Pennsylvania Department of Environmental Protection

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0247731**
Facility Type	**Industrial**	APS ID	**551336**
Major / Minor	**Minor**	Authorization ID	**1475411**

NPDES PERMIT FACT SHEET INDIVIDUAL INDUSTRIAL WASTE (IW) AND IW STORMWATER

Applicant and Facility Information

Applicant Name	**DS Services Of America Inc.**	Facility Name	**DS Services Of America Inc.**
Applicant Address	1761 Newport Road	Facility Address	1761 Newport Road
	Ephrata, PA 17522		Ephrata, PA 17522
Applicant Contact	Louis Vittorio	Facility Contact	Candi Wentzel
Applicant Phone	(717) 609-9313	Facility Phone	(717) 721-8547
Client ID	240552	Site ID	447422
SIC Code	5499	Municipality	West Earl Township
SIC Description	Retail Trade - Miscellaneous Food Stores	County	Lancaster
Date Application Received	March 4, 2024	EPA Waived?	Yes
Date Application Accepted	March 6, 2024	If No, Reason	

Purpose of Application: NPDES Renewal.

Summary of Review

DS Services of America Inc. has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its National Pollutant Discharge Elimination System (NPDES) permit. The existing permit was issued on August 30, 2019, and became effective on September 1, 2019, authorizing discharge of treated sewage from the DS Services of America Inc. into Cocalico Creek. The existing permit expiration date was August 31, 2024, and the permit has been administratively extended since that time.

DS Services of America Inc. is an industrial manufacturing facility for the bottling of water in Ephrata, Pennsylvania. DS Services manufactures bottled water in 3 and 5 gallon reusable containers under the brand names Crystal Springs, Crystal Fresh, and Primo. The facility has one production line which produces four varieties of potable bottled water: spring water, spring water with sodium fluoride added, distilled water with no minerals, and purified with minerals (sodium bicarbonate, sodium sulfate) added.

Per the previous fact sheet, he design flow of the plant is 0.135 mgd, which is uses as the basis for the development of effluent parameters. The current manufacturing processes discharging to public sanitary sewer are: domestic use, plant floor drains carbon towers backflush, water-softeners regeneration process, cooler refurbishing and bottle line product changeover. These flows account for only the average flow during plant operations (0.05 mgd) and do not discharge to a body of water and therefore are not covered by the NPDES permit. Current manufacturing processes discharging to a body of water are: multimedia backflush, reverse osmosis, distillation, 3/5 gallon washer #1 & #2 wash, 3/5 gallon waster #2 rinse, clean in place (CIP) process. The influent process wastewater is held in a 15,000 gallon mixing tank to allow for homogenization. After homogenization, the wastewater is tested and chemical additives are added for pH adjustment. Then, the wastewater stream goes through an ultrafiltration membrane system (UF) and is pumped into a 4,000 gallon recirculation tank. The recirculation tank analyzes Total Chlorine, pH, and Turbidity; if the analysis results violate the NPDES permit limits, the wastewater is pumped into a 40,000 gallon effluent storage tank. The storage tank reintroduces the effluent into the UF system and repeats

Approve	Deny	Signatures	Date
X		Benjamin R. Lockwood Benjamin R. Lockwood / Environmental Engineering Specialist	December 16, 2024
X		Maria D. Bebenek for Daniel W. Martin, P.E. / Environmental Engineer Manager	January 27, 2025

Summary of Review

the process and analysis, and will discharge when within permitted limits. These flows discharge to the Cocalico Creek via a 700-foot long dry, grass-lined swale which turns into a stone rip-rap road culvert shortly before reaching Cocalico Creek.

Changes in this renewal: Monitoring for PFOA, PFOS, PFBS, and HFPO-DA has been added.

Supplemental information for this facility is provided at the end of this fact sheet.

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.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.06
Latitude	40º 8' 21.13"	Longitude	76º 13' 20.27"
Quad Name		Quad Code	
Wastewater Description:	IW Process Effluent without ELG		
Receiving Waters	Cocalico Creek (WWF)	Stream Code	7656
NHD Com ID	57462485	RMI	2.4
Drainage Area	137 mi^2	Yield (cfs/mi^2)	0.11
Q_{7-10} Flow (cfs)	15	Q_{7-10} Basis	USGS PA StreamStats
Elevation (ft)	291	Slope (ft/ft)	
Watershed No.	7-J	Chapter 93 Class.	WWF
Existing Use	N/A	Existing Use Qualifier	N/A
Exceptions to Use	N/A	Exceptions to Criteria	N/A
Assessment Status	Impaired		
Cause(s) of Impairment	Siltation, Habitat Alterations, Nutrients, Siltation, Pathogens		
Source(s) of Impairment	Agriculture, Habitat Modification – Other Than Hydromodification, Agriculture, Urban Runoff/Storm Sewers, Source Unknown		
TMDL Status	N/A	Name	N/A
Nearest Downstream Public Water Supply Intake	Lancaster Municipal Authority Water Treatment Plant		
PWS Waters	Conestoga River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	11

Changes Since Last Permit Issuance: USGS PA StreamStats provided a drainage area of 137 mi^2 and a Q_{7-10} of 15 cfs at the point of discharge.

Other Comments: None

Treatment Facility Summary				
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Industrial	Secondary Treatment	Rinse	NA	0.05
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.135	NA	NA	NA	NA

Changes Since Last Permit Issuance: None

Other Comments: The treatment process consists of: A 15,000 gallon mixing tank with an inline pH probe and sodium bisulfite addition, an ultrafiltration (UF) membrane system and recirculation tank, Outfall 001 to Cocalico Creek.

Compliance History	
Summary of DMRs:	A summary of the past 12-month DMR effluent data is presented on the next page of this fact sheet.
Summary of Inspections:	11/1/2019: A Notice of Violation (NOV) was issued for violations of effluent limitations from 2015 – 2019. 12/6/19: A routine inspection was conducted. The effluent swale appeared clear. No concerns were noted at the outfall. 7/20/20: An administrative inspection was conducted. The facility was operating normally, and all treatment units were operable. There were not outstanding issues or needs at the time of the inspection.

Other Comments: There are no open violations for this Applicant.

Existing Effluent Limitations and Monitoring Requirements

Outfall 001

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Quarterly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.5 Avg Mo	XXX	1.6	1/day	Grab
Total Suspended Solids	XXX	XXX	XXX	30 Avg Mo	45	60	2/month	24-Hr Composite
Nitrate-Nitrite as N	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
Nitrate-Nitrite as N (Total Load, lbs) (lbs)	Report Avg Qrtly	XXX	XXX	XXX	XXX	XXX	1/quarter	Calculation
Total Nitrogen	XXX	XXX	XXX	Report Avg Mo	XXX	XXX	1/month	Calculation
Total Nitrogen (Total Load, lbs) (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Ammonia-Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
Ammonia-Nitrogen (Total Load, lbs) (lbs)	Report Avg Qrtly	XXX	XXX	XXX	XXX	XXX	1/quarter	Calculation
Total Kjeldahl Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
Total Kjeldahl Nitrogen (Total Load, lbs) (lbs)	Report Avg Qrtly	XXX	XXX	XXX	XXX	XXX	1/quarter	Calculation
Total Phosphorus	XXX	XXX	XXX	1.0 Avg Mo	2.0	2.5	2/month	24-Hr Composite
Total Phosphorus (Total Load, lbs) (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Cadmium, Total	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
Lead, Total	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .06
Latitude 40º 8' 21.13" **Longitude** 76º 13' 20.27"
Wastewater Description: IW Process Effluent without ELG

Technology-Based Limitations

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

Parameter	Limit (mg/l)	SBC	Federal Regulation	State Regulation
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)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

Toxics

Currently, the system is inactive and no wastewater is discharging through Outfall 001. As a result, influent and effluent water quality sampling was not provided in the application. Toxic parameters will not be analyzed at this time, and the existing monitoring requirements for Total Cadmium and Total Lead will remain in the permit. If the system is put back into operation, effluent water quality sampling will need to be conducted, and the toxic parameters re-evaluated.

Flow

Flow will be required to be monitored as recommended by the NPDES Permit Writers' Manual (document number 362-0400-001) for Industrial Dischargers.

pH

PA Code 95.2(1) requires effluent pH limits of not less than 6.0 and not greater than 9.0 at all times in the effluent. The permit will continue to require pH limits of 6.0 to 9.0 SU.

Chesapeake Bay Total Maximum Daily Load (TMDL)

DEP developed a strategy to comply with the EPA and Chesapeake Bay Foundation requirements by reducing point source loadings of Total Nitrogen (TN) and Total Phosphorus (TP). This strategy can be located in the *Pennsylvania Chesapeake Watershed Implementation Plan* (WIP), dated January 11, 2011. Subsequently, an update to the WIP was published as the Phase 2 WIP. As part of the Phase 2 WIP, a *Phase 2 Watershed Implementation Plan Wastewater Supplement* (Phase 2 Supplement) was developed, providing an update on TMDL implementation for point sources and DEP's current implementation strategy for wastewater. A new update to the WIP was published as the Phase 3 WIP in August 2019. As part of the Phase 3 WIP, a *Phase 3 Watershed Implementation Plan Wastewater Supplement* (Phase 3 Supplement) was developed, and was most recently revised on July 29, 2022, and is the basis for the development of any Chesapeake Bay related permit parameters. Sewage discharges have been prioritized based on their design flow to the Bay. The highest priority (Phases 1, 2, and 3) dischargers will receive annual Cap Loads based on their design flow on August 29, 2005 and concentrations of 6 mg/l TN and 0.8 mg/l TP. These limits may be achieved through a combination of treatment technology, credits, or offsets.

For nonsignificant IW facilities, monitoring and reporting of TN and TP will be required throughout the permit term in renewed or amended permits anytime the facility has the potential to introduce a net TN or TP increase to the load contained within the intake water used in processing. During the initial application, rinse water was shown to have TP levels of 18 mg/l; the process was changed to use a non-phosphate cleaner in the rinse cycle. At that time, BPJ limits for TN of 1 mg/l average monthly, 2 mg//l daily maximum, and 2.5 mg/l IMAX were established in the permit, to serve as an indication of possible phosphate-based cleaners being used during operations.

Due to phosphate-based cleaners being used, a limit was established in the existing permit, and monitoring was included for TN. These limits, as well as the monitoring for TN, will continue to be included in the renewal permit.

PFAS-Related Compounds

DEP's NPDES renewal application for Industrial Waste Facilities now requires effluent testing for PFAS related compounds as part of Pollutant Group 1: Perfluorooctanoic acid (PFOA), Perfluorooctanesulfonic acid (PFOS), Perfluorobutanesulfonic acid (PFBS), and Hexafluoropropylene oxide dimer acid (HFPO-DA). Per DEP's SOP BCW-PMT-032, If sampling that is completed as part of the permit renewal application reveals a detection for any of these compounds, a quarterly monitoring requirement for all compounds will be established in the permit. If sampling that is completed as part of the permit renewal application demonstrates non-detect values at or below the Target QLs for these compounds in a minimum of 3 samples, an annual monitoring requirement for all compounds will be established in the permit. As the PFAS compounds were not sampled as part of this application, quarterly monitoring requirements will be established for all compounds in this renewal permit. Monitoring for PFOA, PFOS, HFPO-DA, and PFBS may be discontinued if the results in 4 consecutive monitoring periods indicate non-detect results at or below the Target QLs o 4.0 ng/l for PFOA, 3.7 ng/l for PFOS, 3.5 ng/l for PFBS, and 6.4 ng/l for HFPO-DA. The NPDES permit will include this monitoring language as a footnote in Part A of the permit.

Anti-Degradation

The effluent limits for this discharge 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. No High Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

303(d) Listed Streams

The discharge is located on a stream segment that is designated on the 303(d) list as impaired. There is a recreational impairment due to pathogens from an unknown source. There is an aquatic life impairment due to siltation from agriculture, habitat alterations from habitat modification – other than hydromodification, nutrients from agriculture, and siltation from urban runoff/storm sewers.

Class A Wild Trout Fisheries

No Class A Wild Trout Fisheries are impacted by this discharge.

Anti-Backsliding

Pursuant to 40 CFR § 122.44(l)(1), all proposed permit requirements addressed in this fact sheet are at least as stringent as the requirements implemented in the existing permit.

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	Minimum	Average Quarterly	Daily 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
TRC	XXX	XXX	XXX	0.5 Avg Mo	XXX	1.6	1/day	Grab
TSS	XXX	XXX	XXX	30 Avg Mo	45	60	2/month	24-Hr Composite
Nitrate-Nitrite	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
Nitrate-Nitrite (lbs)	Report Avg Qrtly	XXX	XXX	XXX	XXX	XXX	1/quarter	Calculation
Total Nitrogen	XXX	XXX	XXX	Report Avg Mo	XXX	XXX	1/month	Calculation
Total Nitrogen (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Ammonia	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
Ammonia (lbs)	Report Avg Qrtly	XXX	XXX	XXX	XXX	XXX	1/quarter	Calculation
TKN	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
TKN (lbs)	Report Avg Qrtly	XXX	XXX	XXX	XXX	XXX	1/quarter	Calculation
Total Phosphorus	XXX	XXX	XXX	1.0 Avg Mo	2.0	2.5	2/month	24-Hr Composite
Total Phosphorus (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation

Outfall 001 , Continued (from 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	Minimum	Average Quarterly	Daily Maximum	Instant. Maximum		
Total Cadmium	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
Total Lead	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
PFOA (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
PFOS (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
PFBS (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
HFPO-DA (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab

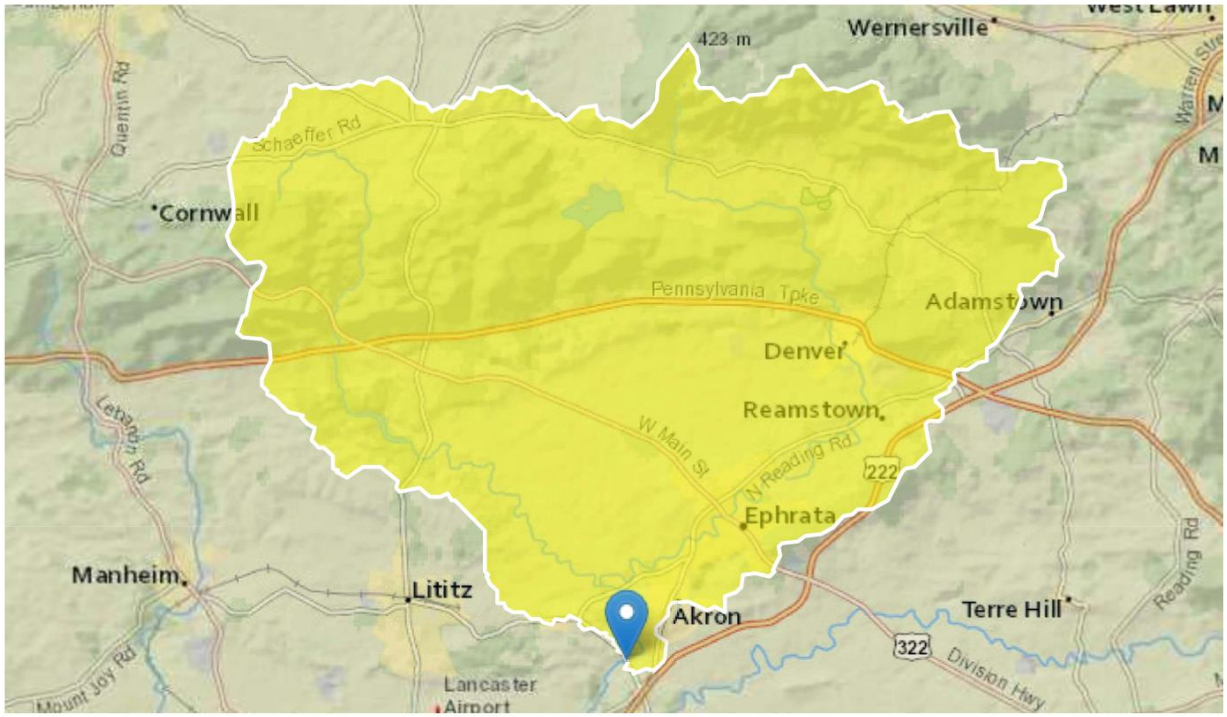
Compliance Sampling Location: Outfall 001

Other Comments: None

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: BCW-PMT-032, BCW-PMT-001
☐	Other:

DS Services of America Inc. PA0247731 Outfall 001

Region ID: PA
Workspace ID: PA20241212164441115000
Clicked Point (Latitude, Longitude): 40.13915, -76.22241
Time: 2024-12-12 11:45:06 -0500



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Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	5.1412	degrees
DRNAREA	Area that drains to a point on a stream	137	square miles
ROCKDEP	Depth to rock	4.5	feet
URBAN	Percentage of basin with urban development	6.4089	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	137	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	5.1412	degrees	1.7	6.4
ROCKDEP	Depth to Rock	4.5	feet	4.13	5.21
URBAN	Percent Urban	6.4089	percent	0	89

Low-Flow Statistics Flow Report [Low Flow Region 1]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	28.2	ft^3/s	46	46
30 Day 2 Year Low Flow	36.1	ft^3/s	38	38
7 Day 10 Year Low Flow	15	ft^3/s	51	51
30 Day 10 Year Low Flow	19.3	ft^3/s	46	46
90 Day 10 Year Low Flow	28	ft^3/s	41	41

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

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Application Version: 4.24.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

DS Services of America Inc. PA0247731 RMI = 0.24

Region ID: PA
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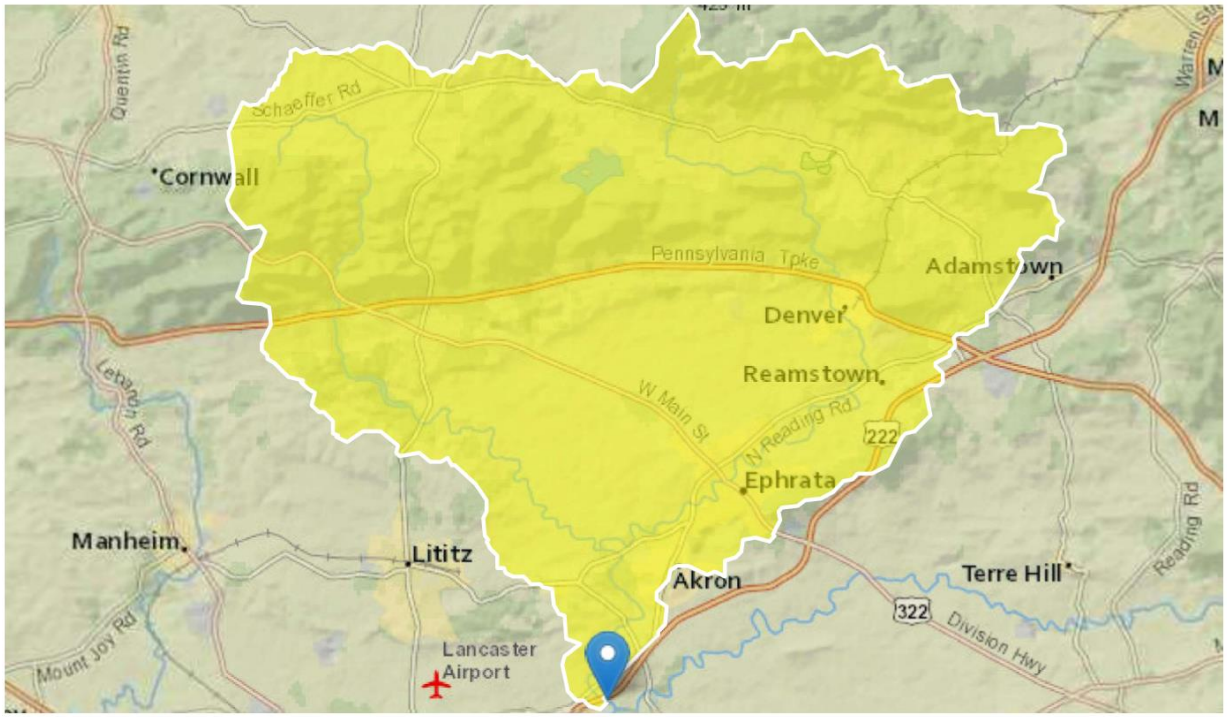

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Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	5.1473	degrees
DRNAREA	Area that drains to a point on a stream	140	square miles
ROCKDEP	Depth to rock	4.5	feet
URBAN	Percentage of basin with urban development	6.4924	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	140	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	5.1473	degrees	1.7	6.4
ROCKDEP	Depth to Rock	4.5	feet	4.13	5.21
URBAN	Percent Urban	6.4924	percent	0	89

Low-Flow Statistics Flow Report [Low Flow Region 1]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	28.9	ft^3/s	46	46
30 Day 2 Year Low Flow	37	ft^3/s	38	38
7 Day 10 Year Low Flow	15.4	ft^3/s	51	51
30 Day 10 Year Low Flow	19.8	ft^3/s	46	46
90 Day 10 Year Low Flow	28.7	ft^3/s	41	41

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

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Application Version: 4.24.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1