pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0247154**
Facility Type	**Industrial**	APS ID	**484376**
Major / Minor	**Minor**	Authorization ID	**1301704**

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

Applicant and Facility Information

Applicant Name	**Possum Valley Municipal Authority Adams County**	Facility Name	**Possum Valley Municipal Authority Water System**
Applicant Address	609 Clearview Road Aspers, PA 17304-9703	Facility Address	70 Opossum Hill Road Aspers, PA 17304
Applicant Contact	Jeffrey Taylor	Facility Contact	Jeffery Taylor
Applicant Phone	(717) 677-8551	Facility Phone	(717) 677-8551
Client ID	6159	Site ID	454084
SIC Code	4952	Municipality	Menallen Township
SIC Description	Trans. & Utilities - Sewerage Systems	County	Adams
Date Application Received	January 2, 2020	EPA Waived?	Yes
Date Application Accepted	January 15, 2020	If No, Reason	

Purpose of Application: NPDES permit renewal.

Summary of Review

Possum Valley Municipal Authority (PVMA) has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its NPDES permit. The permit was last reissued on June 29, 2015 and became effective on July 1, 2015. The permit will expire on June 30, 2020.

This facility is not covered under Effluent Limitation Guidelines (ELG). The discharge flow design is 0.0065 MGD. The facility discharges membrane filter backwash water at a rate of 0.0006 MGD. The discharge through Outfall 001 is into an Unnamed Tributary (UNT) to Opossum Creek.

The WQM Part II permit is not needed for PVWA facility because this is not treatment of wastewater. Additionally, backwash is a combination of compressed air and filtered water, and not treated before discharge to surface.

Based on the review outline in this fact sheet, it is recommended that the permit be drafted and published in the Pennsylvania Bulletin for public comments for 30 days.

Approve	Deny	Signatures	Date
X		*Hilaryle* Hilary H. Le / Environmental Engineering Specialist	June 12, 2020
		Daniel W. Martin, P.E. / Environmental Engineer Manager	
		Maria D. Bebenek, P.E. / Clean Water Program Manager	

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.0006
Latitude	39º 59' 29.00"	Longitude	-77º 14' 14.65"
Quad Name	Biglerville	Quad Code	
Wastewater Description:	Water Treatment Effluent		
Receiving Waters	Unnamed Tributary to Opossum Creek (TSF)	Stream Code	09107
NHD Com ID	57469817	RMI	0.13 mile
Drainage Area	0.26 mi.^{2}	Yield (cfs/mi^2)	0.37
Q_{7-10} Flow (cfs)	0.095	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	700	Slope (ft/ft)	
Watershed No.	7-F	Chapter 93 Class.	TSF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status	End date 7/8/2013	Name	Opossum Creek
Nearest Downstream Public Water Supply Intake	Wrightsville Water Supply Co., York County		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI	29 miles	Distance from Outfall (mi)	Approximate 80 miles

Changes Since Last Permit Issuance: none

Drainage Area
The discharge is to unnamed tributary of Swift Run at RMI 0.13 miles. A drainage area upstream of the discharge is estimated to be 0.26 mi.^{2}, according to USGS StreamStats available at https://streamstats.usgs.gov/ss/.

Stream Flow
According to USGS StreamStats, the Q_{7-10} at the discharge point is 0.095 cfs and the drainage area is 0.26 mi.^{2} which results in a Q_{7-10} low flow yield of 0.37 cfs/mi.^{2}. This information is used to obtain a chronic or 30-day (Q_{30-10}), and an acute or 1-day (Q_{1-10}) exposure stream flow for the discharge point as follows (Guidance No. 391-2000-023):

$$Q_{7-10} = 0.095 \text{ cf}$$
$$\text{Low Flow Yield} = 0.095 \text{ cfs} / 0.26 \text{ mi.}^2 \approx 0.365 \text{ (0.37) cfs/mi.}^2$$
$$Q_{30-10} = 1.36 * 0.095 \text{ cfs} \approx 0.129 \text{ cfs}$$
$$Q_{1-10} = 0.64 * 0.095 \text{ cfs} \approx 0.061 \text{ cfs}$$

The resulting Q_{7-10} dilution ratio is: $Q_{stream} / Q_{discharge}$ = 0.095 cfs / [0.0006 MGD * (1.547 cfs/MGD)] = 102.3:1

Public Water Supply
The nearest downstream public water supply intake is the Wrightsville Water Supply Co. on Susquehanna River in York County, approximately 80 miles downstream of this discharge. Given the nature and dilution, the discharge is not expected to significantly impact the water supply.

Treatment Facility Summary				
Treatment Facility Name: Possum Valley Municipal Authority Water Filtration Plant				
WQM Permit No.	**Issuance Date**			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Industrial				
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**

Changes Since Last Permit Issuance: none

The process wastewater is backwash from drinking water membrane filter.

Compliance History	
Summary of DMRs:	See DMR reported from May 1, 2019 to April 30, 2020 Table below (Page # 4).
Summary of Inspections:	11/20/2017: Mr. Bowen, DEP WQS, conducted compliance evaluation inspection. Effluent was clear. The field test results were within permit limits. There were no violations noted during inspection. 3/1/2016: Mr. Haines, DEP WQS, conducted compliance evaluation inspection. Effluent was clear. The field test results were within permit limits. The industrial waste discharge is made up of the filter backwash from the two membrane filtration units used to filter the drinking water.
Other Comments:	There are currently no open violations associated with the permittee or the facility.

Other Comments: The DMR data did not indicate any limit exceedances.

Compliance History

DMR Data for Outfall 001 (from May 1, 2019 to April 30, 2020)

Parameter	APR-20	MAR-20	FEB-20	JAN-20	DEC-19	NOV-19	OCT-19	SEP-19	AUG-19	JUL-19	JUN-19	MAY-19
Flow (MGD) Average Monthly		0.0006					0.0006			0.0006	0.0006	
Flow (MGD) Daily Maximum		0.0006					0.0006			0.0006	0.0006	
pH (S.U.) Minimum		6.6					6.6			6.3	6.5	
pH (S.U.) Maximum		6.7					6.8			6.7	6.5	
TRC (mg/L) Average Monthly		< 0.1					< 0.1			< 0.1	< 0.1	
TRC (mg/L) Instantaneous Maximum		< 0.1					< 0.1			< 0.1	< 0.1	
TSS (mg/L) Average Monthly		4.0			5			3			1	
TSS (mg/L) Daily Maximum		4.0			5			3			1	
Total Aluminum (mg/L) Average Monthly		0.2			0.1			0.2			0.1	
Total Aluminum (mg/L) Daily Maximum		0.22			0.13			0.16			0.1	
Total Iron (mg/L) Average Monthly		0.3			0.4			0.5			0.3	
Total Iron (mg/L) Daily Maximum		0.28			0.4			0.45			0.31	
Total Manganese (mg/L) Average Monthly		0.005			< 0.1			0.01			0.01	
Total Manganese (mg/L) Daily Maximum		0.005			< 0.05			0.014			0.014	

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.0006
Latitude 39º 59' 29.00" **Longitude** -77º 14' 15.00"
Wastewater Description: Water Treatment Effluent

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
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)

Water Quality-Based Limitations / Best Professional Judgment (BPJ) Limitations

Effluent Limitations Evaluation:

Evaluation of effluent limitations for this facility is based on Best Practicable Control Technology Currently Available (BPT), according to guidance document 362-2183-003 (*Technology-Based Control Requirements for Water Treatment Plant Wastes*). The attached TRC Excel spreadsheet calculator, which uses the equations and calculations from guidance document 391-2000-015, was also used. However, the TRC limits from the BPT document will be used in the permit since they are more stringent. The existing instantaneous maximum TRC limitation will be changed from 1.6 mg/L to 1.0 mg/L to reflect the requirements of 362-2183-003 and remain in the proposed permit due to anti-backsliding requirements. Additionally, past DMRs and inspection reports show that the facility has been consistently achieving concentrations under these limits.

Guidance document 362-2183-003 defines Best Practicable Control Technology Currently Available (BPT) effluent control requirements for filter backwash wastewater as follows:

Parameter	Monthly Average (mg/L)	Daily Maximum (mg/L)
Total Suspended Solids	30	60
Total Iron	2	4
Total Aluminum	4	8
Total Manganese	1	2
Flow	Monitor	
pH	6 to 9 at all times	
Total Residual Chlorine	0.5	1.0

PENTOXSD was run for Total Iron, Total Aluminum, and Total Manganese (see attached data). The model results indicate limits that are less stringent than the above technology limits for all three parameters. Therefore, the renewed permit will reflect the above BPT limitations. These limits will remain in the proposed permit.

Toxics:

The attached toxics screening analysis spreadsheet indicates phenolics as a parameter of concern. However, since the phenolics sample was non-detect and no public water supply exists nearby, PENTOXSD was not run for phenolics.

No additional toxics monitoring requirements are recommended for the permit.

Chesapeake Bay Strategy:

This is a non-significant industrial discharge facility that will not need a Total Phosphorus (TP) or Total Nitrogen (TN) loading cap.

A TN and TP “Monitor & Report” requirement will not be necessary since this facility discharges wastewater without any chemical additives containing nitrogen or phosphorus. The Supplement to Phase II Watershed Implementation Plan states the following:

“For non-significant 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. In general, facilities that discharge groundwater and cooling water with no addition of chemicals containing N or P do not require monitoring.”

Antidegradation (93.4):

The effluent limits for this discharge have been developed to ensure that existing in-stream 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:

This discharge is not located on a 303(d) listed stream segment. A TMDL is currently proposed for Opossum Creek in order to address siltation issues. This facility is not contained in the draft TMDL as it does not contribute a significant sediment load to the Opossum Creek watershed.

Class A Wild Trout Fisheries:

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

WQM 7.0 / PENTOXSD Data:

The following two nodes were used in the modeling effort.

Node 1:	Outfall 001 on UNT Opossum Creek (09107)	
	Elevation:	700 ft (USGS National Map Viewer)
	Drainage Area:	0.26 $mi.^2$ (USGS PA StreamStats)
	River Mile Index:	0.13 (PA DEP eMapPA)
	Low Flow Yield:	0.37 $cfs/mi.^2$
	Discharge Flow:	0.0006 MGD
Node 2:	Just before confluence with Opossum Creek	
	Elevation:	653 ft (USGS National Map Viewer)
	Drainage Area:	0.27 $mi.^2$ (USGS PA StreamStats)
	River Mile Index:	0.01 (PA DEP eMapPA)
	Low Flow Yield:	0.37 $cfs/mi.^2$
	Discharge Flow:	0.0 MGD

TOXICS SCREENING ANALYSIS
WATER QUALITY POLLUTANTS OF CONCERN
VERSION 2.7

CLEAR FORM

Facility: **Possum Valley MA** NPDES Permit No.: **PA0247154** Outfall: **001**
Analysis Hardness (mg/L): **44** Discharge Flow (MGD): **0.0065** Analysis pH (SU): **7**
Stream Flow, Q_{7-10} (cfs): **0.095**

	Parameter	Maximum Concentration in Application or DMRs (µg/L)		Most Stringent Criterion (µg/L)	Candidate for PENTOXSD Modeling?	Most Stringent WQBEL (µg/L)	Screening Recommendation
Group 1	Total Dissolved Solids			500000			
	Chloride			250000			
	Bromide	<		N/A			
	Sulfate			250000			
	Fluoride	<		2000			
Group 2	Total Aluminum	<	1.5	750	No (Value < QL)	13,946.26	
	Total Antimony	<		5.6			
	Total Arsenic			10			
	Total Barium	<		2400			
	Total Beryllium	<		N/A			
	Total Boron	<		1600			
	Total Cadmium	<		0.271			
	Total Chromium	<		N/A			
	Hexavalent Chromium	<		10.4			
	Total Cobalt	<		19			
	Total Copper	<		9.3			
	Total Cyanide	<		N/A			
	Total Iron		3	1500	No	43,516.80	
	Dissolved Iron			300			
	Total Lead	<		3.2			
	Total Manganese		0.06	1000	No	29,011.20	
	Total Mercury	<		0.05			
	Total Molybdenum	<		N/A			
	Total Nickel			52.2			
	Total Phenols (Phenolics)			5			
	Total Selenium	<		5.0			
	Total Silver	<		3.8			
	Total Thallium	<		0.24			
	Total Zinc	<		119.8			

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.095	= Q stream (cfs)	0.5	= CV Daily
0.0006	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 32.668	1.3.2.iii	WLA cfc = 31.841
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 12.173	5.1d	LTA_cfc = 18.511

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.635	

WLA afc	**(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...** **...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	**(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))...** **...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	**1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)**

Analysis Results

Effluent Limits

Hydrodynamics | Wasteload Allocations | Effluent Limits

RMI	Name	Permit Number	Disc Flow (mgd)
0.13	Possum Valley	PA0247154	0.0006

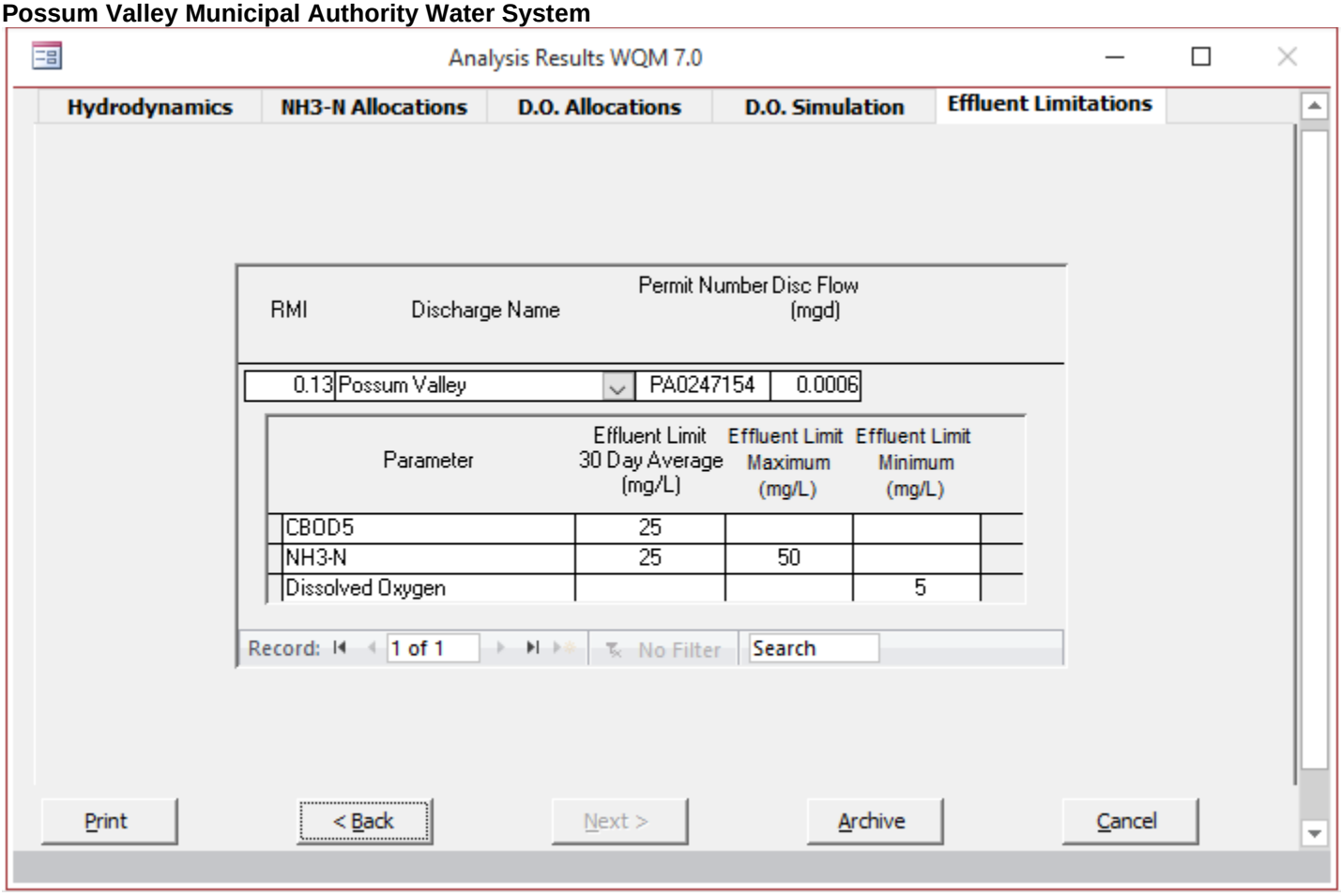
Parameter	Effluent Limit (µg/L)	Governing Criterion	Max. Daily Limit (µg/L)	Most Stringent WQBEL (µg/L)	Most Stringent WQBEL Criterion
ALUMINUM	13946.26	AFC	21758.4	13946.26	AFC
MANGANESE	29011.2	THH	45262.14	29011.2	THH
TOTAL IRON	43516.8	CFC	67893.21	43516.8	CFC

Record: 1 of 3 | No Filter | Search

Record: 1 of 1 | No Filter | Search

Number of Samples 4

Print | < Back | Next > | Archive | Cancel


Analysis Results WQM 7.0
Hydrodynamics
NH3-N Allocations
D.O. Allocations
D.O. Simulation
Effluent Limitations
RMI
Discharge Name
Permit Number
Disc Flow (mgd)
0.13
Possum Valley
PA0247154
0.0006
Parameter
Effluent Limit 30 Day Average (mg/L)
Effluent Limit Maximum (mg/L)
Effluent Limit Minimum (mg/L)
CBOD5
25
NH3-N
25
50
Dissolved Oxygen
5
Record: 1 of 1
No Filter
Search
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Cancel

Existing Effluent Limitations and Monitoring Requirements

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Quarterly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Daily when Discharging	Estimate
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	Daily when Discharging	Grab
TRC	XXX	XXX	XXX	0.5 Avg Mo	XXX	1.0	Daily when Discharging	Grab
TSS	XXX	XXX	XXX	30.0	60.0	75	1/quarter	24-Hr Composite
Total Aluminum	XXX	XXX	XXX	4.0	8.0	10	1/quarter	24-Hr Composite
Total Iron	XXX	XXX	XXX	2.0	4.0	5	1/quarter	24-Hr Composite
Total Manganese	XXX	XXX	XXX	1.0	2.0	2.5	1/quarter	24-Hr Composite

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" (362-0400-001), SOPs and/or BPJ.

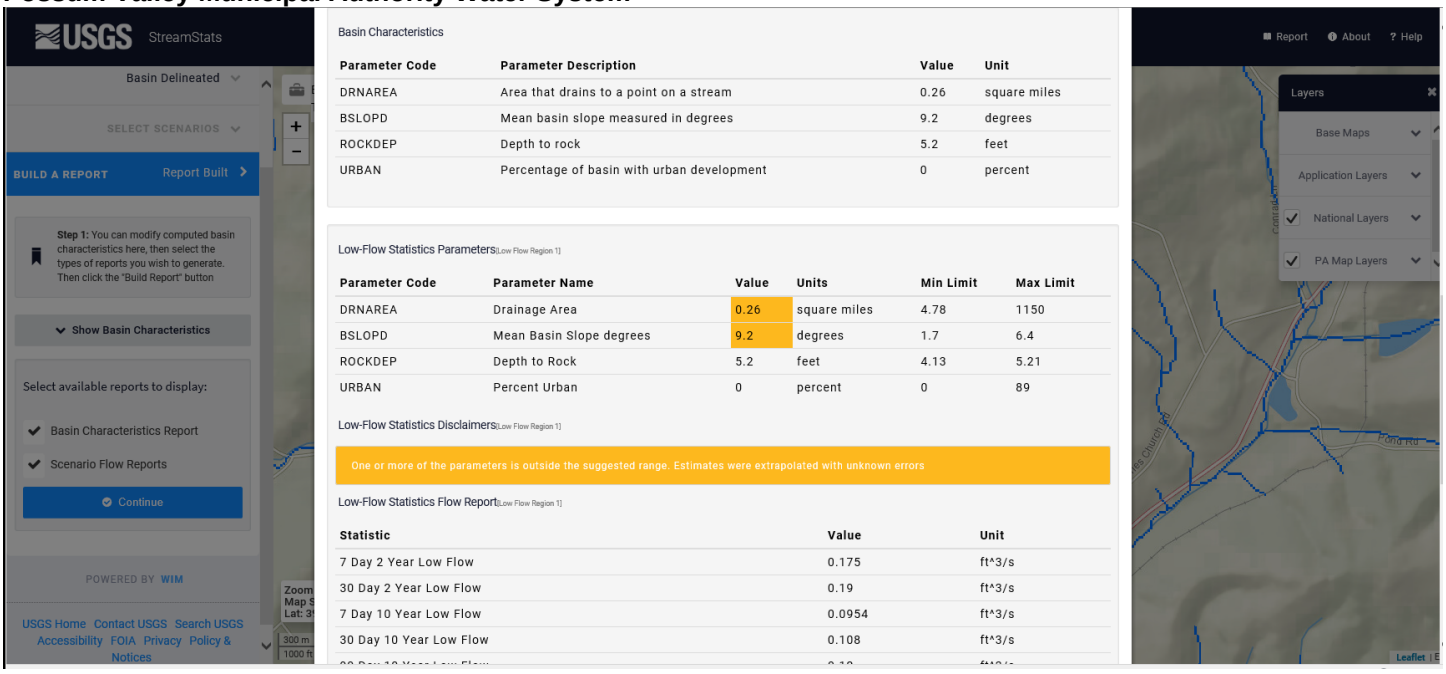
Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Quarterly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Daily when Discharging	Estimate
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	Daily when Discharging	Grab
TRC	XXX	XXX	XXX	0.5 Avg Mo	XXX	1.0	Daily when Discharging	Grab
TSS	XXX	XXX	XXX	30.0	60.0	75.0	1/quarter	24-Hr Composite
Total Aluminum	XXX	XXX	XXX	4.0	8.0	10.0	1/quarter	24-Hr Composite
Total Iron	XXX	XXX	XXX	2.0	4.0	5.0	1/quarter	24-Hr Composite
Total Manganese	XXX	XXX	XXX	1.0	2.0	2.5	1/quarter	24-Hr Composite

Compliance Sampling Location:

Other Comments:

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☒	PENTOXSD for Windows Model (see Attachment)
☒	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Toxics Screening Analysis Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☒	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☒	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 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, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 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, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☒	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP:
☐	Other:



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.26	square miles
BSLOPD	Mean basin slope measured in degrees	9.2	degrees
ROCKDEP	Depth to rock	5.2	feet
URBAN	Percentage of basin with urban development	0	percent

Low-Flow Statistics Parameters [Low Flow Region 1]

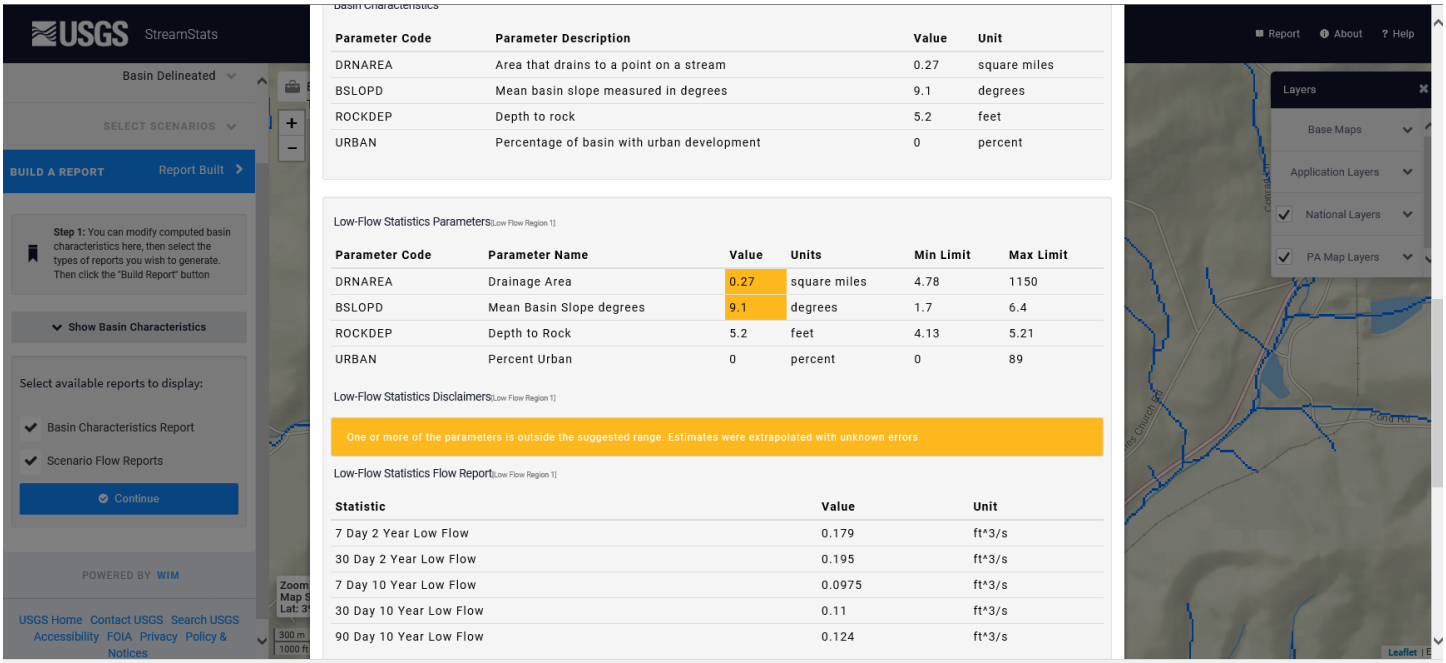
Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.26	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	9.2	degrees	1.7	6.4
ROCKDEP	Depth to Rock	5.2	feet	4.13	5.21
URBAN	Percent Urban	0	percent	0	89

Low-Flow Statistics Disclaimers [Low Flow Region 1]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

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

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.175	ft^3/s
30 Day 2 Year Low Flow	0.19	ft^3/s
7 Day 10 Year Low Flow	0.0954	ft^3/s
30 Day 10 Year Low Flow	0.108	ft^3/s



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.27	square miles
BSLOPD	Mean basin slope measured in degrees	9.1	degrees
ROCKDEP	Depth to rock	5.2	feet
URBAN	Percentage of basin with urban development	0	percent

Low-Flow Statistics Parameters [Low Flow Region 1]

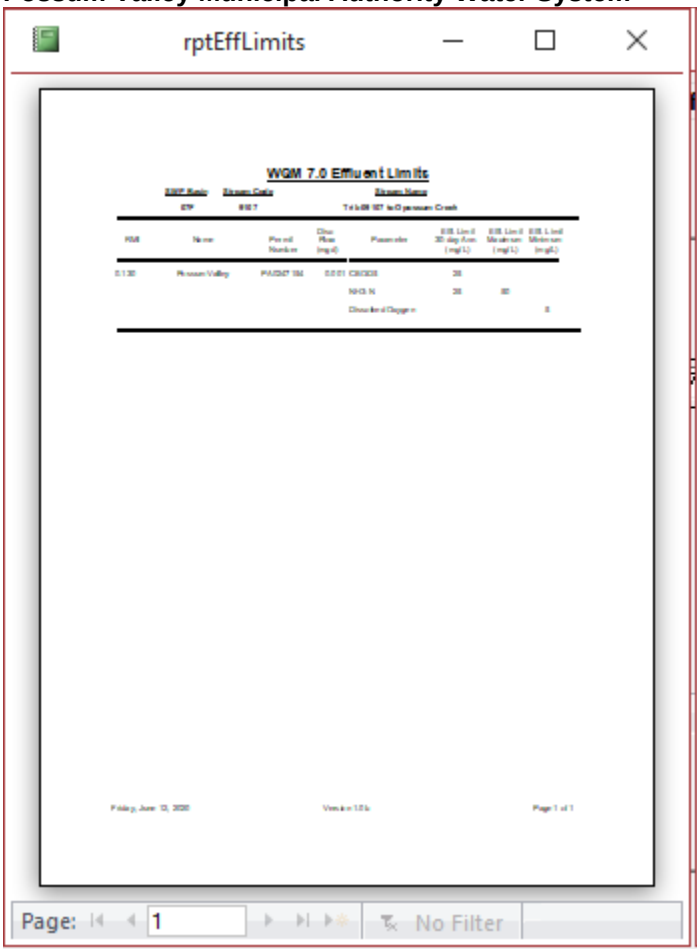
Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.27	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	9.1	degrees	1.7	6.4
ROCKDEP	Depth to Rock	5.2	feet	4.13	5.21
URBAN	Percent Urban	0	percent	0	89

Low-Flow Statistics Disclaimers [Low Flow Region 1]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

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

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.179	ft^3/s
30 Day 2 Year Low Flow	0.195	ft^3/s
7 Day 10 Year Low Flow	0.0975	ft^3/s
30 Day 10 Year Low Flow	0.11	ft^3/s
90 Day 10 Year Low Flow	0.124	ft^3/s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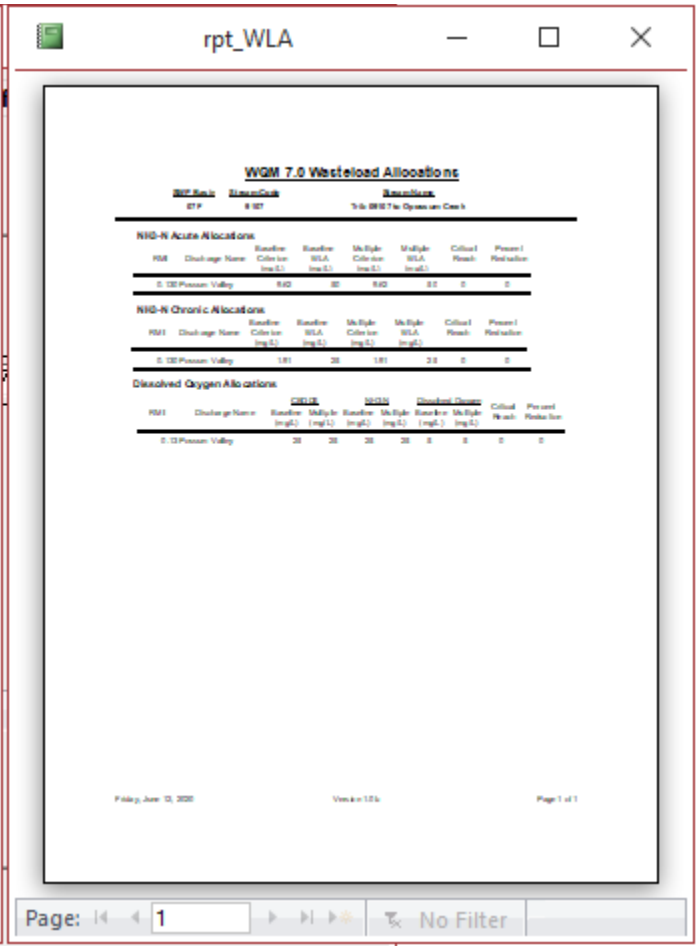
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NH3-N Acute Allocations
NH3-N Chronic Allocations
Dissolved Oxygen Allocations
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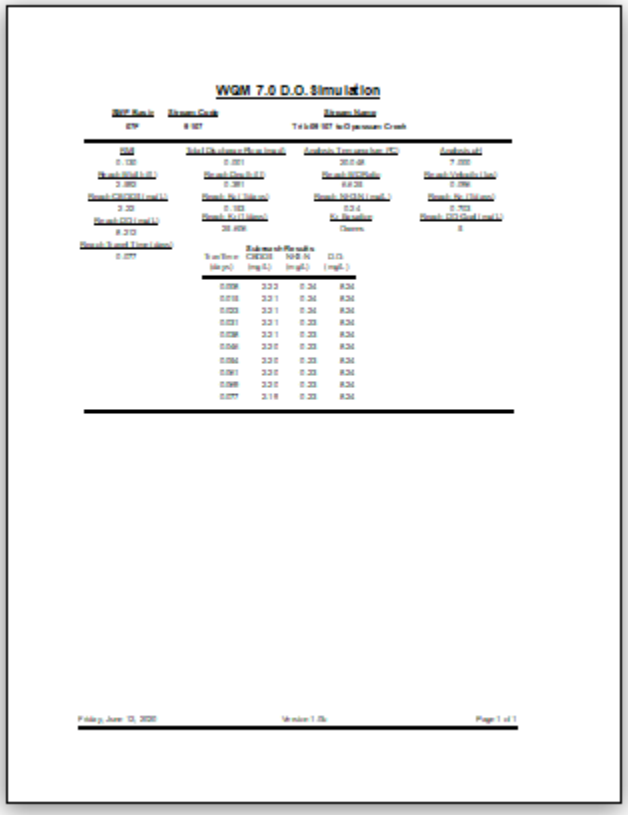
rptDOSim



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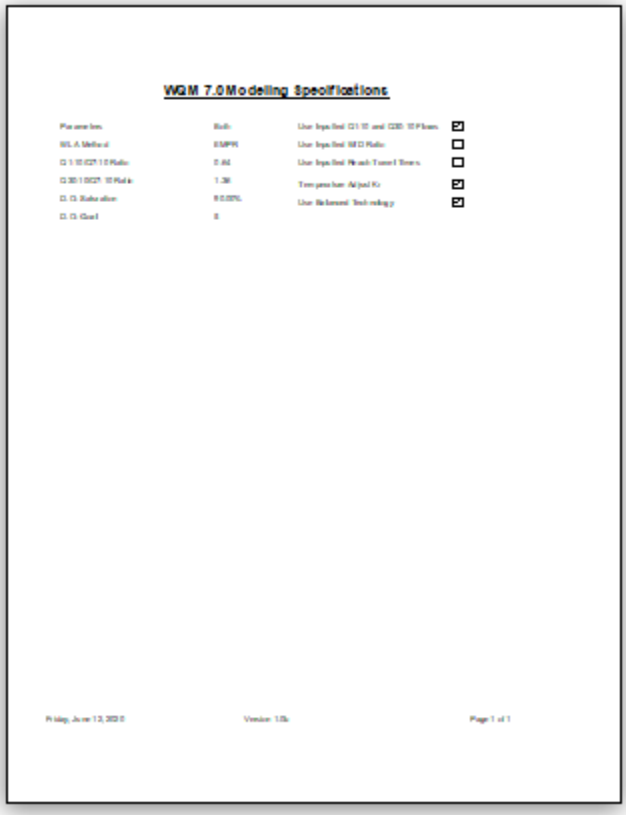

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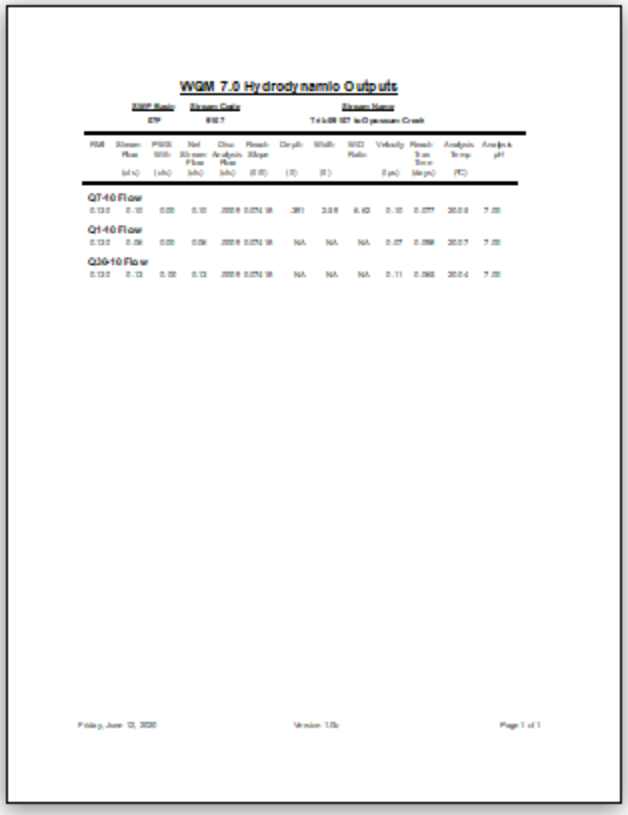
rptHydro



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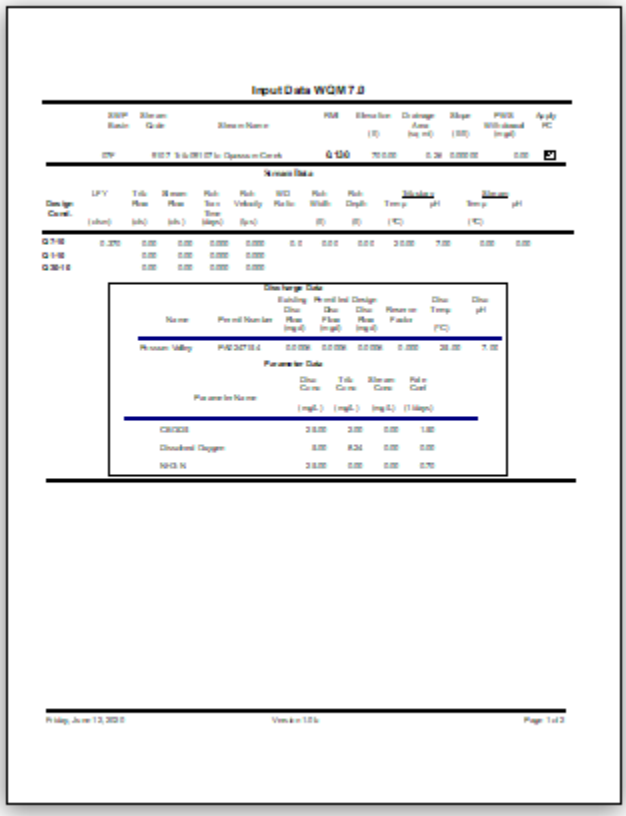
rptGeneral



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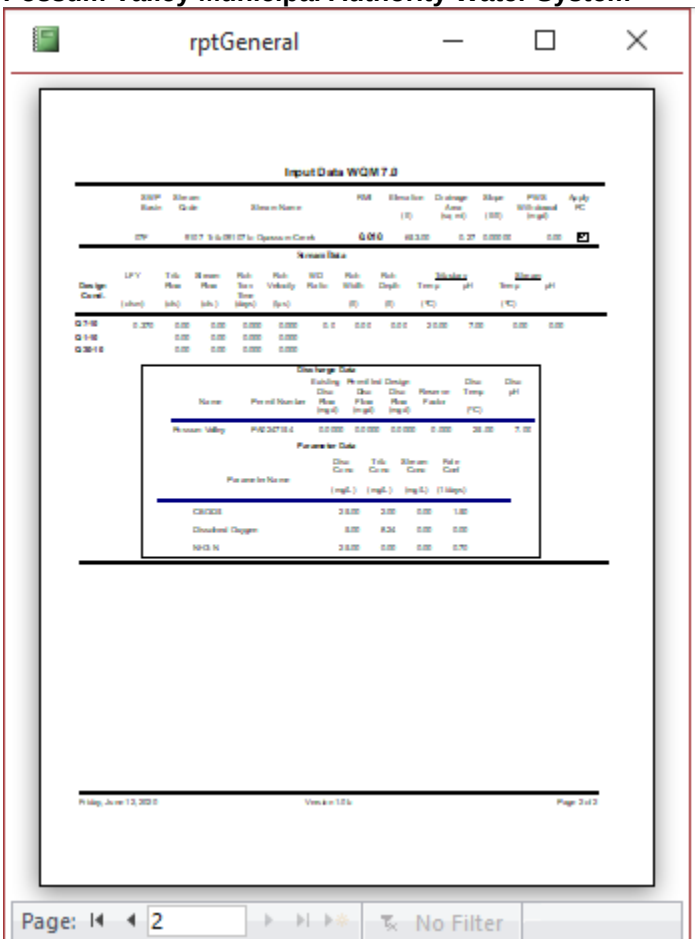
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