pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0020893**
Facility Type	**Municipal**	APS ID	**18317**
Major / Minor	**Major**	Authorization ID	**937210**

NPDES PERMIT FACT SHEET
RE-DRAFT

Applicant and Facility Information

Applicant Name	**Manheim Area Water and Sewer Authority**	Facility Name	**Manheim WWTP**
Applicant Address	18 E High Street	Facility Address	Rettew Lane
	Manheim, PA 17545-1506		Manheim, PA 17545
Applicant Contact	Terry Shaffer	Facility Contact	Terry Shaffer
Applicant Phone	(717) 665-2737	Facility Phone	(717) 665-2737
Client ID	317228	Site ID	451759
Ch 94 Load Status	Not Overloaded	Municipality	Manheim Borough
Connection Status	No Limitations	County	Lancaster
Date Application Received	August 2, 2012	EPA Waived?	No
Date Application Accepted	August 10, 2012	If No, Reason	Major Facility, Significant CB Discharge

Purpose of Application: NPDES Renewal.

Summary of Review

A draft NPDES permit was issued on October 16, 2020, and was published in the PA Bulletin on October 31, 2020. Comments were received from the Environmental Protection Agency (EPA) Region III on November 16, 2020, and from Spotts, Stevens and McCoy on behalf of Manheim Area Water and Sewer Authority on December 1, 2020. Copies of the comments are included at the end of this fact sheet. EPA offered the following comments:

1. Part C of the permit appears to be missing the language regarding the Chiques Creek Alternate Restoration efforts referenced in the fact sheet.

In response, the Chiques Creek Part C language has been added to the NPDES permit re-draft.

In response to Spotts, Stevens and McCoy's comments, DEP offers the following:

1. Part A-I.A of the draft NPDES contained more stringent limits for TRC, $CBOD_5$, NH_3-N, and contained monitoring requirements for Total Copper and Total Iron. Manheim had concerns about meeting the more stringent TRC limit within the proposed 3 year period, and requested an extension to this requirement. The draft NPDES Permit has been revised to include a 4.5 year period to meet the new limit in the absence of site-specific studies. For the remaining parameters, Manheim requested additional information on the water quality data used in the WQM and PENTOXSD models. The stream temperature, pH, and hardness values used were based on data from Chiques Creek from 2005-2019. Manheim requested a comparison of the results using this data to results using only the more recent data, to account for any improvements to the water quality. The model WQM 7.0 Ver 1.1 was run using 90th percentile data from Chiques Creek for the period of 2011-2020. The analysis is described below, and the model

Approve	Deny	Signatures	Date
X		Benjamin R. Lockwood Benjamin R. Lockwood / Environmental Engineering Specialist	December 9, 2021
X		Maria D. Bebenek for Daniel W. Martin, P.E. / Environmental Engineer Manager	December 14, 2021
X		Maria D. Bebenek Maria D. Bebenek, P.E. / Program Manager	December 14, 2021

Summary of Review

results are attached to the end of the fact sheet. A revised toxics analysis was performed using DEP's Toxic Management Spreadsheet and the modified pH and hardness values. The TMS identified Total Aluminum, Total Copper, Total Iron, Dissolved Iron, and Total Zinc as parameters requiring monitoring. This analysis is described in the fact sheet below, and the TMS results are attached. As a result, these parameters have been added to the draft permit with a 1/quarter monitoring requirement to ensure enough data is gathered for future analysis during the next permit renewal.

2. Manheim requested clarification on the hauled-in municipal waste language found in Part A III.C of the NPDES Permit. The Hauled In Municipal Wastes Form (3800-FM-BCW0437) requires BOD_5 testing for septage and sludge on a daily basis. A copy of this form has been attached to the fact sheet for reference.

3. Part A I.C of the draft NPDES Permit includes the separation of the TN Offsets from the Total Nitrogen Cap Load. Manheim requested these Offsets be returned to the Cap Load, and requested the ability to quantify and apply for additional offsets for residential septage that is hauled-in to the WWTP. As detailed in DEP's Phase 3 Watershed Implementation Plan Supplement, during the initial round of permitting for the Chesapeake Bay TMDL, several facilities had TN offsets mistakenly incorporated into their WLAs. The Phase 3 Supplement states that from this point forward, permits will be issued with the WLAs as Cap Loads and Offsets will be identified separately. The Offsets can still be used to facilitate nutrient trading activities and compliance with the TMDL, they will just not be available to be registered as credits. This is consistent with the definition of offsets in PA Code § 96.8 (a), and is consistent with how offsets have been handled at similar facilities. Therefore, the draft NPDES Permit will keep the identified offsets separate from the TN Cap Load. Additionally, the Phase 3 Supplement allows for the approval of 3 lbs of TN offsets per 1000 gallons of septage accepted from municipal sources within the municipal Act 537 planning area. Manheim may provide documentation of the receipt of hauled-in septage using the standard Hauled-In Municipal Waste form. Manheim can request approval of these offsets throughout the permit term for the Compliance Year in which the septage was received. The application of these offsets must be approved by DEP in writing.

4. Manheim requested clarification on WET testing requirements included in Part C of the draft NPDES permit. The updated WET testing language was used in the draft NPDES Permit due to the addition of WET limits for the failure that occurred on 11/9/2012. As the failure occurred almost 10 years ago, and no re-testing occurred at the time, the Part C WET language has been modified in the draft NPDES to require a test within the first 30 days of permit issuance, and then annually with a passing first test.

Additionally, PA Code § 92a.61 now requires IMAX reporting of E. Coli. Per DEP's SOP No. BCW-PMT-033, sewage dischargers with a design flow of >= 1 mgd will include E. Coli monitoring with a frequency of 1/month. This parameter has been added to the draft NPDES Permit. The updated limits table is shown below.

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.

Development of Effluent Limitations

Outfall No.	001	**Design Flow (MGD)**	2.3
Latitude	40º 9' 9.6"	**Longitude**	76º 24' 16.3"
Wastewater Description:	Sewage Effluent		

CBOD$_5$ & NH$_3$-N

WQM 7.0 Ver 1.1 was used to determine effluent limits for CBOD$_5$ and NH$_3$-N. Flow data used to run this model was acquired from USGS PA StreamStats and USGS Gage #01576500 on the Conestoga River. Stream pH and temperature inputs used in the model were taken from the National Water Quality Monitoring Council website. Data was analyzed from the Water Quality Network (WQN) Station ID 206 on Chiques Creek from 2011-2020 in an attempt to use more recent stream data than was used in the previous draft permit. DEP's Standard Operating Procedure (SOP) No. BCW-PMT-033 (Establishing Effluent Limitations for Individual Sewage Permits) recommends using the 90th percentile of long-term data for background and discharge characteristics when using WQM 7.0. A 90th percentile analysis was performed on the data and resulted in a Stream pH of 7.28 and a Stream Temperature of 21°C.The model output indicated a CBOD$_5$ average monthly limit of 13.79 mg/l, an NH$_3$-N average monthly limit of 3.99 mg/l, and a D.O. minimum limit of 5.0 mg/l were protective of water quality. These limits were rounded in accordance with DEP's Guidance 362-0400-001 "Technical Guidance for the Development and Specification of Effluent Limitations" to a CBOD$_5$ average monthly limit of 13.5 mg/l, and an NH$_3$-N average monthly limit of 4.0 mg/l. The CBOD$_5$ limit is more stringent than was included in the previous draft permit, but the NH$_3$-N is less stringent. These limits have been included in the new draft NPDES permit, and the mass limits have been adjusted accordingly.

Toxics

Effluent sample results for toxic pollutants reported on the renewal application were entered into DEP's Toxics Management Spreadsheet Version 1.3 to develop appropriate permit requirements for toxic pollutants of concern. The Toxics Management Spreadsheet combines the functions of PENTOXSD and DEP's Toxics Screening Analysis; this Spreadsheet is now used in place of PENTOXSD. Stream pH and hardness inputs for this model run were based on data acquired from the National Water Quality Monitoring Council website. Data was analyzed from the WQN Station ID 206 on Chiques Creek from 2011-2020 for pH and hardness. A 90th percentile analysis was performed on the data, which provided a stream pH of 7.28 and stream hardness of 250.1 mg/l. These values were input into the TMS, which recommended a monitoring requirement for Total Aluminum, Total Copper, Dissolved Iron, Total Iron, and Total Zinc.

The toxics data was analyzed based on the guidelines found in DEP's Water Quality Toxics Management Strategy (No. 361-0100-003) and DEP's SOP No. BCW-PMT-033. The TMS results are attached to this fact sheet. The TMS uses the following logic:

a. Establish average monthly and instantaneous maximum (IMAX) limits in the draft permit where the maximum reported concentration exceeds 50% of the WQBEL.
b. For non-conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 25% - 50% of the WQBEL.
c. For conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 10%-50% of the WQBEL.

Since the reported maximum concentrations for these parameters were greater than 10% of its respective WQBEL, per DEP's SOP No. BPNPSM-PMT-033, monitoring will be required. To ensure there is sufficient data for the subsequent permit application review to verify reasonable potential, a monitoring frequency of 1/quarter will be used.

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 Phase 1.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	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
TRC	XXX	XXX	XXX	0.46	XXX	1.5	1/day	Grab
CBOD5	258	383	XXX	13.5	20	27	2/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TSS	575	863	XXX	30	45	60	2/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/month	Grab
Ammonia Nov 1 - Apr 30	230	XXX	XXX	12	XXX	24	2/week	24-Hr Composite
Ammonia May 1 - Oct 31	76	XXX	XXX	4.0	XXX	8.0	2/week	24-Hr Composite
Total Phosphorus	38	XXX	XXX	2.0	XXX	4.0	2/week	24-Hr Composite

Outfall 001, Continued (from Permit Effective Date through Phase 1)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Copper	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/quarter	24-Hr Composite
Total Iron	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/quarter	24-Hr Composite
Dissolved Iron	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/quarter	24-Hr Composite
Total Aluminum	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/quarter	24-Hr Composite
Total Zinc	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/quarter	24-Hr Composite
Total Dissolved Solids	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Sulfate	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Chloride	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Bromide	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Chronic WET - Ceriodaphnia Survival (TUc)	XXX	XXX	XXX	XXX	2.2	XXX	See Permit	24-Hr Composite
Chronic WET - Ceriodaphnia Reproduction (TUc)	XXX	XXX	XXX	XXX	2.2	XXX	See Permit	24-Hr Composite

Compliance Sampling Location: Outfall 001

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: Phase 1 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	Weekly Average	Minimum	Average Monthly	Weekly Average	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
TRC	XXX	XXX	XXX	0.18	XXX	0.61	1/day	Grab
CBOD5	258	383	XXX	13.5	20	27	2/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TSS	575	863	XXX	30	45	60	2/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/month	Grab
Ammonia Nov 1 - Apr 30	230	XXX	XXX	12	XXX	24	2/week	24-Hr Composite
Ammonia May 1 - Oct 31	76	XXX	XXX	4.0	XXX	8.0	2/week	24-Hr Composite
Total Phosphorus	38	XXX	XXX	2.0	XXX	4.0	2/week	24-Hr Composite

Outfall 001, Continued (from Phase 1 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	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Copper	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/quarter	24-Hr Composite
Total Iron	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/quarter	24-Hr Composite
Dissolved Iron	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/quarter	24-Hr Composite
Total Aluminum	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/quarter	24-Hr Composite
Total Zinc	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/quarter	24-Hr Composite
Total Dissolved Solids	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Sulfate	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Chloride	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Bromide	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Chronic WET - Ceriodaphnia Survival (TUc)	XXX	XXX	XXX	XXX	2.2	XXX	See Permit	24-Hr Composite
Chronic WET - Ceriodaphnia Reproduction (TUc)	XXX	XXX	XXX	XXX	2.2	XXX	See Permit	24-Hr Composite

Compliance Sampling Location: Outfall 001

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, to comply with Pennsylvania's Chesapeake Bay Tributary Strategy.

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

Parameter	Effluent Limitations					Monitoring Requirements	
	Mass Units (lbs) (1)		Concentrations (mg/L)			Minimum (2) Measurement Frequency	Required Sample Type
	Monthly	Annual	Minimum	Monthly Average	Maximum		
Ammonia-N	Report	Report	XXX	Report	XXX	2/week	24-Hr Composite
Kjeldahl-N	Report	XXX	XXX	Report	XXX	2/week	24-Hr Composite
Nitrite-Nitrate as N	Report	XXX	XXX	Report	XXX	2/week	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	2/week	24-Hr Composite
Net Total Nitrogen	XXX	20,822	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	XXX	2,776	XXX	XXX	XXX	1/month	Calculation

Compliance Sampling Location: Outfall 001

Other Comments: On-lot disposal system offsets for TN are 1,025 lbs/year based on 41 EDUs. Any additional offsets claimed during the permit term must be reported as outlined in Part C of this permit.

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, 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:

COMMONWEALTH OF PENNSYLVANIA
pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

SUPPLEMENTAL REPORT – HAULED IN MUNICIPAL WASTES

Facility Name: Manheim STP
Municipality: Penn Township County: Lancaster
Watershed: 7-G

Month: _____ Year: _____
NPDES Permit No.: PA0020893
Renewal application due **180 days** prior to expiration
This permit will expire on

Day	SEPTAGE				SLUDGE				OTHER (specify):				DAILY TOTALS	
	Gallons	BOD_5 (mg/l)	BOD_5 (lbs)	Disposal Location	Gallons	BOD_5 (mg/l)	BOD_5 (lbs)	Disposal Location	Gallons	BOD_5 (mg/l)	BOD_5 (lbs)	Disposal Location	Gallons	BOD_5 (lbs)
1														
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Avg												Monthly Totals:		

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: _____ Signature: _____

Title: _____ Date: _____

Spotts, Stevens and McCoy
1047 N. Park Road > P.O. Box 6307 > Reading PA 19610-0307
610.621.2000 > F. 610.621.2001 > SSMGROUP.COM

SSM

November 23, 2020

US Priority Mail

Mr. Dan Martin
Permits Section
Clean Water Program
PA Department of Environmental Protection
Southcentral Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110

RE: **Manheim Area Water and Sewer Authority**
NPDES Permit Renewal (PA0020893)
SSM File 110090.2020

Dear Mr. Martin:

On behalf of our client, Manheim Area Water and Sewer Authority ("MAWSA"), Lancaster County, Pennsylvania, we are writing relative to the draft *NPDES Permit* for the MAWSA Wastewater Treatment Plant (WWTP), Permit No. PA0020893, recently received by the Authority. We appreciate the Department's review of the *NPDES Permit* renewal application.

We have reviewed the draft *Permit* conditions, and we are writing with regard to several proposed *Permit* conditions and requirements that are of concern, as identified below:

1. ***Part A-I.A*** – Provides *Permit* limits during the period from **Phase 1 through Permit Expiration**. The following requirement is most concerning to MAWSA:

   Total Residual Chlorine – the TRC concentration limitations have become much more stringent, with the average monthly concentration requirement being reduced to 0.18 mg/l, and the instantaneous maximum being reduced to 0.61 mg/l. The Total Residual Chlorine concentration requirements are the most concerning modification to the Permit, as these limitations have been drastically reduced (by over 60%) from the existing NPDES Permit limits. Additionally, this limit reduction is not the result of any proposed, significant modifications, upgrades or expansions to the WWTP, which would justify the proposed limit reduction.

   Although the WWTP is currently meeting Permit limits for Total Residual Chlorine, there is no certainty that the current TRC removal rates can continue to be met in the event of flow increases, or influent quality fluctuations. MAWSA feels that this requirement places them in a precarious position and that there would be an additional financial burden on MAWSA's customers in the future should flows increase. The proposed compliance schedule provided in the NPDES Fact Sheet states that, if MAWSA decides not to conduct a site-specific study, it will need to meet these Permit limitations for TRC within three (3) years following the Permit Effective Date.

As stated in the Permit Fact Sheet provided with the Draft NPDES Permit, the Department utilized the calculations presented in the Implementation Guidance for Total Residual Chlorine (TRC) to develop the chlorine limitations. The Guidance establishes a standard BAT limit of 0.5 mg/l unless a facility-specific BAT has been developed. The Permit Fact Sheet further indicates that a water quality limit of 0.18 mg/l would be needed "to prevent toxicity concerns." There are no other specific details relative to the "toxicity" of the TRC, or the concerns posed to the environment.

Also, the Fact Sheet states that the Department recognizes that, based on historical reporting data, MAWSA's WWTP is "not capable of meeting these stringent limits" under its current condition and that technology-based limits provide for a TRC concentration of 0.50 mg/L. These new, much more stringent, limitations cannot currently be met without chemical addition or the construction of other improvements to the WWTP. It will take considerable time to research and implement options, including the design and permitting of WWTP upgrades in order to comply with these new limitations.

MAWSA has serious concerns about the ability to meet these new TRC Permit limitations within the proposed, three (3) year interim Permit period. Design and permitting alone could take two (2) or more years, with an additional 12-18 months for construction (due to the current availability and lead-time of equipment). This time frame has increased significantly within the past year due to the global pandemic. We are respectfully requesting flexibility and an extension to this requirement in order to allow MAWSA to research and implement TRC control options, as well as consider possible UV disinfection options.

$CBOD_5$ – the average monthly requirement has been reduced from 25 mg/l to 16 mg/l; the average weekly requirement has been reduced from 40 mg/l to 24 mg/l; and the instantaneous maximum requirement has been reduced from 50 mg/l to 32 mg/l. This is due to the findings from Water Quality Modeling conducted by PA DEP, which provided technical methods for determining wasteload allocations and recommended NPDES effluent limits for point source discharges. MAWSA currently feels that it can meet these proposed limitations. However, we respectfully request an explanation as to why 1998 through 2019 water quality data was utilized in this analysis, and was it determined if water quality has improved in the last 10 years due to the Chesapeake Bay initiatives adopted in more recent years. Has this study been conducted and compared to the period of 1998 through 2005?

Ammonia – the average monthly requirement has been reduced from 12 to 7.5 mg/l, and the instantaneous maximum has been reduced from 24 to 15 mg/l (for the period of November 1st to April 30th). Also, the average monthly requirement has been reduced from 4.0 to 2.5 mg/l, and the instantaneous maximum has been reduced from 8.0 to 5.0 mg/l (for the period of May 1st to October 31st). Again, we respectfully request an explanation if this study compared the use of long-term monitoring to the monitoring from the last 10 years when considering 90th percentile water quality data. At this time, MAWSA feels that it can meet these proposed limitations.

Total Copper and Total Iron – MAWSA has concerns about the addition of Total Copper and Total Iron monitoring and the implications of this monitoring. We are requesting further information in regard to the flow rate and stream hardness values utilized in the PENTOXSD modeling. The stream hardness, again, is based on long-term data form 1998 through 2019. Has a separate analysis been conducted utilizing the more recent stream hardness values (i.e. for the last 5 to 10 years) versus the long-term data for hardness? If so, what are the results of this analysis?

2. ***Part A-III.C*** – Provides requirements for reporting and notification. The Authority is requesting clarification for the following requirement:

   Permittee must report hauled-in municipal wastes on a monthly basis to DEP on the "Hauled-In Municipal Wastes" Supplemental Report form as an attachment to the DMR. This Report must include the BOD5 concentration (mg/l) and load (lbs) for wastes received.

   The Authority does not currently test the BOD_5 concentration for the municipal hauled-in wastes. Does this requirement apply to <u>every</u> load that is hauled-in to the sewage treatment plant, or is this to be conducted on a daily basis, or is another monitoring frequency required for BOD_5 concentration of hauled-in wastes?

3. ***Part C-I*** – the Department has removed nutrient Offsets that the Authority had previously accumulated. The existing Permit includes a list of 41 on-lot disposal systems (OLDS) which were installed prior to 2003 and which increased MAWSA's CAP Load by 1,025 lbs/year of TN. According to the proposed Permit, the proposed effluent limits will contain a net total nitrogen limit of 20,822 lbs/year to reflect the CAP loads. MAWSA respectfully requests the return of these Offsets. Also, we are respectfully requesting that the Department provide an explanation and the basis for the proposed language (and the removal of this credit), for our clarity. Additionally, MAWSA is requesting the opportunity to quantify and apply additional Offsets for the residential septage that is hauled-in to the WWTP. Will the 3 lbs of TN Offsets per year still be approved per 1,000 gallons of residential septage and will the standard form for Offsets apply?

4. ***Part C-III – Whole Effluent Toxicity (WET Testing)***
   The Permit contains a requirement to conduct Quarterly WET Testing, beginning within 30 days of the permit effective date. Is the Quarterly WET Testing requirement a direct result of the failure of one (1) of the four (4) required WET Tests conducted during the 2012 NPDES Renewal period? Was MAWSA given the opportunity to conduct a re-test at that time in order to verify the results? These results were from over eight (8) years ago, and is likely no longer representative of current conditions at the WWTP. Is the Department willing to forego the Quarterly sampling in Year 1 in the event that the initial WET Testing is a passing result?

We thank you for the opportunity to present our concerns relative to this draft Permit, and we would greatly appreciate your consideration in this matter. Please contact us should you have any questions or require any additional information.

Sincerely,
Spotts, Stevens and McCoy

Jamie D Lorah

Jamie D. Lorah, P.E.
Manager, Process Engineering
jamie.lorah@ssmgroup.com

Enclosures

cc: Manheim Area Water and Sewer Authority
Martin Siegel, Esq., Barley Snyder

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
07G	7919	CHICKIES CREEK	**19.100**	379.00	36.20	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	0.100	0.00	4.34	0.000	0.000	0.0	0.00	0.00	20.00	7.00	21.00	7.28
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
Manheim STP	PA0020893	2.3000	2.3000	2.3000	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	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	25.00	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
07G	7919	CHICKIES CREEK	13.960	349.00	41.90	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	0.100	0.00	5.03	0.000	0.000	0.0	0.00	0.00	20.00	7.00	21.00	7.28
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	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	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
07G	7919	CHICKIES 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												
19.100	4.34	0.00	4.34	3.5581	0.00111	.728	40.51	55.63	0.27	1.173	22.80	7.13
Q1-10 Flow												
19.100	2.78	0.00	2.78	3.5581	0.00111	NA	NA	NA	0.24	1.327	23.25	7.10
Q30-10 Flow												
19.100	5.90	0.00	5.90	3.5581	0.00111	NA	NA	NA	0.30	1.060	22.50	7.15

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	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	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
07G	7919	CHICKIES 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
19.100	Manheim STP	11.64	20.73	11.64	20.73	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
19.100	Manheim STP	1.5	3.99	1.5	3.99	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)		
19.10	Manheim STP	13.79	13.79	3.99	3.99	5	5	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07G	7919	CHICKIES CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
19.100	2.300	22.602	7.131
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
40.509	0.728	55.626	0.268
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
7.31	0.629	1.60	0.868
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.782	3.005	Tsivoglou	5
Reach Travel Time (days)			
1.173			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.117	6.72	1.62	5.94
0.235	6.18	1.47	5.48
0.352	5.68	1.32	5.26
0.469	5.23	1.20	5.21
0.587	4.81	1.08	5.28
0.704	4.42	0.98	5.40
0.821	4.06	0.88	5.57
0.939	3.74	0.80	5.76
1.056	3.44	0.72	5.96
1.173	3.16	0.65	6.16

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
07G	7919	CHICKIES CREEK

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
19.100	Manheim STP	PA0020893	2.300	CBOD5	13.79		
				NH3-N	3.99	7.98	
				Dissolved Oxygen			5

Discharge Information

Instructions | Discharge | Stream

Facility: Manheim Borough Authority NPDES Permit No.: PA0020893 Outfall No.: 001

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: Sewage Effluent

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
2.3	275	7.618						

					0 if left blank		0.6 if left blank		0 if left blank			1 if left blank	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		671000									
	Chloride (PWS)	mg/L											
	Bromide	mg/L											
	Sulfate (PWS)	mg/L											
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L		150									
	Total Antimony	µg/L											
	Total Arsenic	µg/L											
	Total Barium	µg/L		20									
	Total Beryllium	µg/L											
	Total Boron	µg/L		240									
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L											
	Total Copper	µg/L		12									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L		68									
	Total Iron	µg/L		940									
	Total Lead	µg/L											
	Total Manganese	µg/L		15									
	Total Mercury	µg/L											
	Total Nickel	µg/L											
	Total Phenols (Phenolics) (PWS)	µg/L											
	Total Selenium	µg/L											
	Total Silver	µg/L											
	Total Thallium	µg/L											
	Total Zinc	µg/L		51									
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

Stream / Surface Water Information

Manheim Borough Authority, NPDES Permit No. PA0020893, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: _____ No. Reaches to Model: 1

- (●) Statewide Criteria
- ( ) Great Lakes Criteria
- ( ) ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	007919	19.1	379	36.2			Yes
End of Reach 1	007919	13.96	349	41.9			Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	19.1	0.1	4.34									250.1	7.28		
End of Reach 1	13.96	0.1	5.03									250.1	7.28		

Q_h

Location	RMI	LFY (cfs/mi²)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	19.1														
End of Reach 1	13.96														

Model Results

Manheim Borough Authority, NPDES Permit No. PA0020893, Outfall 001

Instructions | Results | RETURN TO INPUTS | SAVE AS PDF | PRINT | (•) All ( ) Inputs ( ) Results ( ) Limits

☐ *Hydrodynamics*

☑ *Wasteload Allocations*

☑ *AFC* CCT (min): 15 PMF: 0.676 Analysis Hardness (mg/l): 263.75 Analysis pH: 7.43

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	1,368	
Total Barium	0	0		0	21,000	21,000	38,304	
Total Boron	0	0		0	8,100	8,100	14,774	
Total Copper	0	0		0	33.514	34.9	63.7	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	266.522	273	497	Chem Translator of 0.978 applied

☑ *CFC* CCT (min): 32.870 PMF: 1 Analysis Hardness (mg/l): 261.32 Analysis pH: 7.40

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	4,100	4,100	9,101	
Total Boron	0	0		0	1,600	1,600	3,552	
Total Copper	0	0		0	20.350	21.2	47.1	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	3,330	WQC = 30 day average; PMF = 1
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	266.600	270	600	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 32.870 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	2,400	2,400	5,327	
Total Boron	0	0		0	3,100	3,100	6,881	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	300	300	666	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	2,220	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ *CRL* CCT (min): 34.885 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***Recommended WQBELs & Monitoring Requirements***

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Aluminum	Report	Report	Report	Report	Report	µg/L	877	AFC	Discharge Conc > 10% WQBEL (no RP)

Total Copper	Report	Report	Report	Report	Report	µg/L	40.8	AFC	Discharge Conc > 10% WQBEL (no RP)
Dissolved Iron	Report	Report	Report	Report	Report	µg/L	666	THH	Discharge Conc > 10% WQBEL (no RP)
Total Iron	Report	Report	Report	Report	Report	µg/L	3,330	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	319	AFC	Discharge Conc > 10% WQBEL (no RP)

☑ ***Other Pollutants without Limits or Monitoring***

The following pollutants do not require effluent limits or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the discharge concentration was less than thresholds for monitoring, or the pollutant was not detected and a sufficiently sensitive analytical method was used (e.g., <= Target QL).

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Total Barium	5,327	µg/L	Discharge Conc ≤ 10% WQBEL
Total Boron	3,552	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	2,220	µg/L	Discharge Conc ≤ 10% WQBEL