION

Stream: Unnamed tributary to Conodoguinet Creek
Date: June 26, 2002 Time: 0845

Discharger: Existing Proposed X (Cekovich Mobile Home Park)

Municipality: Silver Spring Township County: Cumberland

Collector: Robert J. Schott

Site Location: Approximately 150 yards upstream from Pleasant Grove Road

PHYSICAL DATA

Estimated Stream Width: 2 – 4 ft. Estimated Streain Depth: Riffle 0.5 in.
Pool 4 in.

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)			ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)		
Substrate Type	Diameter	% Composition in Sample Reach	Substrate Type	Characteristic	% Composition in Sample Reach
Bedrock			Detritus	Sticks, wood, coarse plant materials (CPOM)	
Boulder	>256 mm (10")		Muck-Mud	Black, very fine organic (FPOM)	
Cobble	64-256 mm (2.5-10")	20	Marl	Grey, shell fragment	
Gravel	2-64 mm (0.1-2.5")	50			
Sand	0.06-2 mm (gritty)				
Silt	0.004-0.06 mm	30			
Clay	<0.004 mm (slick)				

Temperature: 21°C DO: 7.9 pH: 6.5 Cond:

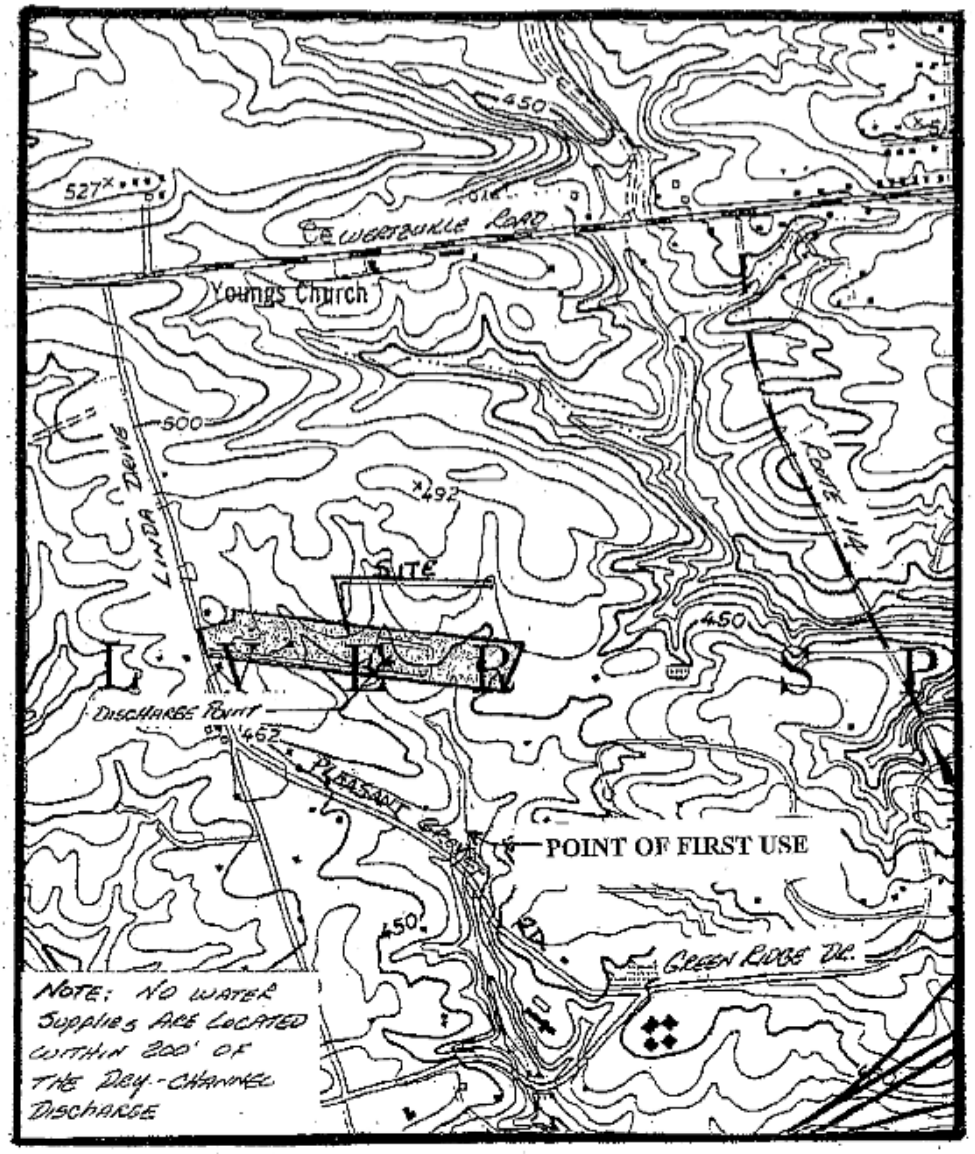
Water Samples: Yes No **X** Collector Number:

BIOLOGICAL DATA

Collection Gear: Kick Screen D-Frame Net **X** Other

Taxa Collected

1. Oligochacta (worm)
2. *Cloeon* (mayfly)
3. *Aeshna* (dragonfly)
4. Corduliidae
5. Libellulidae (dragonfly)
6. *Sialis* (alderfly)
7. *Cheumatopsyche* (caddisfly)
8. *Agabus* (beetle)
9. Chironomidae (midge)
10. *Tipula* (crane fly)
11.
12.



WERTZVILLE, PA.
SE/4 NEW BLOOMFIELD 15' QUADRANGLE
40077-C1-TF-024
1952
PHOTOREVISED 1987
DMA 5564 I SE-SERIES V831

SCALE: 1"=1000'

HOOVER
ENGINEERING SERVICES, INC.
ENGINEERS ◦ PLANNERS ◦ DESIGNERS
P.O. BOX 678, DILLSBURG, PA 17019
TELEPHONE (717) 790-0390 FAX (717) 790-0971

Ferry

Pennsylvania Department of Environmental Protection
909 Elmerton Avenue
Harrisburg, PA 17110-8200

July 9, 2002

Southcentral Regional Office

717-705-4707
FAX - 717-705-4760

Mr. Chris A. Hoover
Hoover Engineering Services, Inc.
658 Gaumer Road, Suite 100
New Cumberland, PA 17070-2823

Re: Cekovich Mobile Home Park
Silver Spring Township, Cumberland County

Dear Mr. Hoover:

This letter serves as a follow-up to your May 29, 2002 letter to the Department requesting that our biologist investigate and determine the point at which the receiving stream near the Cekovich Mobile Home Park becomes perennial. On June 26, 2002, a Point of First Use survey was conducted on an unnamed tributary (UNT) to Conodoguinet Creek in Silver Spring Township, Cumberland County.

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Based on the conditions presented to Mr. Robert Schott, Biologist, during this investigation, the Point of First Use should be established at a point approximately 150 yards upstream from Green Ridge Drive.

If you have any questions, please call me at 717-705-4793.

Sincerely,

Ruth M. Plant

Ruth M. Plant
Sewage Planning Specialist
Water Management Program

cc: James Hall, Zoning Officer, Silver Spring Township
Silver Spring Township Supervisors
L. Don Hodges

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
07B	10236	Trib 10236 to Conodoguinet Creek	1.290	444.00	0.04	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.147	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
SS Estates	PA0260967	0.0130	0.0130	0.0130	0.000	20.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	2.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
07B	10236	Trib 10236 to Conodoguinet Creek	**0.760**	396.00	0.43	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.147	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Green Ridge	PA0029866	0.0100	0.0100	0.0100	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	10.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	10.50	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
07B	10236	Trib 10236 to Conodoguinet Creek	**0.000**	366.00	0.73	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.147	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	0.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
07B	10236	Trib 10236 to Conodoguinet Creek

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
1.290	0.01	0.00	0.01	.0201	0.01715	.325	1.31	4.02	0.06	0.529	21.13	7.00
0.760	0.06	0.00	0.06	.0356	0.00748	.356	3.88	10.89	0.07	0.649	23.98	7.00
Q1-10 Flow												
1.290	0.01	0.00	0.01	.0201	0.01715	NA	NA	NA	0.06	0.535	21.05	7.00
0.760	0.06	0.00	0.06	.0356	0.00748	NA	NA	NA	0.07	0.671	23.92	7.00
Q30-10 Flow												
1.290	0.01	0.00	0.01	.0201	0.01715	NA	NA	NA	0.06	0.521	21.24	7.00
0.760	0.07	0.00	0.07	.0356	0.00748	NA	NA	NA	0.07	0.621	24.06	7.00

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.91	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.13	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
07B	10236	Trib 10236 to Conodoguinet Creek

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
1.290	SS Estates	15.36	4	15.36	4	0	0
0.760	Green Ridge	11.07	21	12.11	21	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
1.290	SS Estates	1.74	2	1.74	2	0	0
0.760	Green Ridge	1.37	7.68	1.45	7.68	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
1.29	SS Estates	25	25	2	2	5	5	0	0
0.76	Green Ridge	10	10	7.68	7.68	5	5	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07B	10236	Trib 10236 to Conodoguinet Creek

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
1.290	0.013	21.131	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
1.307	0.325	4.019	0.061
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
19.80	1.447	1.55	0.764
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
5.734	27.416	Owens	5
Reach Travel Time (days)			
0.529			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.053	18.26	1.49	6.86
0.106	16.85	1.43	7.22
0.159	15.54	1.37	7.40
0.212	14.34	1.32	7.53
0.265	13.22	1.26	7.63
0.318	12.20	1.21	7.73
0.371	11.25	1.17	7.82
0.423	10.38	1.12	7.91
0.476	9.58	1.08	7.98
0.529	8.83	1.03	8.05

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.760	0.023	23.982	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
3.878	0.356	10.890	0.072
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
5.05	0.928	1.47	0.951
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.685	27.523	Owens	5
Reach Travel Time (days)			
0.649			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.065	4.70	1.39	7.67
0.130	4.37	1.30	7.67
0.195	4.07	1.22	7.67
0.260	3.78	1.15	7.67
0.325	3.52	1.08	7.67
0.389	3.27	1.02	7.67
0.454	3.04	0.96	7.67
0.519	2.83	0.90	7.67
0.584	2.63	0.85	7.67
0.649	2.45	0.80	7.67

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07B	10236	Trib 10236 to Conodoguinet Creek

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
1.290	0.013	21.131	7.000
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1.307	0.325	4.019	0.061
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Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
5.734	27.416	Owens	5
Reach Travel Time (days)			
0.529			

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7.685	27.523	Owens	5
Reach Travel Time (days)			
0.649			

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0.649	2.45	0.80	7.67