pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SOUTHCENTRAL REGIONAL OFFICE
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0055328**
Facility Type	**Industrial**	APS ID	**3989**
Major / Minor	**Minor**	Authorization ID	**1304847**

NPDES PERMIT FACT SHEET ADDENDUM

Applicant and Facility Information

Applicant Name	**New Morgan Landfill Co. Inc.**	Facility Name	**Conestoga Landfill**
Applicant Address	PO Box 128 420 Quarry Road	Facility Address	420 Quarry Road
	Morgantown, PA 19543-0128		Morgantown, PA 19543-0128
Applicant Contact	Randy Deardorff	Facility Contact	Randy Deardorff
Applicant Phone	(717) 246-4620	Facility Phone	(717) 246-4620
Client ID	55716	Site ID	505264
SIC Code	4953	Municipality	New Morgan Borough
SIC Description	Trans. & Utilities - Refuse Systems	County	Berks
Date Published in PA Bulletin	January 1, 2022	EPA Waived?	No
Comment Period End Date	February 1, 2022	If No, Reason	
Purpose of Application	NPDES Renewal.		

Internal Review and Recommendations

A draft permit was prepared on December 9, 2021 and published in the *Pennsylvania Bulletin* on January 1, 2022 for public comments for 30 days. US EPA has provided a draft permit comment via email dated January 6, 2022. DEP responded the comment via email on January 7, 2022. US EPA then indicated that the agency has no further comments. The permittee has provided draft permit comments via letter dated January 21, 2022 along with its addendums dated February 17, 2022 and March 16, 2022. In response to these documentations as well as conference calls dated February 4, 2022, March 2, 2022 and March 11, 2022, DEP has determined to address the comments as follows:

1. Type of Effluent for Outfall 001 will remain as “IW process effluent with ELG & Sewage” as the term IW process effluent with ELG covers all industrial wastewater identified in the application. The page 2 of the original fact sheet dated November 7, 2021 has been revised to identify types of industrial wastewater. The revised page will be attached to this fact sheet addendum.

2. The sampling location description on page 10 of the draft permit has changed from “at Outfall 001” to “At discharge from the treatment plant, except for Dissolved Oxygen which may be sampled at the lift station located after the treatment plant and along the landfill entrance road” as requested by the permittee.

3. Based on the information provided by the permittee, DEP has determined to use a different method to determine low flow statistics. In general, DEP uses USGS StreamStats available at https://streamstats.usgs.gov/ss/ unless a gage station is nearby the discharge point or technical errors occurred from USGS StreamStats to calculate low flow statistics. USGS StreamStats produced a Q7-10 with no indication of such technical errors; however, USGS StreamStats estimated 4.9 ft. as depth to rock basin characteristic. The permittee based on actual site specific data demonstrated that this value is not accurate and is much shallower than the actual measurements taken previously. Also, the basin drainage area as well as Urban Area Percentage used in regression equations by USGS StreamStats are slightly inaccurate compared to the actual representation of basin characteristics. Based on this, the permittee

Approve	Return	Deny	Signatures	Date
X			*Jinsu Kim* Jinsu Kim / Environmental Engineering Specialist	March 16, 2022
x			*Maria D. Bebenek for* Daniel W. Martin, P.E. / Environmental Engineer Manager	March 17, 2022
x			*Maria D. Bebenek* Maria D. Bebenek, P.E. / Program Manager	March 17, 2022

Internal Review and Recommendations

suggested a Q7-10 of 1 cfs to be used in a water quality analysis that is based on the depth to bedrock ratio of 5.21 ft, the urban area of 14.39%, the drainage area of 6.73 sq.mi. The depth to bedrock ratio of 5.21 ft. is not still representative of actual site conditions; however, the permittee indicated that this value is the maximum value allowed by USGS StreamStats and thus would represent the most conservative value to be used in regression equations. DEP initially disagreed with this approach as the actual depth to bedrock is well above 10 ft. within the basin area. However, DEP ultimately determined that using this value is acceptable as USGS StreamStats is the standard method that DEP uses to estimate the Q7-10 and DEP agreed that the ratio of 5.21 ft. is the most conservative value. Consequently, a water quality analysis has been reperformed based on a Q7-10 of 1.0 cfs as well as TOXCONC analysis provided by the permittee for Total Antimony, Total Arsenic, and Total Zinc. Based on the results, the changes made to the draft permit requirements are summarized below:

Parameters	Change / Recommendation
Total Antimony	TOXCON analysis based on 100 sample datasets collected between November 2019 and October 2021 which are considered new information not available at the time of review during the last permit renewal (40 CFR § 122.44(l)(2)(i)(B)(1)) produced the statistical average monthly concentration with a daily coefficient of variation. These values were then entered into TMS and the TMS showed no effluent limits are needed but still recommended monitoring for this pollutant. During a conference call dated March 2, 2022, the permittee indicated that there is currently no treatment system implemented to remove Total Antimony; therefore, it seems influent concentration level is likely the same as the effluent concentration level. No RP is determined for both influent and effluent. Existing effluent limits will therefore be removed from the permit and monitoring-only requirement will replace these limits.
Total Arsenic	TOXCON analysis based on 100 sample datasets collected between November 2019 and October 2021 which are considered new information not available at the time of review during the last permit renewal (40 CFR § 122.44(l)(2)(i)(B)(1)) produced the statistical average monthly concentration with a daily coefficient of variation. These values were then entered into TMS and the TMS showed no effluent limits are needed but still recommended monitoring for this pollutant. During a conference call dated March 2, 2022, the permittee indicated that there is currently treatment system implemented to remove Total Arsenic. DEP generally will maintain existing WQBELs when the treatment system has been implemented to remove pollutants. During the call, DEP acknowledged that when ample influent samples (most likely 1 to 2 year worth of samples) are collected and the permittee can demonstrate that no Reasonable Potential (RP) is determined based on influent sample results, the permittee may ask the permit be amended during the permit term to replace existing WQBELs with monitoring-only requirements. Until then, DEP expressed during the call that existing effluent limits need to be included in the permit. Therefore, existing effluent limits which are slightly less stringent than those proposed in the December 9, 2021 draft permit will continue to be included in the permit.
Total Boron	The proposed effluent limits have been changed from 9.32 mg/L to 15.4 mg/L (average monthly), 14.5 mg/L to 24.0 mg/L (daily maximum), and 23.3 mg/L to 38.5 mg/L (IMAX) as a result of the modified Q7-10 as well as the modified drainage area. In the draft permit comment letter addendum dated March 16, 2022, the permittee requested a minimum of one-year interim monitoring period prior to these effluent limits become effective as the facility has limited data. According to the March 16, 2022 letter, the permittee will be able to observe seasonal variations and the range of concentration levels during this monitoring period. Also, a source investigation as well as evaluations will be performed during this monitoring period to possibly reduce or eliminate the source(s) or to utilize the treatment system to achieve compliance with proposed effluent limits. Based on this information, DEP has agreed to provide one-year interim monitoring period. During the March 2, 2022 call, DEP expressed that in case this interim monitoring period needs to be extended further (only because a major modification to the facility is required), the permittee may request the permit be amended during the permit term.
Total Copper	The proposed effluent limits have been changed from 0.12 mg/L to 0.18 mg/L (average monthly), 0.23 mg/L to 0.33 mg/L (daily maximum), and 0.31 mg/L to 0.45 mg/L (IMAX) as a result of the modified Q7-10 as well as the modified drainage area.

Internal Review and Recommendations

	In the draft permit comment letter addendum dated March 16, 2022, the permittee requested a minimum of one-year interim monitoring period prior to these effluent limits become effective as the facility has limited data. According to the March 16, 2022 letter, the permittee will be able to observe seasonal variations and the range of concentration levels during this monitoring period. Also, a source investigation as well as evaluations will be performed during this monitoring period to possibly reduce or eliminate the source(s) or to utilize the treatment system to achieve compliance with proposed effluent limits. Based on this information, DEP has agreed to provide one-year interim monitoring period. During the March 2, 2022 call, DEP expressed that in case this interim monitoring period needs to be extended further (only because a major modification to the facility is required), the permittee may request the permit be amended during the permit term.
Dissolved Iron	The proposed effluent limits will be replaced with monitoring-only requirements as a result of the modified Q7-10 as well as the modified drainage area.
Total Selenium	The proposed effluent limits will be replaced with monitoring-only requirements as a result of the modified Q7-10 as well as the modified drainage area.
Hexavalent Chromium	The existing monitoring-only requirement will be removed from the permit as a result of the modified Q7-10 as well as the modified drainage area. This approach is supported by 40 CFR § 122.44(l)(2)(i)(B)(1).
Total Iron	The existing monitoring-only requirement will be removed from the permit as a result of the modified Q7-10 as well as the modified drainage area. This approach is supported by 40 CFR § 122.44(l)(2)(i)(B)(1).

Based on those changes mentioned above, a revision to the draft permit is needed. No changes will be made to other parameters. This revised draft permit will once again be published in the *Pennsylvania Bulletin* for another 30 days. All comments/response documents along with water quality analysis will be attached to this fact sheet addendum.

Attachments

1. US EPA Comments/Response

Kim, Jin Su

From:	Blanco-Gonzalez, Joel <Blanco-Gonzalez.Joel@epa.gov>
Sent:	Monday, January 10, 2022 9:41 AM
To:	Kim, Jin Su
Cc:	Furjanic, Sean; Schumack, Maria; Martin, Daniel; Fulton, Jennifer; Martinsen, Jessica; Hales, Dana
Subject:	RE: [External] PA0055328 New Morgan Landfill Company Inc.

Good morning Jin Su,

Thank you for replying to our message. Based on the information PADEP provided, it is our understanding that the BMPs listed below are applicable to this facility. Therefore, we will not be providing any additional comment to the issuance of this draft permit. Please let us know whether PADEP understands otherwise.

If for any reason, the draft permit is modified from the version that was submitted to EPA on December 10, 2021, as provided in the MOA, PADEP is to submit a copy of the new draft permit for EPA review before issuance of a final permit. Should you have any questions, please contact

Should you have any questions regarding this matter, please contact me.

Respectfully,

Joel

Joel Blanco-González
U.S. EPA Region III (Mid-Atlantic)
(215) 814-2768

From: Kim, Jin Su <jikim@pa.gov>
Sent: Friday, January 07, 2022 11:05 AM
To: Fulton, Jennifer <Fulton.Jennifer@epa.gov>
Cc: sefurjanic@pa.gov; Schumack, Maria <maschumack@pa.gov>; Martin, Daniel <danielmarti@pa.gov>; Martinsen, Jessica <Martinsen.Jessica@epa.gov>; Hales, Dana <Hales.Dana@epa.gov>; Blanco-Gonzalez, Joel <Blanco-Gonzalez.Joel@epa.gov>
Subject: RE: [External] PA0055328 New Morgan Landfill Company Inc.

Hello,

Thanks for your comments. The Department has decided not to change the condition proposed in the draft permit that requires the permittee to implement the BMPs listed in the latest NPDES PAG-03 General Permit for stormwater discharge associated within industrial activities (PAG03). The Department believes that specifying the BMPs listed in the current PAG03 may prevent the facility from implementing any additional BMPs that may newly be included in any subsequently issued PAG03. It is reasonable to maintain this condition in the permit to address all available BMPs that are applicable to this facility.
Please let me know if you have any questions or need further clarification on this matter.
Thanks,

1

Jinsu

Jinsu Kim | Permits Section
Department of Environmental Protection | Clean Water Program
Southcentral Regional Office
909 Elmerton Avenue | Harrisburg, Pa 17110-8200
Phone: 717.705.4825 | Fax: 717.705.4760
www.dep.state.pa.us

From: Fulton, Jennifer <Fulton.Jennifer@epa.gov>
Sent: Thursday, January 6, 2022 3:05 PM
To: Kim, Jin Su <jikim@pa.gov>
Cc: Furjanic, Sean <sefurjanic@pa.gov>; Schumack, Maria <maschumack@pa.gov>; Martin, Daniel <daniemarti@pa.gov>; Martinsen, Jessica <martinsen.jessica@epa.gov>; Hales, Dana <Hales.Dana@epa.gov>; Blanco-Gonzalez, Joel <blanco-gonzalez.joel@epa.gov>
Subject: [External] PA0055328 New Morgan Landfill Company Inc.

ATTENTION: *This email message is from an external sender. Do not open links or attachments from unknown sources. To report suspicious email, forward the message as an attachment to CWOPA_SPAM@pa.gov.*

Hello Jin Su,

According to the Memorandum of Agreement (MOA) between the U.S. Environmental Protection Agency Region III (EPA) and the Pennsylvania Department of Environmental Protection (PADEP), the EPA is reviewing a draft National Pollutant Discharge Elimination System (NPDES) Concentrated Animal Feeding Operation (CAFO) permit for:

Draft Permit: New Morgan Landfill Company Inc.
Also known as: Conestoga Landfill
NPDES Number: PA0055328
EPA-received: December 10, 2021
30-day Response: January 9, 2022

Thank you for our January 6, 2022 phone conversation about this draft permit. EPA has chosen to perform a limited review of the draft permit based on the stormwater requirements. As a result of our limited review, we offer the following comments related to the stormwater requirements.

The draft permit did not include the sector-specific best management practices (BMPs) set forth in Appendix C.IV. of the PADEP NPDES general permit for discharges of stormwater associated with industrial activity (PAG-03). These BMPs contain requirements, practices, and recommendations for discharges of stormwater associated with landfills.

PADEP has used PAG-03 as template and guidance to develop requirements for discharges of stormwater in individual permits. Per the fact sheet, draft permit, and our phone conversation, PADEP used PAG-03 to develop this draft permit and also incorporated PAG-03 by reference into this draft permit. However, this draft permit did not require the specific BMPs that shall be implemented per PAG-03.

EPA recommends PADEP consider requiring the specific BMPs that shall be implemented per PAG-03 in this draft permit. Below, please find an excerpt of PAG-03, including these BMPs for your consideration.

2

APPENDIX C LANDFILLS AND LAND APPLICATION SITES

IV. SECTOR-SPECIFIC BMPs

In addition to the BMPs contained in Part C II of the General Permit, the permittee shall implement, at a minimum, all of the following BMPs that are applicable to the processes in place at the facility for which coverage under this General Permit is approved.

A. The permittee shall implement a preventive maintenance program and shall maintain all elements of leachate collection and treatment systems, to prevent commingling of leachate with stormwater, and the integrity and effectiveness of any intermediate or final cover (including repairing the cover as necessary), to minimize the effects of settlement, sinking, and erosion.

B. Provide temporary stabilization (e.g., temporary seeding, mulching, and placing geotextiles on the inactive portions of stockpiles) for the following in order to minimize discharges of pollutants in stormwater: materials stockpiled for daily, intermediate, and final cover; inactive areas of the landfill; landfills with final covers but where vegetation has yet to establish itself; and land application sites where waste application has been completed but final vegetation has not yet been established.

Please address our comments and recommendations, and provide us with any changes to the draft permit, fact sheet, and/or permit components. If for any reason, the draft permit is modified from the version that was submitted to EPA on December 10, 2021, as provided in the MOA, PADEP is to submit a copy of the new draft permit for EPA review before issuance of a final permit. Should you have any questions, please contact Joel Blanco-Gonzalez by email at blanco-gonzalez.joel@epa.gov and/or by phone at (215) 814-2768.

Should you have any questions regarding this matter, please contact me.

Thank you,
Jen Fulton

Jennifer Fulton, Acting Chief
Clean Water Branch
Water Division (3WD40)
U.S. EPA Region 3
304-234-0248

2. Permittee Comments

Kim, Jin Su

From:	Haydar, Mazen <MHaydar@republicservices.com>
Sent:	Friday, January 21, 2022 4:50 PM
To:	Kim, Jin Su
Cc:	Landis, Victor; Schmidt, Jake
Subject:	[External] RE: New Morgan Landfill Company Inc. - Conestoga Landfill Revised Draft NPDES permit package (PA0055328)
Attachments:	Conestoga_DraftPermit_Comments 01-21-2022.pdf

ATTENTION: *This email message is from an external sender. Do not open links or attachments from unknown sources. To report suspicious email, forward the message as an attachment to CWOPA_SPAM@pa.gov.*

Dear Jinsu,

Kindly find attached our comments on the draft NPDES permit for Conestoga landfill. Please confirm receipt of this email and attachment.

Following up our call from Wednesday, I would like to schedule a meeting to further discuss these comments.

Regards

Mazen

Mazen Haydar, PhD
Environmental Manager

4400 Mt Pisgah Rd
York, PA 17406
e mhaydar@republicservices.com
o 7178870478
w RepublicServices.com

REPUBLIC SERVICES
We'll handle it from here.

From: Kim, Jin Su <jikim@pa.gov>
Sent: Thursday, December 9, 2021 1:06 PM
To: Haydar, Mazen <MHaydar@republicservices.com>; Schmidt, Jake <JSchmidt4@republicservices.com>
Cc: William Gothier <Bill@TaylorGeoServices.com>; Andrew Sokol <Andy@TaylorGeoServices.com>; Landis, Victor <vlandis@pa.gov>
Subject: New Morgan Landfill Company Inc. - Conestoga Landfill Revised Draft NPDES permit package (PA0055328)

1

REPUBLIC SERVICES

420 Quarry Road, PO Box 128, Morgantown, PA 19543
o 610-273-6600 f 610-273-6550 republicservices.com

Via Email Attachment Only

January 21, 2022

Jinsu Kim
Pennsylvania Department of Environmental Protection (PADEP)
Clean Water Program
Southcentral Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110-8200
jikim@pa.gov

RE: Draft NPDES Permit PA0055328; Technical Comments
New Morgan Landfill Company, Inc., Conestoga Landfill
New Morgan Borough, Berks County, Pennsylvania

Dear Jinsu:

On behalf of New Morgan Landfill Company, Inc. d/b/a Conestoga Landfill, please accept the preliminary comments on the draft NPDES permit, set forth below. As you are aware, there are several new or more stringent permit limits included in the draft permit. As part of our review of the draft permit, we are in the process of collecting more data on these parameters in an effort to better understand the current effluent quality, validity of the limited data set used to establish the new limits, and compliance implications related to the new draft effluent limits. As I recently mentioned on our call, I would like to schedule a meeting with you and your staff at the Department's earliest convenience to discuss the below comments, additional data collection and the proposed effluent limitations of the draft NDPES permit for Conestoga Landfill.

We respectfully submit the following comments:

1. The "Type of Effluent" for outfall 001 (on Page 2, Part A) was revised. The facility requests that it be changed back to the language in the previous permit, which we believe is more descriptive of actual conditions. For your convenience, please compare language of draft and existing permits below:

   Draft Permit: IW Process Effluent with ELG & Sewage

   Existing Permit: Leachate, membrane backwash and cleaning water, landfill gas condensate and groundwater mixed with condensate, sanitary wastewater, truck washwater, stormwater.

2. The sampling location description presented on page 10 of the draft permit (at Outfall 001) differs from the more detailed sampling location description listed on Page 4 of the draft permit. The description on page 4 is the accurate description and is the same description presented in the current NPDES permit. We request that the sampling

location description listed on Page 10 be edited and made the same as the description on page 4 to avoid confusion.

3. Conestoga requests evaluation of the reduction in background stream flow for the 7 Day 10 Year Low Flow (7Q10) value used. The previous 7Q10 used in 2017 was 0.8316 cfs; the 7Q10 used in the 2021 draft permit calculations is 0.561 cfs. This significant change impacts the calculation of the governing Water Quality Based Effluent Limits and resulting permit limit values. The facility would like to discuss the 7Q10 determination methods outlined in the US EPA's Handbook (LOW FLOW STATISTICS TOOLS A How-To Handbook for NPDES Permit Writers, 2018), along with available site data that support more tailored calculations resulting in a value that better reflects actual site conditions of the receiving stream.

4. The reasonable potential (RP) permit limit calculations for antimony, arsenic and zinc use the effluent limits from the current permit in the Toxics Management Spreadsheet (TMS) as the discharge concentration instead of using the calculated average monthly effluent concentration (AMEC). Per the PADEP's 2021 Toxics Management Spreadsheet Instructions, the AMEC should be used if there are over 10 data points and should be calculated using PADEP's TOXCONC spreadsheet with the most recent effluent data, *"If there are sufficient data (10 or more data points), enter the "AMEC" concentration calculated by the TOXCONC.xls spreadsheet"*. Conestoga requests that the values in the RP spreadsheet be revised to reflect the AMEC, and that the arsenic limitation in the draft permit be updated to monitor and report only. Specifically, when the RP is determined using the calculated AMEC, we believe the results are as follows:
    a. Antimony – This approach does not result in a change in the RP finding; specifically, instead of 46 ug/L, the RP should have used 22 ug/L based on the most recent 100 datapoints entered into TOXCONC.
    b. Zinc – This approach no longer triggers a 'report' requirement for zinc; specifically, instead of 110 ug/L, the RP should have used 20 ug/L based on the most recent 100 datapoints entered into TOXCONC. Note: we understand that the RP analysis does not impact the draft permit limits because the zinc limit is based on categorical effluent limitation guidelines.
    c. Arsenic – This approach results in a change from a numerical limit to 'report' only for arsenic; specifically, instead of 82 ug/L, the RP should be based on an AMEC value of 20 ug/L using the most recent 100 datapoints entered in to the TOXCONC spreadsheet.

    The facility requests that the values in the RP spreadsheet be corrected to reflect the effluent data, and the arsenic limitation in the draft permit be updated to monitor and report only.

5. The draft permit contains new requirements for some parameters based on limited data from the application renewal sampling event. The facility is in the process of collecting more data on these parameters in an effort to better understand the effluent quality,

validity of the limited data set, and compliance implications with the potential new effluent limits. Based on our initial review of these issues, it seems appropriate to establish a period of monitor and report for one or more of these parameters in lieu of fixed effluent limitations.

We appreciate the opportunity to review and submit comments on the draft NPDES permit for Conestoga Landfill and look forward to meeting with you and your staff soon. In the meantime, if you have any questions, please contact me at 717-887-0478 or by email at mhaydar@republicservices.com.

Sincerely,

Mazen Haydar

Mazen Haydar, PhD
Environmental Manager

Kim, Jin Su

From: Haydar, Mazen <MHaydar@republicservices.com>
Sent: Thursday, February 17, 2022 11:39 AM
To: Kim, Jin Su
Cc: Schmidt, Jake
Subject: RE: [External] RE: New Morgan Landfill Company Inc. - Conestoga Landfill Revised Draft NPDES permit package (PA0055328)
Attachments: 02-17-2022 CLF NPDES Comment Addendum.pdf; TOXCONC_VER2.0 _antimony_arsenic_zinc.xlsx

Hi Jin Su

Reference to the subject draft permit and per your request hereunder, kindly find attached an addendum to our comments on the draft permit which were submitted on January 21, 2022.
Also please find attached the TOXCONC spreadsheet for your consideration.

Please do not hesitate to contact me if you have any questions. Thank you.

Regards

Mazen Haydar, PhD
Environmental Manager

4400 Mt Pisgah Rd
York, PA 17406
e mhaydar@republicservices.com
o 7178870478
w RepublicServices.com

REPUBLIC SERVICES
We'll handle it from here.

From: Kim, Jin Su <jikim@pa.gov>
Sent: Monday, February 7, 2022 11:27 AM
To: Haydar, Mazen <MHaydar@republicservices.com>
Cc: Schmidt, Jake <JSchmidt4@republicservices.com>
Subject: RE: [External] RE: New Morgan Landfill Company Inc. - Conestoga Landfill Revised Draft NPDES permit package (PA0055328)

This Message Is From an External Sender

1

REPUBLIC SERVICES

Conestoga Landfill
PO Box 128
Morgantown, PA 19543

Via Email Attachment

February 17, 2022

Jinsu Kim
Pennsylvania Department of Environmental Protection (PADEP)
Clean Water Program
Southcentral Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110-8200
jikim@pa.gov

RE: Draft NPDES Permit PA0055328
Addendum **to Technical Comments Dated January 21, 2022**
New Morgan Landfill Company, Inc., Conestoga Landfill
New Morgan Borough, Berks County, Pennsylvania

Dear Mr. Kim:

Republic Services is pleased to present this Addendum to our 30-day technical review comments on the Draft NPDES Industrial Wastewater Discharge Permit for Conestoga Landfill that was submitted via email attached letter on January 21, 2022. This Addendum is being submitted as you requested following our virtual Teams meeting on February 4, 2022, and your subsequent email on February 7, 2022.

The Addendum consists of the attached technical document, which reviews the default data input values used for the StreamStats model and compares the model results to alternative methods (stream basin ratio method) for calculating low flow statistics on an ungauged stream.

The document also includes the requested effluent data for arsenic, antimony, and zinc needed to amend the Water Quality Based Effluent Limits. This data is presented in the updated TOXCONC Spreadsheet populated with effluent data for arsenic, antimony, and zinc, along with the adjusted Average Monthly Effluent Concentrations (AMEC) values used in the Toxics Management Spreadsheet (TMS). The updated TOXCONC spreadsheet is included in a Microsoft Excel format as an electronic attachment. Based on the updated WQBELs, an Exception to anti-backsliding policies is considered to be met for arsenic and antimony. The exception is also discussed in the technical report.

Based on the information presented in this Addendum regarding 7Q10 and updated WQBELs, revision of the Draft NPDES permit is considered warranted.

If you have questions regarding this information, please contact me at 717-887-0478 or email me at mhaydar@republicservices.com.

Sincerely,

Mazen Haydar

Mazen Haydar, PhD
Environmental Manager

Attachments
1. Addendum to January 21, 2022, Draft Permit Comments (Format - PDF)
2. TOXCONC Spreadsheet (Format - MS Excel)

Conestoga Landfill
Draft NPDES Permit PA0055328

Addendum to January 21, 2022, Draft Permit Comments

Background

The current NPDES permit (#PA00055328) was issued by PADEP to Conestoga in July 2015 and became effective on August 1, 2015. This permit has a standard five-year permit life with an expiration date of July 31, 2020. As required, the Conestoga Landfill submitted a permit renewal application for the NPDES permit on January 30, 2020, which was 180 days prior to the permit expiration date of July 31, 2020.

Following submittal of the permit renewal application, an initial draft permit was issued by PADEP on November 19, 2021, and a subsequent revised draft permit was issued by PADEP on December 9, 2021 and was published in the PA Bulletin on December 25, 2021. Conestoga submitted comments on the revised draft permit on January 21, 2022, and a virtual meeting was held on February 4, 2022, between Conestoga and the PADEP to review the comments presented. Following the meeting, the PADEP requested via email on February 7, 2022, that Conestoga submit additional information related to site specific information for use in the StreamStats model, which was used by the PADEP to determine low flow statistics for the receiving stream. Recent effluent monitoring results for arsenic, antimony, and zinc were also requested by PADEP for use in the Toxics Management Spreadsheet. As requested by the PADEP, this information is submitted herewith in this report as an addendum to the January 21, 2022, comment letter.

StreamStats Model

Site-Specific Input Evaluation

As discussed during the Conestoga NPDES Draft permit comment meeting on February 4, 2022, the USGS StreamStats model was found to be sensitive to various input values as they relate to the model's determination of low flow statistics. After evaluating the draft inputs in comparison to known site characteristics, it was determined that the default values significantly underestimate the 7Q10 value for the drainage basin. Specifically, the default input depth to bedrock values used to generate the low flow statistics are considerably shallower than known site specific measurements as documented from surrounding water wells. Additionally, it is observed that the automatically generated delineation of the basin size by the model results in the exclusion of two small areas of the landfill. Finally, upon review of the URBAN input in the StreamStats model, it was identified that the model relies on data from 1992 which underrepresents the existing developed areas within the limits of the defined drainage basin, including the landfill.

This comment addendum addresses the evaluation completed to develop site specific inputs for the StreamStats model for Depth to Bedrock, basin area size and updated Urban area within the basin. Using these site-specific data inputs in the model results in a 7Q10 flow that is more consistent with historical low flow statistics determined by the basin ratio method analysis for the site and the known 7Q10 for the characteristically similar French Creek basin.

Depth to Bedrock:

Updated Site-Specific Depth to Bedrock (ROCKDEP) Input = 5.21 feet (Maximum Allowed in Model)

Taylor GeoServices (TGS) reviewed 27 soil test pit logs and 96 test boring logs from locations on the landfill, and data for 83 water well logs from across the basin that are available from the Pennsylvania Groundwater Information System (PAGWIS) database to determine an appropriate depth to bedrock for the StreamStats simulation.

From the reference material on StreamStats, it is stated that the depth to bedrock variable comes from the STATSGO soil database for Pennsylvania. This depth is defined from a soil scientist's evaluation of the C/Cr horizon or when they encountered bedrock refusal. The C/Cr horizon is the weathered parent material and not competent bedrock. Depth to bedrock as reported by a licensed well driller or a geologist would typically be based on where they met refusal, or a drilling rate decrease at competent bedrock. The two methods measure the top of the rock, but what the two scientists consider rock differs. However, in the case of the landfill, we have both approaches that can be used to extrapolate a basin-wide estimate. Professional scientists' detailed scientific methods are recorded for soil and geology on the landfill property.

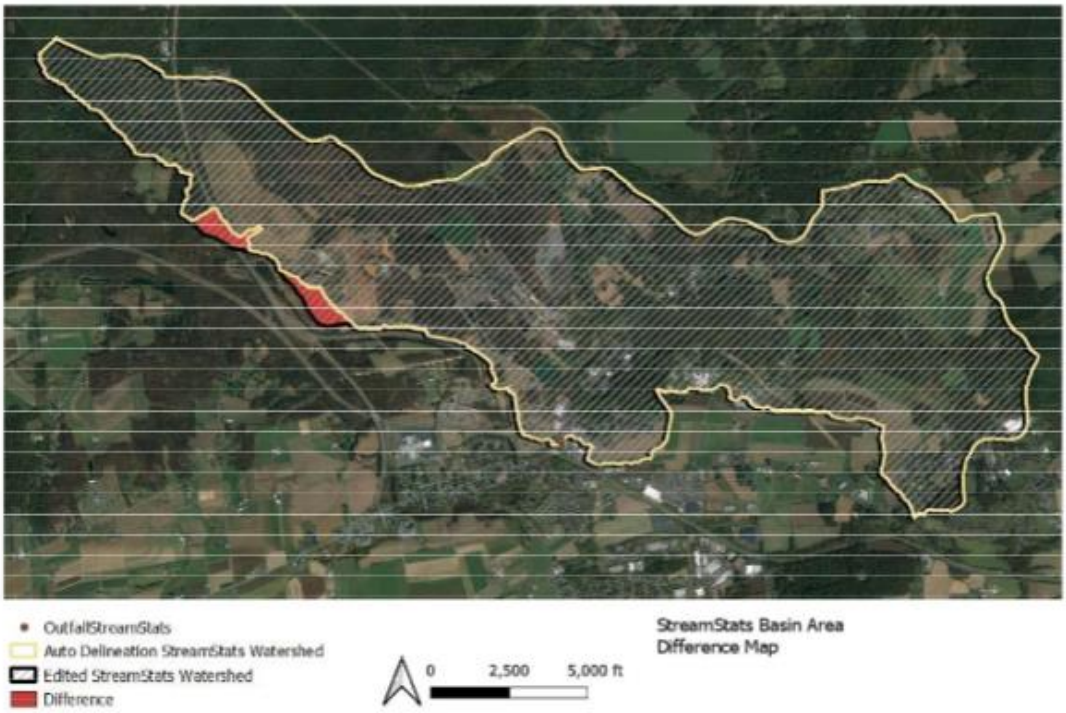
The soil scientist reports an average bedrock depth of 10.8 feet from the data sets as encountered in 14 of 27 onsite test pits. In 13 of 27 test pits, bedrock was not encountered, and the average depth to the base of the C/Cr horizon was identified to be 13.8 feet which was the final depth of the test pit excavation. In 96 test boring locations at Conestoga Landfill, geologists reported the top of competent bedrock at an average depth of 30 ft. From this data, we can see that the soil scientists determine that the weathered rock parent material starts at about 1/3 of the depth where the geologists identify the top of competent bedrock. Therefore, when reviewing the basin-wide PAGWIS drilling logs where depth to bedrock averaged 42 feet, we can utilize the ratio of where we would believe the depth of the C/Cr horizon would be basin-wide. Taking one-third of the 42 feet to bedrock reported in the PAGWIS dataset, we can interpolate a C/Cr horizon of 14 feet. Therefore, the average depth to bedrock is conservatively estimated to be 14 feet.

Although not representative of the actual local average depth to bedrock of 14 feet, utilizing the maximum depth to bedrock of 5.21 feet that is permitted by StreamStats, is justified over the default value of 4.9 feet. A summary of the depth to bedrock information is include in Tables 1 through 4.

StreamStats Basin Area:

Updated Site-Specific Basin Area (DRNAREA) Input = 6.73 square miles (Edited in StreamStats with Delineation Editor)

Using StreamStats to delineate the basin for the Conestoga Landfill outfall results in a basin area of approximately 6.66 square miles. Reviewing the auto delineated basin, we identified two errors, which failed to include portions of the drainage basin, that we edited using the Edit Basin tool in the StreamStats website. The resulting revised basin has an area of 6.73 square miles. These edited versus the auto delineated basins are shown in the figure below. The difference between the two is presented in red. These areas are corrected based on the topography and known construction of the landfill that appear to be missing or in error within the underlying digital elevation model within StreamStats.



URBAN Area Percentage:

Updated Site-Specific Urban Area Percentage (URBAN) Input = 14.39%

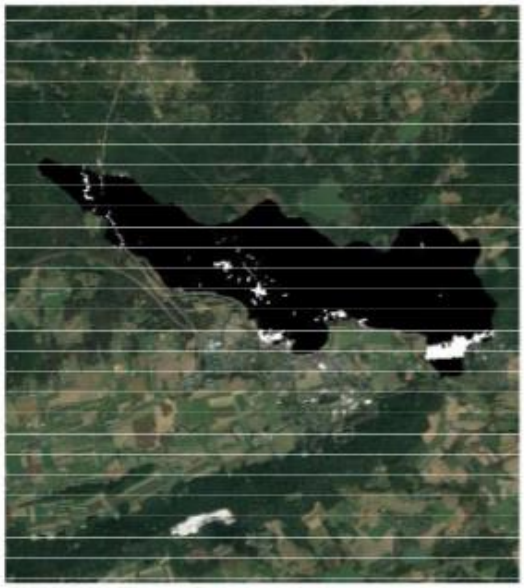
Based on the Basin Characteristics Raster for Pennsylvania StreamStats 2020 meta data published on the StreamStats website, the URBAN layer used for Pennsylvania was developed from the USGS NLCDe92[1] data set. This data set was developed in 1992 and predated the landfill. Additionally, there have been other significant changes in developed land within the basin since 1992 which affect the 7Q10 value calculated by StreamStats. In order to evaluate the current urban landcover, the USGS NLCD2019[2] land cover data set was used to delineate a more up to date percentage.

The NLCDe92 data set is a holdover from the previous version of StreamStats version 1. The USGS relies on the states to develop regression analysis equations to them for the website. They then use the layers and data as developed in the original underlying published papers. In this case, they are using the URBAN layer developed for the analysis in the original Stucky 2006 paper and the Roland and Stucky paper of 2008.

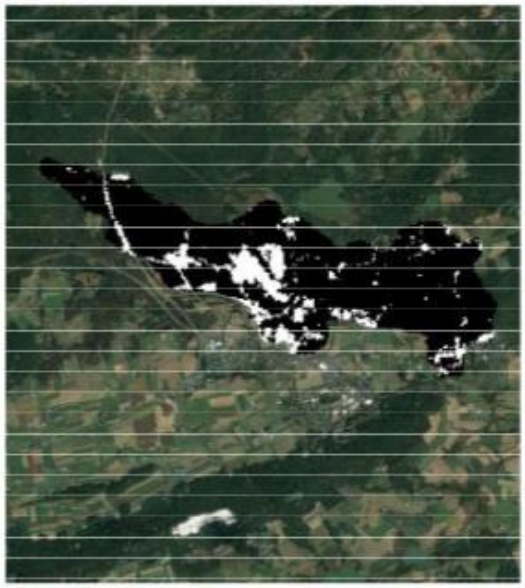
The NLCD2019 Data was downloaded from the USGS website and processed in QGIS to show developed pixels. TGS selected pixels classified as Developed - Low Intensity, Medium Intensity, and High Intensity, which are representative of the current urban development within the basin. These categories were selected within the same pixel range for developed land as that of the original NLCDe1992. A Boolean map, where URBAN areas are shown as white and non-urban areas are shown as black was generated for the 2019 dataset. The GIS was then used to calculate the URBAN area of the basin for 2019. The resulting maps of

[1] United States Geological Survey – *Enhanced* National Landcover Data - 1992
[2] United States Geological Survey – National Landcover Data - 2019

URBAN area for 1992 and 2019 are below. As identified by each map, the URBAN area in 1992, which was the default value used in StreamStats, was approximately 3.9%, while the updated URBAN data from the 2019 data yields an URBAN area of 14.39%.



1992 Urban Areas
3.98% of the Basin
StreamStats Default URBAN Layer



2019 Urban Areas
14.39% of the Basin
TGS Developed URBAN Layer

Model Results with Site Specific Inputs:

Updated 7 Day 10 Year Low Flow (7Q10) = 0.999 cfs

Inputting the more accurate updated urban area of 14.39% and using the deepest allowable depth to bedrock of 5.21 feet in StreamStats, results in a calculated 7Q10 low flow of 0.999 cfs for the Outfall 001 drainage basin. This value 0.999 cfs is in line with the average 7Q10 value of 1.06 cfs that is calculated using the basin ratio methods for the French Creek (1.42 cfs) and the Conestoga River (0.87 cfs). Both basin ratio values have been used by PADEP and SRBC for calculating low flow statistics related to the Conestoga Landfill, and the average of the two ratio values of 1.06 cfs similarly equates to the revised 7Q10 value as calculated by StreamStats using the site-specific input values. Therefore, a 7Q10 value of 1 cfs is considered to accurately reflect the site-specific low flow conditions of the drainage basin.

The updated StreamStats model run generated using the site-specific information for depth to bedrock, the updated basin area, and updated urban area is included in Attachment 1.

Water Quality Based Effluent Limits:

Incorporating Effluent Data and Satisfying Anti-Backsliding Provision

As discussed during our meeting, Brown and Caldwell has reviewed the reasonable potential (RP) calculations in the draft Fact Sheet for antimony, arsenic and zinc and observed that they did not use the facility's effluent data in the Toxics Management Spreadsheet (TMS). Per the PADEP's 2021 TMS

Instructions, the average monthly effluent concentration (AMEC) should be used if there are over 10 data points and should be calculated using PADEP's TOXCONC spreadsheet with recent effluent data. As requested, Brown and Caldwell has prepared the attached TOXCONC spreadsheet populated with effluent data for these parameters, with corrected AMEC values that should be used in TMS.

Pennsylvania's procedures for RP analysis and establishing Water Quality-Based Effluent Limitations (WQBELs) are outlined in the *Standard Operating Procedure (SOP) for Clean Water Program Establishing WQBELs and Permit Conditions for Toxic Pollutants in NPDES Permits for Existing Dischargers* (2021). Per the SOP, **if RP is not demonstrated then existing WQBELs may be relaxed or eliminated if one or more of the listed anti-backsliding exceptions apply and are documented in the fact sheet**. The facility's effluent data for antimony and arsenic show there is not a reasonable potential to violate water quality criteria because the AMEC values are less than 50% of the calculated WQBELs for these parameters. The relaxation from a numerical limit to a monitoring requirement for antimony and arsenic based on RP analysis meets the requirements of exception 6 listed in the SOP as described below.

> **Exception 6**. Relaxation of the existing WQBELs for a discharge to waters (other than Exceptional Value waters) attaining its designated and existing uses could be done in a manner that is consistent with Pennsylvania's anti-degradation policy and federal anti-backsliding exceptions.

According to PADEP's latest integrated water quality report (finalized in 2020), Conestoga River near the point of discharge is listed as impaired for nutrients as a result of agricultural activities and for organic enrichment/oxygen depletion as a result of unknown sources. The receiving water is in attainment with water quality standards for antimony and arsenic. The relaxation from a numerical limit to a monitoring requirement for antimony and arsenic based on RP analysis will not result in a new, additional, or increased point source discharge, nor result in a lowering of water quality in the receiving stream, therefore it is consistent with Pennsylvania's anti-degradation policy. It is also consistent with federal anti-backsliding exceptions. The federal anti-backsliding provisions are contained in CWA Sections 402(o) and 303(d)(4). Section 402(o) prohibits the relaxing of WQBELs unless the change is consistent with Section 303(d) or meets a listed exception. According to Section 303(d), for Waters Attaining Standards: less stringent limitation is acceptable only if the revision is subject to and consistent with state antidegradation policy. This revision meets that requirement and is therefore allowed under the CWA. Additionally, Section 404(o) states that "under these exceptions, backsliding from water quality-based permit limitations may be allowed under the following circumstances:" "Where new information (other than revised regulations, guidance, or test methods) justifies backsliding from water quality-based permit limitations". According to the EPA's permit writers manual Exhibit 7-2 Application of Anti-backsliding Requirements, this revision is allowed as long as the water quality standards are attained, the revision is consistent with antidegradation, and the revision complies with effluent guidelines and water quality standards.

TABLES

Depth to Bedrock Summary

TABLE 1

Conestoga Landfill
Depth to Bedrock Evaluation
Summary of Test Pits, Test Boring and Local Water Wells

Source	Number of Locations	Methods	Average Depth to Rock (ft)	Area of Investigation	Notes
2001 Conestoga Soil Test Pits	27	Excavation with a track hoe	10.8	Landfill Property	These locations were logged by soil scientists and are likely more similar to the STATSGO Depth to rock Measurement. Therefore, these depths are more indicative of the rock depth parameter in StreamStats. The number listed is the average depth to encountered rock. However, rock was only encountered in 14 of the 27 test pits, indicating a greater depth to rock.
Conestoga Boring Logs	96	Various Methods including air rotary, soil auger, and Rotosonic	30	Landfill Property	These locations were logged by geologists and were determined by refusal or drilling rate decreases. The method would indicated the top of hard bedrock. This interval would include weathered rock parent material classified as C or CR horizon to refusal
PAGWIS Database Search 2022	83	Various Methods predominantly air rotary	42	StreamStats Basin	These locations are typically logged by Licensed Well Drillers and are determined by refusal or drilling rate decreases. The method would indicated the top of hard bedrock. This interval would include weathered rock parent material classified as C or CR horizon to refusal

TABLE 2

Conestoga Landfill
Soil Test Pit Depth to Bedrock Summary

Location	C/CR max (ft)	Bedrock Encountered	Bedrock Depth (ft)
TP101	16	N	
TP102	21	N	
TP103	14	N	
TP104	6.9	Y	6.9
TP105	18	Y	18
TP106	17	N	
TP107	7	Y	7
TP108	20	N	
TP109	5.5	N	
TP110	6.2	Y	6.2
TP111	15.1	Y	15
TP112	20	N	
TP113	6.6	Y	6.6
TP114	18	N	
TP115	6	Y	6
TP116	14	Y	6
TP117	11	Y	11
TP118	15	N	
TP119	6	N	
TP120	20	N	
TP121	6	Y	6
TP122	18	N	
TP123	18	Y	18
TP124	15	Y	15
TP125	15	N	
TP126	22	Y	15
TP127	15	Y	15
Average	**13.8**	**Average**	**10.8**

TABLE 3

Conestoga Landfill
Depth to Bedrock
Landfill Test Borings

Name	Keyword	Easting	Northing	GroundElev	BedrockElev	Depth
ASB-1	SANDSTONE	2513673	312251.4	929	897	32
AB-1	SHALY SANDSTONE	2515329	312661.4	808.9	764.3	44.6
AB-2	SANDSTONE	2515281	312543.9	812.2	782.6	29.6
ASB-2	SANDSTONE	2513611	312258.5	928	897	31
ASW	SANDSTONE	2516033	311786	836.48	750.98	85.5
BC-14	SANDSTONE	2515083	312641.7	835.5	808.5	27
BC-2	CONGLOMERATE	2516743	312473.7	775.3	734	41.3
BC-3	CONGLOMERATE	2514869	313313.7	824.1	802.6	21.5
BC-4	SANDSTONE	2514564	312649	884.8	870.47	14.33
BC-6	SANDSTONE	2513626	313664.5	842.9	818.4	24.5
BC-8	CONGLOMERATE	2512325	315735.9	862.7	855.53	7.17
C-10-P-10	SANDSTONE	2513657	312331.1	929.57	919.57	10
C-10-P-7	SANDSTONE	2513646	312328.1	929.98	911.98	18
C-10-P5	SANDSTONE	2513463	312423.2	920.41	920.41	0
CB-A	CONGLOMERATE	2515523	312221.6	837	837	0
DMW-10	SANDSTONE	2518026	312983.7	718.6	695.6	23
DMW-11	SANDSTONE	2518648	313142.8	686.4	666.4	20
DMW-12	SANDSTONE	2514429	314257	759.8	736.8	23
DMW-13	CONGLOMERATE	2513144	315813.9	790.7	765.7	25
DMW-14	SANDSTONE	2517971	311878	700.8	680.8	20
DMW-15	SANDSTONE	2516693	312744.3	776.2	736.2	40
DMW-16	SHALE	2515107	312252.7	856.1	811.1	45
DMW-2	SANDSTONE	2512922	312828.5	914.2	899.7	14.5
DMW-3	SHALE	2511686	315598.6	901.1	862.1	39
DMW-4	SHALE	2513320	314815.5	793.1	755.1	38
DMW-5	CONGLOMERATE	2514951	313828.5	770.7	749.7	21
DMW-6	SHALE	2516121	313421.4	725.5	705.5	20
DMW-8	SHALE	2517965	312125.4	711.5	676.5	35
EW-1	SANDSTONE	2513639	312305.3	929.8	902.8	27
EX-CB-1	SANDSTONE	2517168	311679.4	757.15	687.15	70
CB-2 (EX-I	SANDSTONE	2515294	311385.7	935.5	935.5	0
EX-CB-3	SANDSTONE	2517728	310030.2	780.4	745.9	34.5
X-MW-1(I	SANDSTONE	2513542	311965.2	876.3	858.3	18
EX-MW-2	DIABASE	2514823	310564.4	804	764	40
EX-MW-3	SANDSTONE	2515787	309844.7	825.3	812.3	13
EX-MW-4	SANDSTONE	2516797	309900.5	819.3	779.3	40
EX-MW-5	CONGLOMERATE	2517472	311229.1	735	712	23
EX-MW-6	SANDSTONE	2516363	311647.9	828.8	798.8	30
EX-P-1	CONGLOMERATE	2514369	311721.9	940.6	924.6	16
EX-P-2	HORNFELS	2514472	311399.8	906.1	879.6	26.5
EX-P-3	DIABASE	2514520	311205	862.3	813.3	49
EX-P-4	SANDSTONE	2515536	310458.3	884.2	854.2	30

TABLE 3

Conestoga Landfill
Depth to Bedrock
Landfill Test Borings

Name	Keyword	Easting	Northing	GroundElev	BedrockElev	Depth
EX-P-5	SANDSTONE	2515586	310295.7	888.6	862.6	26
EX-P-6	SANDSTONE	2516468	310984.2	863.4	843.4	20
EX-P-8	SANDSTONE	2516252	310356.5	871.3	871.3	0
EX-P-9	SHALY SANDSTONE	2517427	310711.3	754.6	729.6	25
GMW-10	CONGLOMERATE	2513916	314564.3	762.36	732.76	29.6
GMW-11	CONGLOMERATE	2513935	314553.2	762.76	741.76	21
GMW-13	SANDSTONE	2514379	314314.6	755.05	717.05	38
GMW-15	CONGLOMERATE	2514690	314059.4	778.22	731.22	47
GMW-17	SANDSTONE	2515348	313452.9	781.22	725.62	55.6
GMW-18	SANDSTONE	2515811	312364.1	835.15	803.45	31.7
GMW-1R	SILTY SHALE	2511706	315603	901.13	882.13	19
GMW-2	CONGLOMERATE	2512458	313675.2	902.63	838.43	64.2
GMW-3	SANDSTONE	2513658	312321.6	929.01	910.31	18.7
GMW-36	CONGLOMERATE	2515635	312640.9	796.25	774.25	22
GMW-5	SANDSTONE	2512964	316012	792.73	719.43	73.3
GMW-7	SILTY SHALE	2513363	315338.2	796.98	763.48	33.5
GMW-9	CONGLOMERATE	2513655	314834.7	765.75	738.75	27
FFMAN WI	DIABASE	2515112	311723.1	896.2	896.2	0
MSW-A	SANDSTONE	2515655	311975	837.6	837.6	0
NCSW	SANDSTONE	2516024	312559.7	806.24	796.24	10
OW-202	DIABASE	2515353	310426.8	863.79	849.79	14
OW-203	DIABASE	2515343	310424.2	862.96	846.46	16.5
PTW-200	SANDSTONE	2515581	310503.8	891.07	856.57	34.5
RC-3	CONGLOMERATE	2514154	312745.8	902.6	866.6	36
RC-6	SANDSTONE	2512139	315858.9	863.9	796.4	67.5
RC-7	SANDSTONE	2511797	315581.3	899.7	838.7	61
RC-8	SANDSTONE	2513708	312950.9	893.2	868.7	24.5
RC-9	SANDSTONE	2513120	313287.7	885.7	825.7	60
TB-A	SANDSTONE	2515047	312022.6	878.4	814.4	64
TB-AA	SANDSTONE	2515641	312540.5	824.746	801.246	23.5
TB-B	SANDSTONE	2515137	312221.9	856.9	820.9	36
TB-BB	SANDSTONE	2515444	312150.9	838.4	791.4	47
TB-C	CONGLOMERATE	2515390	312288.4	837.1	837.1	0
TB-C1	CONGLOMERATE	2515380	312291.1	837	831	6
TB-CC	CONGLOMERATE	2515714	312389.9	835.7	795.7	40
TB-D	CONGLOMERATE	2515246	312411	838.6	811.6	27
TB-DD	SANDSTONE	2515714	312499.9	823.1	774.6	48.5
TB-E	SANDSTONE	2514875	311883.4	897.4	889.4	8
TB-EE	SANDSTONE	2515511	312460.3	834.4	809.4	25
TB-F	SANDSTONE	2515615	312507.7	834.7	807.7	27
TB-FF	SANDSTONE	2515545	312397.6	836.7	791.7	45
TB-G	SANDSTONE	2515741	312601	799.1	774.1	25

TABLE 3

Conestoga Landfill
Depth to Bedrock
Landfill Test Borings

Name	Keyword	Easting	Northing	GroundElev	BedrockElev	Depth
TB-GG	SANDSTONE	2515190	312201.3	855.9	830.9	25
TB-H	SANDSTONE	2514878	311894.1	897.11	887.11	10
TB-HH	SANDSTONE	2515070	312257	861.3	836.3	25
TB-I	SANDSTONE	2514734	311773.7	911.72	908.72	3
TB-II	SANDSTONE	2515243	312311.9	838.4	813.4	25
TB-J	CONGLOMERATE	2514386	311850.8	925.79	877.79	48
TB-JJ	SANDSTONE	2515273	312248.6	838.3	822.3	16
TB-KK	CONGLOMERATE	2515301	312343.2	839.6	801.6	38
TB-LL	CONGLOMERATE	2515302	312400.6	836.4	747.4	89
TB-MM	SANDSTONE	2515358	312307	838.3	814.3	24
TB-NN	CONGLOMERATE	2515357	312376	834.9	777.9	57
TB-Y	SANDSTONE	2515161	312331.4	851	824	27
					Average	**30**

TABLE 4

Conestoga Landfill
PA Groundwater Information Systems

Depth to Bedrock Data
Water Supply Wells Within Outfall 001 Drainage Basin

PAWellID	County	Municipality	QuadName	WellAddress	Well Zip Code	DateDrilled	LatitudeDD	Longitude DD	Driller	WellDepth(ft)	Depth To Bedrock(ft)	Bedrock Not Reached
695668	CHESTER	ELVERSON BORO		125 N. Chestnut St.	19520	6/25/2021	40.16295	-75.831	PETERSHEIM BROS. INC.	140	37	False
691263	BERKS	CAERNARVON TWP.	ELVERSON	2400 Hopewell Road	19520	11/25/2020	40.17492	-75.8454	SENSENIG & WEAVER WELL DRILLING	80	51	False
690210	BERKS	CAERNARVON TWP.	ELVERSON	239 Clymer Hill Road	19520	10/22/2020	40.16289	-75.8674	SENSENIG & WEAVER WELL DRILLING	320	58	False
688957	CHESTER	ELVERSON BORO	ELVERSON	Springfield Drive Lot 1	19520	9/8/2020	40.15903	-75.8322	SENSENIG & WEAVER WELL DRILLING	310	45	False
688957	CHESTER	ELVERSON BORO	ELVERSON	Springfield Drive Lot 1	19520	9/8/2020	40.15903	-75.8322	SENSENIG & WEAVER WELL DRILLING	310	45	False
688956	CHESTER	ELVERSON BORO	ELVERSON	Springfield Drive Lot 1	19520	9/8/2020	40.15899	-75.8323	SENSENIG & WEAVER WELL DRILLING	310	45	False
688956	CHESTER	ELVERSON BORO	ELVERSON	Springfield Drive Lot 1	19520	9/8/2020	40.15899	-75.8323	SENSENIG & WEAVER WELL DRILLING	310	45	False
688035	CHESTER	ELVERSON BORO	ELVERSON	58 N Chestnut St	19520	5/5/2020	40.16008	-75.8337	THOMAS G KEYES INC	122	32	False
686852	BERKS	CAERNARVON TWP.	ELVERSON	225 Ammon Road	19520	6/30/2020	40.17668	-75.8329	SENSENIG & WEAVER WELL DRILLING	120	15	False
685572	BERKS	CAERNARVON TWP.	ELVERSON	4449 North Twin Valley Road	19543	5/14/2020	40.17778	-75.8581	SENSENIG & WEAVER WELL DRILLING	120	70	False
684316	BERKS	CAERNARVON TWP.	ELVERSON	920 Joanna Road	19543	2/24/2020	40.17004	-75.8592	SENSENIG & WEAVER WELL DRILLING	300	15	False
674211	BERKS	CAERNARVON TWP.		5548 Morgantown Road	17765	2/21/2019	40.17688	-75.8747	TALON DRILLING COMPANY	212	10	False
674211	BERKS	CAERNARVON TWP.		5548 Morgantown Road	17765	2/21/2019	40.17688	-75.8747	TALON DRILLING COMPANY	212	10	False
658891	BERKS	NEW MORGAN BORO	MORGANTOWN	420 Quarry Road	19543	11/18/2016	40.17602	-75.9053	EICHELBERGERS INC.	135	24	False
658890	BERKS	NEW MORGAN BORO	MORGANTOWN	420 Quarry Road	19543	11/18/2016	40.17622	-75.9053	EICHELBERGERS INC.	70	26	False
658883	BERKS	NEW MORGAN BORO	MORGANTOWN	420 Quarry Road	19543	11/18/2016	40.17626	-75.9055	EICHELBERGERS INC.	120	25	False
658882	BERKS	NEW MORGAN BORO	MORGANTOWN	420 Quarry Road	19543	11/18/2016	40.17583	-75.9058	EICHELBERGERS INC.	127	58	False
658876	BERKS	NEW MORGAN BORO	MORGANTOWN	420 Quarry Road	19543	11/18/2016	40.17588	-75.9063	EICHELBERGERS INC.	101	16.5	False
658852	BERKS	NEW MORGAN BORO	MORGANTOWN	420 Quarry Road	19543	11/18/2016	40.17608	-75.9055	EICHELBERGERS INC.	49	38	False
658851	BERKS	NEW MORGAN BORO	MORGANTOWN	420 Quarry Road	19543	11/18/2016	40.17585	-75.9056	EICHELBERGERS INC.	128	16	False
658800	BERKS	NEW MORGAN BORO	MORGANTOWN	420 Quarry Road	19543	11/18/2016	40.17603	-75.9057	EICHELBERGERS INC.	101	14	False
654900	BERKS	CAERNARVON TWP.	ELVERSON	1503 Elverson Rd	19520	7/31/2017	40.1697	-75.8382	THOMAS G KEYES INC	102	60	False
644977	BERKS	CAERNARVON TWP.	ELVERSON	5 Joanna Road	19543	11/10/2016	40.16849	-75.8719	PETERSHEIM BROS. INC.	460	50	False
64400	BERKS	ROBESON TWP.	ELVERSON			7/1/1978	40.17889	-75.8447	PETERSHEIM BROS. INC.	100	75	False
64340	BERKS	ROBESON TWP.	ELVERSON			8/1/1981	40.17889	-75.8425	PETERSHEIM BROS. INC.	220	100	False
640797	BERKS	CAERNARVON TWP.		2364 Hopewell Rd.	19520	6/14/2016	40.17532	-75.8443	PETERSHEIM BROS. INC.	160	110	False
640680	BERKS	CAERNARVON TWP.	ELVERSON	39 Smith Rd.	19520	5/31/2016	40.1786	-75.843	PETERSHEIM BROS. INC.	240	70	False
640678	BERKS	CAERNARVON TWP.	ELVERSON	39 Smith Rd.	19520	6/1/2016	40.17861	-75.843	PETERSHEIM BROS. INC.	240	70	False
625408	BERKS	NEW MORGAN BORO	MORGANTOWN	420 QUARRY RD.	19543	12/13/2006	40.18056	-75.8917	EICHELBERGERS INC.	150	24	False
625404	BERKS	NEW MORGAN BORO	MORGANTOWN	420 QUARRY RD.	19543	12/13/2006	40.18056	-75.8917	EICHELBERGERS INC.	155	36	False
625403	BERKS	NEW MORGAN BORO	MORGANTOWN	420 QUARRY RD.	19543	12/13/2006	40.18055	-75.8917	EICHELBERGERS INC.	141	38	False
625327	BERKS	NEW MORGAN BORO	MORGANTOWN	420 QUARRY RD.	19543	12/13/2006	40.18056	-75.8917	EICHELBERGERS INC.	27	20	False
625324	BERKS	NEW MORGAN BORO	MORGANTOWN	420 QUARRY RD.	19543	12/13/2006	40.18056	-75.8917	EICHELBERGERS INC.	140	18	False
625172	BERKS	NEW MORGAN BORO	MORGANTOWN	420 QUARRY RD.	19543	12/13/2006	40.18056	-75.8917	EICHELBERGERS INC.	130	27	False
625171	BERKS	NEW MORGAN BORO	MORGANTOWN	420 QUARRY RD.	19543	12/13/2006	40.18056	-75.8917	EICHELBERGERS INC.	40	23	False
625170	BERKS	NEW MORGAN BORO	MORGANTOWN	420 QUARRY RD.	19543	12/13/2006	40.18056	-75.8917	EICHELBERGERS INC.	160	15	False
61420	BERKS	CAERNARVON TWP.	MORGANTOWN				40.17889	-75.8764	KERR BROS	90	8	False
61418	BERKS	CAERNARVON TWP.	ELVERSON			1/1/1974	40.17667	-75.8539	PETERSHEIM BROS. INC.	168	100	False
61416	BERKS	CAERNARVON TWP.	ELVERSON			1/1/1970	40.17361	-75.8564	KERR BROS	100	12	False
61411	BERKS	CAERNARVON TWP.	ELVERSON			1/1/1968	40.16972	-75.8414	PETERSHEIM BROS. INC.	123	50	False
61408	BERKS	CAERNARVON TWP.	MORGANTOWN			1/1/1968	40.17139	-75.8883	PETERSHEIM BROS. INC.	183	40	False
61406	BERKS	CAERNARVON TWP.	ELVERSON			1/1/1968	40.17583	-75.8692	PETERSHEIM BROS. INC.	250	35	False
61405	BERKS	CAERNARVON TWP.	ELVERSON			1/1/1966	40.17222	-75.8533	PETERSHEIM BROS. INC.	112	40	False
61404	BERKS	CAERNARVON TWP.	ELVERSON			1/1/1967	40.16528	-75.8517	PETERSHEIM BROS. INC.	155	50	False
61402	BERKS	CAERNARVON TWP.	ELVERSON			1/1/1967	40.1775	-75.8711	PETERSHEIM BROS. INC.	98	51	False
61391	BERKS	CAERNARVON TWP.		Hopewell Rd		9/1/1984	40.17363	-75.8476	PETERSHEIM BROS. INC.	333	95	False
61374	BERKS	CAERNARVON TWP.	ELVERSON			10/1/1978	40.16861	-75.8328	PETERSHEIM BROS. INC.	258	38	False
61373	BERKS	CAERNARVON TWP.	ELVERSON			7/10/1979	40.16861	-75.8369	PETERSHEIM BROS. INC.	98	55	False
61372	BERKS	CAERNARVON TWP.	MORGANTOWN			9/1/1978	40.16056	-75.8756	PETERSHEIM BROS. INC.	510	55	False
61364	BERKS	CAERNARVON TWP.	ELVERSON			6/1/1978	40.17778	-75.8442	PETERSHEIM BROS. INC.	244	175	False
61363	BERKS	CAERNARVON TWP.	ELVERSON			11/1/1977	40.17667	-75.845	PETERSHEIM BROS. INC.	259	138	False

TABLE 4

Conestoga Landfill
PA Groundwater Information Systems

Depth to Bedrock Data
Water Supply Wells Within Outfall 001 Drainage Basin

PAWellID	County	Municipality	QuadName	WellAddress	Well Zip Code	DateDrilled	LatitudeDD	LongitudeDD	Driller	WellDepth(ft)	Depth To Bedrock(ft)	Bedrock Not Reached
61362	BERKS	CAERNARVON TWP.	ELVERSON			5/1/1984	40.18222	-75.8725	C S GARBER & SONS INC	246	24	False
606052	BERKS	CAERNARVON TWP.	ELVERSON	1490 Elverson Rd	19543	5/6/2015	40.16813	-75.8393	PETERSHEIM BROS. INC.	260	26	False
547892	BERKS	CAERNARVON TWP.	ELVERSON	32 Smith Road	19520	11/26/2014	40.17833	-75.8429	SENSENIG & WEAVER WELL DRILLING	200	4	False
547892	BERKS	CAERNARVON TWP.	ELVERSON	32 Smith Road	19520	11/26/2014	40.17833	-75.8429	SENSENIG & WEAVER WELL DRILLING	200	4	False
547891	BERKS	CAERNARVON TWP.	ELVERSON	32 Smith Road	19520	11/26/2014	40.17834	-75.8429	SENSENIG & WEAVER WELL DRILLING	200	4	False
547891	BERKS	CAERNARVON TWP.	ELVERSON	32 Smith Road	19520	11/26/2014	40.17834	-75.8429	SENSENIG & WEAVER WELL DRILLING	200	4	False
547890	BERKS	CAERNARVON TWP.	ELVERSON	32 Smith Road	19520	11/26/2014	40.17835	-75.8429	SENSENIG & WEAVER WELL DRILLING	200	4	False
547890	BERKS	CAERNARVON TWP.	ELVERSON	32 Smith Road	19520	11/26/2014	40.17835	-75.8429	SENSENIG & WEAVER WELL DRILLING	200	4	False
510735	BERKS	CAERNARVON TWP.		1409 Red Hill Road	19520	11/11/2013	40.17627	-75.8451	PETERSHEIM BROS. INC.	450	190	False
501195	BERKS	CAERNARVON TWP.		609 Joanna Rd.	19543	8/15/2012	40.17043	-75.8649	PETERSHEIM BROS. INC.	240	70	False
501185	BERKS	CAERNARVON TWP.		609 Joanna Rd.	19543	8/16/2012	40.17044	-75.8649	PETERSHEIM BROS. INC.	300	50	False
501184	BERKS	CAERNARVON TWP.		609 Joanna Rd.	19543	8/16/2012	40.17056	-75.8649	PETERSHEIM BROS. INC.	300	50	False
500722	CHESTER	ELVERSON BORO		14 W Main Street Elverson		7/24/2012	40.15725	-75.8341	MYERS BROS DRILLING CONTRACTORS IN	300	14	False
500721	CHESTER	ELVERSON BORO		14 W Main Street Elverson		7/24/2012	40.15725	-75.8341	MYERS BROS DRILLING CONTRACTORS IN	300	14	False
498687	BERKS	CAERNARVON TWP.		976 Elverson Road	19543	3/28/2012	40.17403	-75.8675	SENSENIG & WEAVER WELL DRILLING	235	39	False
498668	BERKS	CAERNARVON TWP.		976 Elverson Road	19543	3/28/2012	40.17403	-75.8675	SENSENIG & WEAVER WELL DRILLING	235	39	False
495441	BERKS	CAERNARVON TWP.		Thousand Oak Blvd	19520	9/15/2009	40.167	-75.871	B. L. MYERS BROS OF MDLLC	400	53	False
495441	BERKS	CAERNARVON TWP.		Thousand Oak Blvd	19520	9/15/2009	40.167	-75.871	B. L. MYERS BROS OF MDLLC	400	53	False
488120	BERKS	CAERNARVON TWP.		4 Mountaineer Blvd.	19543	5/11/2010	40.19087	-75.9329	PETERSHEIM BROS. INC.	310	90	False
485982	BERKS	CAERNARVON TWP.		1102 Elverson Road	19543	1/21/2010	40.1715	-75.8613	SENSENIG & WEAVER WELL DRILLING	200	50	False
473758	BERKS	CAERNARVON TWP.		301 Willow Glen Road		11/10/2010	40.16046	-75.8732	MYERS BROS DRILLING CONTRACTORS IN	225	12	False
473757	BERKS	CAERNARVON TWP.		301 Willow Glen Road		11/10/2010	40.16046	-75.8732	MYERS BROS DRILLING CONTRACTORS IN	225	12	False
297025	BUCKS	MIDDLETOWN TWP.	LANGHORNE	1769 DARRAH ST LANGHORNE		1/16/1989	40.182	-75.8906	BUCKS COUNTY WELL DRILLING INC.	155	20	False
114198	CHESTER	WEST NANTMEAL TWP.	ELVERSON			1/1/1968	40.15333	-75.8347	PETERSHEIM BROS. INC.	123	65	False
114196	CHESTER	WEST NANTMEAL TWP.	ELVERSON			1/1/1966	40.15222	-75.8369	PETERSHEIM BROS. INC.	452	10	False
114190	CHESTER	WEST NANTMEAL TWP.	ELVERSON			1/1/1966	40.16194	-75.8325	PETERSHEIM BROS. INC.	95	40	False
114189	CHESTER	WEST NANTMEAL TWP.	ELVERSON			1/1/1966	40.15556	-75.8328	PETERSHEIM BROS. INC.	62	35	False
112112	CHESTER	WARWICK TWP.	ELVERSON			1/1/1967	40.15583	-75.8342	MICHAEL KUSZYK	123	48	False
107681	CHESTER	ELVERSON BORO	ELVERSON			5/1/1978	40.15694	-75.8331	C S GARBER & SONS INC	280	15	False
107679	CHESTER	ELVERSON BORO	ELVERSON			12/1/1981	40.15778	-75.8339	PETERSHEIM BROS. INC.	120	20	False
107678	CHESTER	ELVERSON BORO	ELVERSON			12/1/1981	40.15639	-75.8386	PETERSHEIM BROS. INC.	303	60	False
107677	CHESTER	ELVERSON BORO	ELVERSON			12/1/1979	40.15611	-75.835	C S GARBER & SONS INC	297	8	False
										Average	**42**	

ATTACHMENT 1

StreamStats Model
Updated

1. **Depth to Bedrock 5.21 feet**
2. **Basin Area 6.73 square miles**
3. **Urban Area 14.39%**

StreamStats Report

Region ID:
Workspace ID:
Clicked Point (Lat/Long):
Time:

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	6.78	square miles
BSLOPD	Mean basin slope measured in degrees	3.8913	degrees
[illegible]	Basin shape	2.7	
URBAN	Percentage of the basin with urban development	14.31	percent

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	6.78	square miles	6.78	1103
BSLOPD	Mean Basin Slope degrees	3.8913	degrees	1.7	5.4
BSHAPE	Basin Shape	2.71	feet	2.13	2.71
URBAN	Percent Urban	14.29	percent	0	32

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	2.01	ft^3/s	16	16
30 Day 2 Year Low Flow	2.55	ft^3/s	30	30
7 Day 10 Year Low Flow	0.959	ft^3/s	51	51
30 Day 10 Year Low Flow	1.3	ft^3/s	46	46
90 Day 10 Year Low Flow	2.16	ft^3/s	41	41

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/)

Application Version:
Streamstats Services Version:
NSS Services Version:

	Facility:	Conestoga Landfill	
	NPDES #:	PA0055328	
	Outfall No:	001	
	n (Samples/Month):	4	
	Reviewer/Permit Engineer:		
Parameter Name	Total Antimony	Total Arsenic	Total Zinc
Units	mg/L	mg/L	mg/L
Detection Limit			
Sample Date	*When entering values below the detection limit, enter "ND" or use the < notation (eg. <0*		
11/21/2019	0.04	<0.008	< 0.050
11/27/2019	0.04	<0.008	< 0.050
12/5/2019	0.02	<0.008	< 0.050
12/12/2019	0.03	<0.008	0.6
12/26/2019	0.02	<0.008	< 0.050
1/2/2020	0.02	<0.007	< 0.050
1/9/2020	<0.009	<0.007	< 0.050
1/16/2020	0.02	<0.007	0.006
1/23/2020	0.02	<0.007	0.006
1/30/2020	<.01	<0.007	< 0.050
2/6/2020	0.01	<0.007	0.006
2/13/2020	0.02	0.007	0.006
2/18/2020	0.02	0.01	< 0.050
2/27/2020	<.01	0.01	< 0.050
3/5/2020	<.01	<0.007	< 0.050
3/12/2020	0.02	<0.007	< 0.050
3/19/2020	0.03	<0.007	< 0.050
3/26/2020	<.01	<0.007	< 0.050
4/9/2020	<.01	0.02	< 0.050
4/16/2020	0.02	0.01	< 0.050
4/21/2020	0.02	0.01	0.018
4/30/2020	0.02	0.01	< 0.050
5/5/2020	0.02	<0.007	< 0.050
5/14/2020	<.01	0.01	0.005
5/21/2020	0.012	0.014	< 0.050
5/28/2020	0.011	0.015	< 0.050
6/4/2020	0.01	0.02	0.005
6/11/2020	0.01	0.012	< 0.050
6/18/2020	0.013	0.017	< 0.050
6/23/2020	0.012	0.017	< 0.050
7/2/2020	0.01	0.016	< 0.050
7/9/2020	0.011	0.018	< 0.050
7/16/2020	0.012	0.019	0.006
7/21/2020	0.014	0.017	0.006
7/28/2020	0.014	0.019	0.006
8/4/2020	0.013	0.02	0.006
8/11/2020	0.019	0.019	< 0.050
8/18/2020	0.021	0.017	0.008
8/25/2020	0.018	0.018	0.007
9/1/2020	0.02	0.02	0.006
9/8/2020	0.017	0.015	< 0.050
9/15/2020	0.014	0.015	0.006
9/22/2020	0.017	0.017	< 0.050
9/29/2020	0.015	0.016	0.01
10/6/2020	0.022	0.018	0.008
10/13/2020	0.02	0.022	0.011
10/20/2020	0.022	0.021	0.11
10/27/2020	0.02	0.021	0.01
11/3/2020	0.019	0.018	0.01

Parameter Name	Total Antimony	Total Arsenic	Total Zinc	
Units	mg/L	mg/L	mg/L	
Detection Limit				
Sample Date	*When entering values below the detection limit, enter "ND" or use the < notation (eg. <0.02)*			
11/10/2020	0.016	0.018	0.01	
11/17/2020	0.014	0.016	0.01	
11/23/2020	0.014	0.007	0.009	
12/1/2020	0.012	0.016	0.007	
12/8/2020	0.013	0.016	0.007	
12/15/2020	0.01	0.012	0.006	
12/21/2020	0.01	0.006	0.008	
12/28/2020	0.009	0.006	0.009	
1/5/2021	0.007	0.006	0.009	
1/12/2021	0.006	0.009	0.01	
1/19/2021	0.01	0.007	0.015	
1/26/2021	0.01	0.006	0.015	
2/2/2021	0.009	0.007	0.015	
2/9/2021	0.01	0.007	0.011	
2/16/2021	0.01	0.008	0.01	
2/23/2021	0.01	0.008	0.009	
3/2/2021	0.009	0.008	0.009	
3/9/2021	0.009	0.007	0.006	
3/16/2021	0.009	0.007	0.007	
3/23/2021	0.009	0.006	0.006	
3/30/2021	0.009	0.006	0.008	
4/6/2021	0.008	0.007	0.008	
4/13/2021	0.009	0.007	0.007	
4/20/2021	0.007	0.007	0.005	
4/27/2021	0.008	0.006	0.006	
5/4/2021	0.008	0.007	0.008	
5/11/2021	0.01	0.007	0.007	
5/18/2021	0.008	0.006	0.008	
5/25/2021	0.009	0.007	0.006	
6/1/2021	0.009	0.008	0.008	
6/8/2021	0.008	0.008	0.006	
6/15/2021	0.011	0.007	0.007	
6/22/2021	0.009	0.01	0.006	
6/29/2021	0.008	0.008	0.009	
7/6/2021	0.01	0.011	0.007	
7/13/2021	0.01	0.017	0.007	
7/20/2021	0.009	0.012	0.008	
7/27/2021	0.009	0.011	0.007	
8/3/2021	0.008	0.017	0.008	
8/10/2021	0.009	0.019	0.008	
8/17/2021	0.008	0.016	0.008	
8/24/2021	0.009	0.013	0.006	
8/31/2021	0.008	0.015	0.008	
9/7/2021	0.009	0.013	0.013	
9/14/2021	0.009	0.013	0.007	
9/21/2021	0.008	0.012	0.007	
9/28/2021	0.011	0.008	0.005	
10/5/2021	0.009	0.016	0.006	
10/12/2021	0.009	0.018	0.008	
10/19/2021	0.006	0.006	< 0.050	
10/26/2021	0.006	0.007	0.008	

		Reviewer/Permit Engineer:
Facility:	Conestoga Landfill	
NPDES #:	PA0055328	
Outfall No:	001	
n (Samples/Month):	4	

Parameter	Distribution Applied	Coefficient of Variation (daily)	Avg. Monthly
Total Antimony (mg/L)	Delta-Lognormal	0.5332350	0.0218564
Total Arsenic (mg/L)	Delta-Lognormal	0.6470570	0.0203796
Total Zinc (mg/L)	Delta-Lognormal	1.0572096	0.0200532

REPUBLIC SERVICES
420 Quarry Road, PO Box 128, Morgantown, PA 19543
o 610-273-6600 f 610-273-6550 republicservices.com

Via Email Attachment Only

March 16, 2022

Jinsu Kim
Pennsylvania Department of Environmental Protection (PADEP)
Clean Water Program
Southcentral Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110-8200

Subject: Draft NPDES Permit PA0055328,
New Morgan Landfill Company, Inc. - Conestoga Landfill

Dear Jinsu,

We appreciate the time you have taken to meet with us and discuss the details of the Conestoga Landfill Draft NPDES Permit. Conestoga's draft permit contained new water quality-based effluent limits (WQELBs) for boron and copper. The facility has limited data for boron, and although the facility does have historical grab sample results for copper, it does not have historical composite sample results as specified by the proposed copper limit. As discussed with you previously, the available boron and copper data exhibit a sufficient degree of variability to create reasonable uncertainty as to the facility's ability to immediately comply with the proposed WQBELs. Conestoga is requesting that PADEP defer the effective date for the WQBELs for boron and copper for a minimum of one (1) year. This monitoring period would allow Conestoga to observe seasonal variations in these parameters and the range of concentration levels in order to make a determination if the effluent limits are achievable. During this period, Conestoga will also undertake a focused compliance evaluation, which will include:

- Investigation of the source(s) of the pollutants in the effluent through a comprehensive review of influent and effluent quality and potential sources – e.g., examining impacts on concentration levels contributed by leachate flows from different disposal areas of the site.
- Evaluation of approaches and strategies that exist to reduce or eliminate sources in order to achieve the final WQBELs – e.g., reviewing wastes disposed and operational considerations to examine options to reduce existing and additional sources or impacts.
- Evaluation of approaches and strategies that could be utilized through wastewater management measures and/or treatment to achieve the final WQBELs at the discharge.

Conestoga will report the results of its focused compliance evaluation three (3) months prior to the effective date of the new boron and copper limits, and if needed, work with the

Department to establish an enforceable schedule with milestones for appropriate actions to ensure the site can and does achieve reliable compliance with those standards once in effect.

If you have any questions, please do not hesitate to contact me at 717-887-0478 or by email at MHaydar@republicservices.com.

Sincerely,

Mazen Haydar, PhD
Environmental Manager

3. Page 2 Fact Sheet Revision

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.075
Latitude	40° 9’ 34”	Longitude	75° 52’ 41”
Quad Name	Morgantown	Quad Code	1738

Wastewater Description: ~~Treated IW & Sewage~~ leachate, membrane backwash and cleaning water, landfill gas condensate, sanitary wastewater from site, truck washwater, stormwater from open face of landfill, stormwater from truck off-loading pads and treatment plant area

Receiving Waters	Conestoga River	Stream Code	07548
NHD Com ID	57461727	RMI	61.2
Drainage Area	6.65 sq.mi.	Yield (cfs/mi^2)	0.084
Q_{7-10} Flow (cfs)	0.561	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	520	Slope (ft/ft)	
Watershed No.	7-J	Chapter 93 Class.	WWF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Organic Enrichment/Low D.O., Nutrients		
Source(s) of Impairment	Agriculture, Other		
TMDL Status	Final, 04/09/2005	Name	Conestoga Headwaters TMDL

Nearest Downstream Public Water Supply Intake	Lancaster Municipal Water Authority		
PWS Waters	Conestoga River	Flow at Intake (cfs)	
PWS RMI	Approx. 23.5	Distance from Outfall (mi)	Approx. 38

4. Water Quality Analysis

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
07J	7548	CONESTOGA RIVER (formerly CREE	**64.700**	630.00	0.20	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	0.120	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Elverson STP	PA0052078	0.1250	0.1250	0.1250	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
07J	7548	CONESTOGA RIVER (formerly CREE	**63.000**	615.00	2.00	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	0.120	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Twin Valley	PA0031631	0.0270	0.0270	0.0270	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
07J	7548	CONESTOGA RIVER (formerly CREE	**61.200**	520.00	6.73	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.120	0.00	1.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Conestoga Land	PA0055328	0.0750	0.0750	0.0750	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
07J	7548	CONESTOGA RIVER (formerly CREE	**60.250**	519.00	6.93	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	0.120	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
New Morgan	PA0088048	0.2000	0.2000	0.2000	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
07J	7548	CONESTOGA RIVER (formerly CREE	**59.570**	508.00	11.30	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	1.19	0.000	0.000	0.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

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

Parameter Data

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

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
07J	7548	CONESTOGA RIVER (formerly CREE	**59.000**	494.00	14.60	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	0.120	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Caernarvon	PA0070424	0.7000	0.7000	0.7000	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

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
07J	7548	CONESTOGA RIVER (formerly 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												
64.700	0.02	0.00	0.02	.1934	0.00167	.447	4.18	9.34	0.12	0.893	24.45	7.00
63.000	0.24	0.00	0.24	.2351	0.01000	.446	8.46	18.98	0.13	0.873	22.47	7.00
61.200	1.00	0.00	1.00	.3512	0.00020	.591	18.28	30.94	0.13	0.464	21.30	7.00
60.250	1.02	0.00	1.02	.6606	0.00306	.552	17.29	31.32	0.18	0.236	21.96	7.00
59.570	1.19	0.00	1.19	.6606	0.00465	.562	19.04	33.88	0.17	0.201	22.23	7.00
Q1-10 Flow												
64.700	0.02	0.00	0.02	.1934	0.00167	NA	NA	NA	0.11	0.914	24.63	7.00
63.000	0.15	0.00	0.15	.2351	0.01000	NA	NA	NA	0.11	0.977	23.02	7.00
61.200	0.64	0.00	0.64	.3512	0.00020	NA	NA	NA	0.11	0.552	21.77	7.00
60.250	0.66	0.00	0.66	.6606	0.00306	NA	NA	NA	0.15	0.270	22.51	7.00
59.570	0.76	0.00	0.76	.6606	0.00465	NA	NA	NA	0.15	0.233	22.70	7.00
Q30-10 Flow												
64.700	0.03	0.00	0.03	.1934	0.00167	NA	NA	NA	0.12	0.874	24.28	7.00
63.000	0.33	0.00	0.33	.2351	0.01000	NA	NA	NA	0.14	0.795	22.09	7.00
61.200	1.36	0.00	1.36	.3512	0.00020	NA	NA	NA	0.14	0.407	21.03	7.00
60.250	1.39	0.00	1.39	.6606	0.00306	NA	NA	NA	0.20	0.211	21.61	7.00
59.570	1.62	0.00	1.62	.6606	0.00465	NA	NA	NA	0.19	0.179	21.94	7.00

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07J	7548	CONESTOGA RIVER (formerly CREEK)

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
64.700	0.125	24.448	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
4.178	0.447	9.338	0.116
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
22.46	1.463	0.98	0.986
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
5.358	25.256	Owens	5
Reach Travel Time (days)			
0.893			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.089	19.13	0.89	6.06
0.179	16.30	0.82	6.43
0.268	13.88	0.75	6.72
0.357	11.83	0.69	6.97
0.447	10.07	0.63	7.18
0.536	8.58	0.57	7.36
0.625	7.31	0.53	7.52
0.715	6.23	0.48	7.61
0.804	5.30	0.44	7.61
0.893	4.52	0.40	7.61

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
63.000	0.152	22.474	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
8.461	0.446	18.978	0.126
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
5.17	0.815	1.11	0.847
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.668	25.589	Owens	5
Reach Travel Time (days)			
0.873			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.087	4.78	1.03	7.88
0.175	4.41	0.96	7.88
0.262	4.07	0.89	7.88
0.349	3.76	0.82	7.88
0.437	3.47	0.77	7.88
0.524	3.21	0.71	7.88
0.611	2.96	0.66	7.88
0.699	2.73	0.61	7.88
0.786	2.52	0.57	7.88
0.873	2.33	0.53	7.88

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07J	7548	CONESTOGA RIVER (formerly CREEK)

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
61.200	0.227	21.300	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
18.280	0.591	30.941	0.125
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
3.88	0.628	0.89	0.774
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.836	0.244	Tsivoglou	5
Reach Travel Time (days)			
0.464			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.046	3.76	0.86	7.53
0.093	3.64	0.83	7.24
0.139	3.53	0.80	6.96
0.186	3.43	0.77	6.69
0.232	3.32	0.75	6.44
0.278	3.22	0.72	6.19
0.325	3.12	0.69	5.96
0.371	3.03	0.67	5.74
0.418	2.93	0.65	5.54
0.464	2.85	0.62	5.34

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
60.250	0.427	21.961	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
17.291	0.552	31.318	0.176
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
6.90	1.116	1.68	0.814
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
5.317	5.381	Tsivoglou	5
Reach Travel Time (days)			
0.236			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.024	6.71	1.65	5.32
0.047	6.52	1.61	5.34
0.071	6.33	1.58	5.36
0.094	6.15	1.55	5.40
0.118	5.98	1.52	5.43
0.141	5.81	1.50	5.47
0.165	5.64	1.47	5.52
0.188	5.48	1.44	5.57
0.212	5.33	1.41	5.62
0.236	5.18	1.38	5.68

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07J	7548	CONESTOGA RIVER (formerly CREEK)

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
59.570	0.427	22.233	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
19.041	0.562	33.878	0.173
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
4.89	0.957	1.26	0.831
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
5.908	8.059	Tsivoglou	5
Reach Travel Time (days)			
0.201			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.020	4.79	1.24	6.11
0.040	4.69	1.22	6.28
0.060	4.59	1.20	6.44
0.081	4.49	1.18	6.57
0.101	4.40	1.16	6.69
0.121	4.30	1.14	6.80
0.141	4.21	1.12	6.89
0.161	4.12	1.10	6.97
0.181	4.04	1.08	7.05
0.201	3.95	1.07	7.11

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
07J	7548	CONESTOGA RIVER (formerly 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
64.700	Elverson STP	11.42	12.32	11.42	11.8	4	4
63.000	Twin Valley	15.34	50	13.04	47.88	4	4
61.200	Conestoga Land	15.73	50	14.47	47.88	4	4
60.250	New Morgan	14.67	45.76	13.61	43.81	4	4
59.570		NA	NA	13.4	NA	NA	NA

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
64.700	Elverson STP	1.43	1.67	1.43	1.1	4	34
63.000	Twin Valley	1.82	16.04	1.65	10.5	4	35
61.200	Conestoga Land	1.84	23.41	1.77	15.33	4	35
60.250	New Morgan	1.78	9.79	1.7	6.41	4	35
59.570		NA	NA	1.66	NA	NA	NA

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)		
64.70	Elverson STP	25	25	1.1	1.1	5	5	0	0
63.00	Twin Valley	25	25	10.5	10.5	5	5	0	0
61.20	Conestoga Land	22.5	22.5	8.23	8.23	5	5	0	0
60.25	New Morgan	25	25	6.41	6.41	5	5	0	0
59.57		NA	NA	NA	NA	NA	NA	NA	NA

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
07J	7548	CONESTOGA RIVER (formerly 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)
64.700	Elverson STP	PA0052078	0.125	CBOD5	25		
				NH3-N	1.1	2.2	
				Dissolved Oxygen			5

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)
63.000	Twin Valley	PA0031631	0.027	CBOD5	25		
				NH3-N	10.5	21	
				Dissolved Oxygen			5

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)
61.200	Conestoga Land	PA0055328	0.075	CBOD5	22.5		
				NH3-N	8.23	16.46	
				Dissolved Oxygen			5

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)
60.250	New Morgan	PA0088048	0.200	CBOD5	25		
				NH3-N	6.41	12.82	
				Dissolved Oxygen			5

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **Conestoga Landfill** NPDES Permit No.: **PA0055328** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **IW & Sewage**

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
0.075	727	7						

					0 if left blank		*0.5 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		6777.93544			0.2685						
	Chloride (PWS)	mg/L		1999.03978			0.1782						
	Bromide	mg/L		18.4478428			0.5154						
	Sulfate (PWS)	mg/L		60.3576372			0.4042						
	Fluoride (PWS)	mg/L		0.56									
Group 2	Total Aluminum	µg/L		80									
	Total Antimony	mg/L		0.0218564			0.5332						
	Total Arsenic	mg/L		0.0203796			0.6471						
	Total Barium	µg/L		98									
	Total Beryllium	µg/L	<	20									
	Total Boron	µg/L		10100									
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L		104									
	Hexavalent Chromium	mg/L		0.0070476			0.8429						
	Total Cobalt	µg/L		25									
	Total Copper	mg/L		0.1231964			1.434						
	Free Cyanide	µg/L											
	Total Cyanide	µg/L		9									
	Dissolved Iron	mg/L		0.9513094			0.6681						
	Total Iron	mg/L		1.2229623			0.8529						
	Total Lead	µg/L	<	3									
	Total Manganese	mg/L		0.3935288			0.8224						
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		176									
	Total Phenols (Phenolics) (PWS)	µg/L		16									
	Total Selenium	µg/L		22									
	Total Silver	µg/L	<	1									
	Total Thallium	µg/L	<	0.5									
	Total Zinc	mg/L		0.0200532			1.0572						
	Total Molybdenum	µg/L		8									
	Acrolein	µg/L	<	2									
	Acrylamide	µg/L	<	0.1									
	Acrylonitrile	µg/L	<	0.5									
	Benzene	µg/L	<	0.5									
	Bromoform	µg/L	<	0.5									

Group 3	Carbon Tetrachloride	µg/L	<	0.5									
	Chlorobenzene	µg/L		0.5									
	Chlorodibromomethane	µg/L	<	0.5									
	Chloroethane	µg/L	<	0.5									
	2-Chloroethyl Vinyl Ether	µg/L	<	5									
	Chloroform	µg/L	<	0.5									
	Dichlorobromomethane	µg/L	<	0.5									
	1,1-Dichloroethane	µg/L	<	0.5									
	1,2-Dichloroethane	µg/L	<	0.5									
	1,1-Dichloroethylene	µg/L	<	0.5									
	1,2-Dichloropropane	µg/L	<	0.5									
	1,3-Dichloropropylene	µg/L	<	0.5									
	1,4-Dioxane	µg/L	<										
	Ethylbenzene	µg/L	<	0.5									
	Methyl Bromide	µg/L	<	0.5									
	Methyl Chloride	µg/L	<	0.5									
	Methylene Chloride	µg/L	<	0.5									
	1,1,2,2-Tetrachloroethane	µg/L	<	0.5									
	Tetrachloroethylene	µg/L	<	0.5									
	Toluene	µg/L	<	0.5									
	1,2-trans-Dichloroethylene	µg/L	<	0.5									
	1,1,1-Trichloroethane	µg/L	<	0.5									
	1,1,2-Trichloroethane	µg/L	<	0.5									
	Trichloroethylene	µg/L	<	0.5									
	Vinyl Chloride	µg/L	<	0.5									
Group 4	2-Chlorophenol	µg/L	<	10									
	2,4-Dichlorophenol	µg/L	<	10									
	2,4-Dimethylphenol	µg/L	<	10									
	4,6-Dinitro-o-Cresol	µg/L	<	10									
	2,4-Dinitrophenol	µg/L	<	10									
	2-Nitrophenol	µg/L	<	10									
	4-Nitrophenol	µg/L	<	10									
	p-Chloro-m-Cresol	µg/L	<	2.4									
	Pentachlorophenol	µg/L	<	10									
	Phenol	µg/L	<	1.4									
	2,4,6-Trichlorophenol	µg/L	<	10									
Group 5	Acenaphthene	µg/L	<	2.5									
	Acenaphthylene	µg/L	<	2.5									
	Anthracene	µg/L	<	2.5									
	Benzidine	µg/L	<	50									
	Benzo(a)Anthracene	µg/L	<	2.5									
	Benzo(a)Pyrene	µg/L	<	2.5									
	3,4-Benzofluoranthene	µg/L	<	2.5									
	Benzo(ghi)Perylene	µg/L	<	2.5									
	Benzo(k)Fluoranthene	µg/L	<	2.5									
	Bis(2-Chloroethoxy)Methane	µg/L	<	5									
	Bis(2-Chloroethyl)Ether	µg/L	<	5									
	Bis(2-Chloroisopropyl)Ether	µg/L	<	5									
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	5									
	4-Bromophenyl Phenyl Ether	µg/L	<	5									
	Butyl Benzyl Phthalate	µg/L	<	5									
	2-Chloronaphthalene	µg/L	<	5									
	4-Chlorophenyl Phenyl Ether	µg/L	<	5									
	Chrysene	µg/L	<	2.5									
	Dibenzo(a,h)Anthrancene	µg/L	<	2.5									
	1,2-Dichlorobenzene	µg/L	<	0.5									
	1,3-Dichlorobenzene	µg/L	<	0.5									
	1,4-Dichlorobenzene	µg/L	<	0.5									
	3,3-Dichlorobenzidine	µg/L	<	5									
	Diethyl Phthalate	µg/L	<	5									
	Dimethyl Phthalate	µg/L	<	5									
	Di-n-Butyl Phthalate	µg/L	<	5									
	2,4-Dinitrotoluene	µg/L	<	5									

	2,6-Dinitrotoluene	µg/L	<	5									
	Di-n-Octyl Phthalate	µg/L	<	5									
	1,2-Diphenylhydrazine	µg/L	<	5									
	Fluoranthene	µg/L	<	2.5									
	Fluorene	µg/L	<	2.5									
	Hexachlorobenzene	µg/L	<	5									
	Hexachlorobutadiene	µg/L	<	0.5									
	Hexachlorocyclopentadiene	µg/L	<	5									
	Hexachloroethane	µg/L	<	5									
	Indeno(1,2,3-cd)Pyrene	µg/L	<	2.5									
	Isophorone	µg/L	<	5									
	Naphthalene	µg/L	<	0.5									
	Nitrobenzene	µg/L	<	5									
	n-Nitrosodimethylamine	µg/L	<	5									
	n-Nitrosodi-n-Propylamine	µg/L	<	5									
	n-Nitrosodiphenylamine	µg/L	<	5									
	Phenanthrene	µg/L	<	2.5									
	Pyrene	µg/L	<	2.5									
	1,2,4-Trichlorobenzene	µg/L	<	0.5									
Group 6	Aldrin	µg/L	<	0.05									
	alpha-BHC	µg/L	<	0.05									
	beta-BHC	µg/L	<	0.05									
	gamma-BHC	µg/L	<	0.05									
	delta BHC	µg/L	<	0.05									
	Chlordane	µg/L	<	0.05									
	4,4-DDT	µg/L	<	0.05									
	4,4-DDE	µg/L	<	0.05									
	4,4-DDD	µg/L	<	0.05									
	Dieldrin	µg/L	<	0.05									
	alpha-Endosulfan	µg/L	<	0.05									
	beta-Endosulfan	µg/L	<	0.05									
	Endosulfan Sulfate	µg/L	<	0.05									
	Endrin	µg/L	<	0.05									
	Endrin Aldehyde	µg/L	<	0.05									
	Heptachlor	µg/L	<	0.05									
	Heptachlor Epoxide	µg/L	<	0.05									
	PCB-1016	µg/L	<	0.2									
	PCB-1221	µg/L	<	0.2									
	PCB-1232	µg/L	<	0.2									
	PCB-1242	µg/L	<	0.2									
	PCB-1248	µg/L	<	0.2									
	PCB-1254	µg/L	<	0.2									
	PCB-1260	µg/L	<	0.2									
	PCBs, Total	µg/L	<										
	Toxaphene	µg/L	<	0.05									
	2,3,7,8-TCDD	ng/L	<										
Group 7	Gross Alpha	pCi/L											
	Total Beta	pCi/L	<										
	Radium 226/228	pCi/L	<										
	Total Strontium	µg/L	<										
	Total Uranium	µg/L	<										
	Osmotic Pressure	mOs/kg											

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

Conestoga Landfill, NPDES Permit No. PA0055328, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Conestoga River**

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	007548	61.2	520	6.73			Yes
End of Reach 1	007548	60.25	519	6.93			Yes

$Q_{7\text{-}10}$

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	61.2	0.1	1									168	7		
End of Reach 1	60.25	0.1													

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	61.2														
End of Reach 1	60.25														

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

Conestoga Landfill, NPDES Permit No. PA0055328, Outfall 001

Instructions | Results | RETURN TO INPUTS | SAVE AS PDF | PRINT | ◉ All ○ Inputs ○ Results ○ Limits

Hydrodynamics

$Q_{7\text{-}10}$

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
61.2	1		1	0.116	0.0002	0.576	17.25	29.97	0.112	0.516	53.11
60.25	1.020		1.02								

Q_h

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
61.2	7.43		7.43	0.116	0.0002	1.334	17.25	12.926	0.328	0.177	18.165
60.25	7.56		7.56								

Wasteload Allocations

AFC CCT (min): 15 PMF: 0.531 Analysis Hardness (mg/l): 268.17 Analysis pH: 7.00

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	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	4,185	
Total Antimony	0	0		0	1,100	1,100	6,138	
Total Arsenic	0	0		0	340	340	1,897	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	117,189	
Total Boron	0	0		0	8,100	8,100	45,202	
Total Chromium (III)	0	0		0	1278.099	4,045	22,571	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	90.9	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	530	
Total Copper	0	0		0	34.042	35.5	198	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 Lead	0	0		0	185.515	287	1,599	Chem Translator of 0.647 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	9.19	Chem Translator of 0.85 applied
Total Nickel	0	0		0	1078.702	1,081	6,032	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	17.550	20.6	115	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	363	
Total Zinc	0	0		0	270.302	276	1,542	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	16.7	
Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	650	650	3,627	
Benzene	0	0		0	640	640	3,571	
Bromoform	0	0		0	1,800	1,800	10,045	
Carbon Tetrachloride	0	0		0	2,800	2,800	15,625	
Chlorobenzene	0	0		0	1,200	1,200	6,697	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	100,448	
Chloroform	0	0		0	1,900	1,900	10,603	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	83,707	
1,1-Dichloroethylene	0	0		0	7,500	7,500	41,853	
1,2-Dichloropropane	0	0		0	11,000	11,000	61,385	
1,3-Dichloropropylene	0	0		0	310	310	1,730	
Ethylbenzene	0	0		0	2,900	2,900	16,183	
Methyl Bromide	0	0		0	550	550	3,069	
Methyl Chloride	0	0		0	28,000	28,000	156,252	
Methylene Chloride	0	0		0	12,000	12,000	66,965	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	5,580	
Tetrachloroethylene	0	0		0	700	700	3,906	
Toluene	0	0		0	1,700	1,700	9,487	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	37,947	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	16,741	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	18,973	
Trichloroethylene	0	0		0	2,300	2,300	12,835	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	3,125	
2,4-Dichlorophenol	0	0		0	1,700	1,700	9,487	
2,4-Dimethylphenol	0	0		0	660	660	3,683	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	446	
2,4-Dinitrophenol	0	0		0	660	660	3,683	
2-Nitrophenol	0	0		0	8,000	8,000	44,643	
4-Nitrophenol	0	0		0	2,300	2,300	12,835	
p-Chloro-m-Cresol	0	0		0	160	160	893	
Pentachlorophenol	0	0		0	8.723	8.72	48.7	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	2,567	
Acenaphthene	0	0		0	83	83.0	463	
Anthracene	0	0		0	N/A	N/A	N/A	

Benzidine	0	0		0	300	300	1,674	
Benzo(a)Anthracene	0	0		0	0.5	0.5	2.79	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	30,000	30,000	167,413	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	25,112	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	1,507	
Butyl Benzyl Phthalate	0	0		0	140	140	781	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	820	820	4,576	
1,3-Dichlorobenzene	0	0		0	350	350	1,953	
1,4-Dichlorobenzene	0	0		0	730	730	4,074	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	22,322	
Dimethyl Phthalate	0	0		0	2,500	2,500	13,951	
Di-n-Butyl Phthalate	0	0		0	110	110	614	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	8,929	
2,6-Dinitrotoluene	0	0		0	990	990	5,525	
1,2-Diphenylhydrazine	0	0		0	15	15.0	83.7	
Fluoranthene	0	0		0	200	200	1,116	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	10	10.0	55.8	
Hexachlorocyclopentadiene	0	0		0	5	5.0	27.9	
Hexachloroethane	0	0		0	60	60.0	335	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	55,804	
Naphthalene	0	0		0	140	140	781	
Nitrobenzene	0	0		0	4,000	4,000	22,322	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	94,867	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	1,674	
Phenanthrene	0	0		0	5	5.0	27.9	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	725	
Aldrin	0	0		0	3	3.0	16.7	
alpha-BHC	0	0		0	N/A	N/A	N/A	
beta-BHC	0	0		0	N/A	N/A	N/A	
gamma-BHC	0	0		0	0.95	0.95	5.3	
Chlordane	0	0		0	2.4	2.4	13.4	
4,4-DDT	0	0		0	1.1	1.1	6.14	
4,4-DDE	0	0		0	1.1	1.1	6.14	
4,4-DDD	0	0		0	1.1	1.1	6.14	
Dieldrin	0	0		0	0.24	0.24	1.34	
alpha-Endosulfan	0	0		0	0.22	0.22	1.23	

beta-Endosulfan	0	0		0	0.22	0.22	1.23	
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A	
Endrin	0	0		0	0.086	0.086	0.48	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.52	0.52	2.9	
Heptachlor Epoxide	0	0		0	0.5	0.5	2.79	
Toxaphene	0	0		0	0.73	0.73	4.07	

☑ ***CFC*** CCT (min): 53.110 PMF: 1 Analysis Hardness (mg/l): 226.12 Analysis pH: 7.00

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	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	2,116	
Total Arsenic	0	0		0	150	150	1,443	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	39,437	
Total Boron	0	0		0	1,600	1,600	15,390	
Total Chromium (III)	0	0		0	144.577	168	1,617	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	100.0	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	183	
Total Copper	0	0		0	17.984	18.7	180	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	14,428	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	6.042	8.99	86.5	Chem Translator of 0.672 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	8.71	Chem Translator of 0.85 applied
Total Nickel	0	0		0	103.710	104	1,001	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	48.0	Chem Translator of 0.922 applied
Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	125	
Total Zinc	0	0		0	235.840	239	2,301	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	28.9	
Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	130	130	1,250	
Benzene	0	0		0	130	130	1,250	
Bromoform	0	0		0	370	370	3,559	
Carbon Tetrachloride	0	0		0	560	560	5,387	
Chlorobenzene	0	0		0	240	240	2,309	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	33,666	
Chloroform	0	0		0	390	390	3,751	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	

1,2-Dichloroethane	0	0		0	3,100	3,100	29,818	
1,1-Dichloroethylene	0	0		0	1,500	1,500	14,428	
1,2-Dichloropropane	0	0		0	2,200	2,200	21,161	
1,3-Dichloropropylene	0	0		0	61	61.0	587	
Ethylbenzene	0	0		0	580	580	5,579	
Methyl Bromide	0	0		0	110	110	1,058	
Methyl Chloride	0	0		0	5,500	5,500	52,904	
Methylene Chloride	0	0		0	2,400	2,400	23,085	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	2,020	
Tetrachloroethylene	0	0		0	140	140	1,347	
Toluene	0	0		0	330	330	3,174	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	13,466	
1,1,1-Trichloroethane	0	0		0	610	610	5,867	
1,1,2-Trichloroethane	0	0		0	680	680	6,541	
Trichloroethylene	0	0		0	450	450	4,328	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	1,058	
2,4-Dichlorophenol	0	0		0	340	340	3,270	
2,4-Dimethylphenol	0	0		0	130	130	1,250	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	154	
2,4-Dinitrophenol	0	0		0	130	130	1,250	
2-Nitrophenol	0	0		0	1,600	1,600	15,390	
4-Nitrophenol	0	0		0	470	470	4,521	
p-Chloro-m-Cresol	0	0		0	500	500	4,809	
Pentachlorophenol	0	0		0	6.693	6.69	64.4	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	875	
Acenaphthene	0	0		0	17	17.0	164	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	568	
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.96	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	6,000	6,000	57,713	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	8,753	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	519	
Butyl Benzyl Phthalate	0	0		0	35	35.0	337	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	160	160	1,539	
1,3-Dichlorobenzene	0	0		0	69	69.0	664	
1,4-Dichlorobenzene	0	0		0	150	150	1,443	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	7,695	

Dimethyl Phthalate	0	0		0	500	500	4,809	
Di-n-Butyl Phthalate	0	0		0	21	21.0	202	
2,4-Dinitrotoluene	0	0		0	320	320	3,078	
2,6-Dinitrotoluene	0	0		0	200	200	1,924	
1,2-Diphenylhydrazine	0	0		0	3	3.0	28.9	
Fluoranthene	0	0		0	40	40.0	385	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	2	2.0	19.2	
Hexachlorocyclopentadiene	0	0		0	1	1.0	9.62	
Hexachloroethane	0	0		0	12	12.0	115	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	20,200	
Naphthalene	0	0		0	43	43.0	414	
Nitrobenzene	0	0		0	810	810	7,791	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	32,704	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	568	
Phenanthrene	0	0		0	1	1.0	9.62	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	250	
Aldrin	0	0		0	0.1	0.1	0.96	
alpha-BHC	0	0		0	N/A	N/A	N/A	
beta-BHC	0	0		0	N/A	N/A	N/A	
gamma-BHC	0	0		0	N/A	N/A	N/A	
Chlordane	0	0		0	0.0043	0.004	0.041	
4,4-DDT	0	0		0	0.001	0.001	0.01	
4,4-DDE	0	0		0	0.001	0.001	0.01	
4,4-DDD	0	0		0	0.001	0.001	0.01	
Dieldrin	0	0		0	0.056	0.056	0.54	
alpha-Endosulfan	0	0		0	0.056	0.056	0.54	
beta-Endosulfan	0	0		0	0.056	0.056	0.54	
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A	
Endrin	0	0		0	0.036	0.036	0.35	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.0038	0.004	0.037	
Heptachlor Epoxide	0	0		0	0.0038	0.004	0.037	
Toxaphene	0	0		0	0.0002	0.0002	0.002	

☑ ***THH*** CCT (min): 53.110 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	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	

Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	53.9	
Total Arsenic	0	0		0	10	10.0	96.2	
Total Barium	0	0		0	2,400	2,400	23,085	
Total Boron	0	0		0	3,100	3,100	29,818	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	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	300	300	2,886	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	9,619	
Total Mercury	0	0		0	0.050	0.05	0.48	
Total Nickel	0	0		0	610	610	5,867	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	2.31	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	28.9	
Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	N/A	N/A	N/A	
Benzene	0	0		0	N/A	N/A	N/A	
Bromoform	0	0		0	N/A	N/A	N/A	
Carbon Tetrachloride	0	0		0	N/A	N/A	N/A	
Chlorobenzene	0	0		0	100	100.0	962	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	N/A	N/A	N/A	
1,1-Dichloroethylene	0	0		0	33	33.0	317	
1,2-Dichloropropane	0	0		0	N/A	N/A	N/A	
1,3-Dichloropropylene	0	0		0	N/A	N/A	N/A	
Ethylbenzene	0	0		0	68	68.0	654	
Methyl Bromide	0	0		0	100	100.0	962	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	N/A	N/A	N/A	
1,1,2,2-Tetrachloroethane	0	0		0	N/A	N/A	N/A	
Tetrachloroethylene	0	0		0	N/A	N/A	N/A	
Toluene	0	0		0	57	57.0	548	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	962	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	96,188	
1,1,2-Trichloroethane	0	0		0	N/A	N/A	N/A	
Trichloroethylene	0	0		0	N/A	N/A	N/A	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	

2-Chlorophenol	0	0		0	30	30.0	289	
2,4-Dichlorophenol	0	0		0	10	10.0	96.2	
2,4-Dimethylphenol	0	0		0	100	100.0	962	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	19.2	
2,4-Dinitrophenol	0	0		0	10	10.0	96.2	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	N/A	N/A	N/A	
Phenol	0	0		0	4,000	4,000	38,475	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	673	
Anthracene	0	0		0	300	300	2,886	
Benzidine	0	0		0	N/A	N/A	N/A	
Benzo(a)Anthracene	0	0		0	N/A	N/A	N/A	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroisopropyl)Ether	0	0		0	200	200	1,924	
Bis(2-Ethylhexyl)Phthalate	0	0		0	N/A	N/A	N/A	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	0.1	0.1	0.96	
2-Chloronaphthalene	0	0		0	800	800	7,695	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	1,000	1,000	9,619	
1,3-Dichlorobenzene	0	0		0	7	7.0	67.3	
1,4-Dichlorobenzene	0	0		0	300	300	2,886	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	5,771	
Dimethyl Phthalate	0	0		0	2,000	2,000	19,238	
Di-n-Butyl Phthalate	0	0		0	20	20.0	192	
2,4-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
2,6-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
1,2-Diphenylhydrazine	0	0		0	N/A	N/A	N/A	
Fluoranthene	0	0		0	20	20.0	192	
Fluorene	0	0		0	50	50.0	481	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	N/A	N/A	N/A	
Hexachlorocyclopentadiene	0	0		0	4	4.0	38.5	
Hexachloroethane	0	0		0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	34	34.0	327	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	96.2	
n-Nitrosodimethylamine	0	0		0	N/A	N/A	N/A	

n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	N/A	N/A	N/A	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	20	20.0	192	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	0.67	
Aldrin	0	0		0	N/A	N/A	N/A	
alpha-BHC	0	0		0	N/A	N/A	N/A	
beta-BHC	0	0		0	N/A	N/A	N/A	
gamma-BHC	0	0		0	4.2	4.2	40.4	
Chlordane	0	0		0	N/A	N/A	N/A	
4,4-DDT	0	0		0	N/A	N/A	N/A	
4,4-DDE	0	0		0	N/A	N/A	N/A	
4,4-DDD	0	0		0	N/A	N/A	N/A	
Dieldrin	0	0		0	N/A	N/A	N/A	
alpha-Endosulfan	0	0		0	20	20.0	192	
beta-Endosulfan	0	0		0	20	20.0	192	
Endosulfan Sulfate	0	0		0	20	20.0	192	
Endrin	0	0		0	0.03	0.03	0.29	
Endrin Aldehyde	0	0		0	1	1.0	9.62	
Heptachlor	0	0		0	N/A	N/A	N/A	
Heptachlor Epoxide	0	0		0	N/A	N/A	N/A	
Toxaphene	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 18.165 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	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	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 Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	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 Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	

Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylamide	0	0		0	0.07	0.07	4.55	
Acrylonitrile	0	0		0	0.06	0.06	3.9	
Benzene	0	0		0	0.58	0.58	37.7	
Bromoform	0	0		0	7	7.0	455	
Carbon Tetrachloride	0	0		0	0.4	0.4	26.0	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	52.0	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	371	
Dichlorobromomethane	0	0		0	0.95	0.95	61.8	
1,2-Dichloroethane	0	0		0	9.9	9.9	644	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	58.5	
1,3-Dichloropropylene	0	0		0	0.27	0.27	17.6	
Ethylbenzene	0	0		0	N/A	N/A	N/A	
Methyl Bromide	0	0		0	N/A	N/A	N/A	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	20	20.0	1,301	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	13.0	
Tetrachloroethylene	0	0		0	10	10.0	650	
Toluene	0	0		0	N/A	N/A	N/A	
1,2-trans-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A	
1,1,2-Trichloroethane	0	0		0	0.55	0.55	35.8	
Trichloroethylene	0	0		0	0.6	0.6	39.0	
Vinyl Chloride	0	0		0	0.02	0.02	1.3	
2-Chlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A	
4,6-Dinitro-o-Cresol	0	0		0	N/A	N/A	N/A	
2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	0.030	0.03	1.95	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	97.6	
Acenaphthene	0	0		0	N/A	N/A	N/A	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	0.0001	0.0001	0.007	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.065	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.007	

3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.065	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.65	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	1.95	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	20.8	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	0.12	0.12	7.8	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.007	
1,2-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,3-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,4-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	3.25	
Diethyl Phthalate	0	0		0	N/A	N/A	N/A	
Dimethyl Phthalate	0	0		0	N/A	N/A	N/A	
Di-n-Butyl Phthalate	0	0		0	N/A	N/A	N/A	
2,4-Dinitrotoluene	0	0		0	0.05	0.05	3.25	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	3.25	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	1.95	
Fluoranthene	0	0		0	N/A	N/A	N/A	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	0.00008	0.00008	0.005	
Hexachlorobutadiene	0	0		0	0.01	0.01	0.65	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	6.5	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.065	
Isophorone	0	0		0	N/A	N/A	N/A	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	N/A	N/A	N/A	
n-Nitrosodimethylamine	0	0		0	0.0007	0.0007	0.046	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.33	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	215	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	N/A	N/A	N/A	
Aldrin	0	0		0	0.0000008	8.00E-07	0.00005	
alpha-BHC	0	0		0	0.0004	0.0004	0.026	
beta-BHC	0	0		0	0.008	0.008	0.52	
gamma-BHC	0	0		0	N/A	N/A	N/A	
Chlordane	0	0		0	0.0003	0.0003	0.02	
4,4-DDT	0	0		0	0.00003	0.00003	0.002	
4,4-DDE	0	0		0	0.00002	0.00002	0.001	
4,4-DDD	0	0		0	0.0001	0.0001	0.007	
Dieldrin	0	0		0	0.000001	0.000001	0.00007	
alpha-Endosulfan	0	0		0	N/A	N/A	N/A	
beta-Endosulfan	0	0		0	N/A	N/A	N/A	

Endosulfan Sulfate	0	0		0	N/A	N/A	N/A	
Endrin	0	0		0	N/A	N/A	N/A	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.000006	0.000006	0.0004	
Heptachlor Epoxide	0	0		0	0.00003	0.00003	0.002	
Toxaphene	0	0		0	0.0007	0.0007	0.046	

☑ ***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 Antimony	Report	Report	Report	Report	Report	mg/L	0.054	THH	Discharge Conc > 10% WQBEL (no RP)
Total Arsenic	Report	Report	Report	Report	Report	mg/L	0.096	THH	Discharge Conc > 10% WQBEL (no RP)
Total Boron	9.63	15.0	15,390	24,011	38,475	µg/L	15,390	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Cobalt	Report	Report	Report	Report	Report	µg/L	183	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Copper	0.11	0.21	0.18	0.33	0.45	mg/L	0.18	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Dissolved Iron	Report	Report	Report	Report	Report	mg/L	2.89	THH	Discharge Conc > 10% WQBEL (no RP)
Total Nickel	Report	Report	Report	Report	Report	µg/L	1,001	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Selenium	Report	Report	Report	Report	Report	µg/L	48.0	CFC	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
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Aluminum	2,683	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	23,085	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Chromium (III)	1,617	µg/L	Discharge Conc ≤ 10% WQBEL
Hexavalent Chromium	0.08	mg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Total Iron	14.4	mg/L	Discharge Conc ≤ 10% WQBEL

Total Lead	86.5	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	9.62	mg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.48	µg/L	Discharge Conc < TQL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Silver	73.9	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	2.31	µg/L	Discharge Conc < TQL
Total Zinc	1.61	mg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	10.7	µg/L	Discharge Conc < TQL
Acrylamide	4.55	µg/L	Discharge Conc < TQL
Acrylonitrile	3.9	µg/L	Discharge Conc < TQL
Benzene	37.7	µg/L	Discharge Conc < TQL
Bromoform	455	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	26.0	µg/L	Discharge Conc < TQL
Chlorobenzene	962	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorodibromomethane	52.0	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	33,666	µg/L	Discharge Conc < TQL
Chloroform	371	µg/L	Discharge Conc < TQL
Dichlorobromomethane	61.8	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	644	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	317	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	58.5	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	17.6	µg/L	Discharge Conc < TQL
Ethylbenzene	654	µg/L	Discharge Conc < TQL
Methyl Bromide	962	µg/L	Discharge Conc < TQL
Methyl Chloride	52,904	µg/L	Discharge Conc < TQL
Methylene Chloride	1,301	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	13.0	µg/L	Discharge Conc < TQL
Tetrachloroethylene	650	µg/L	Discharge Conc < TQL
Toluene	548	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	962	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	5,867	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	35.8	µg/L	Discharge Conc < TQL
Trichloroethylene	39.0	µg/L	Discharge Conc < TQL
Vinyl Chloride	1.3	µg/L	Discharge Conc < TQL
2-Chlorophenol	289	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	96.2	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	962	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	19.2	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	96.2	µg/L	Discharge Conc < TQL
2-Nitrophenol	15,390	µg/L	Discharge Conc < TQL
4-Nitrophenol	4,521	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	572	µg/L	Discharge Conc < TQL
Pentachlorophenol	1.95	µg/L	Discharge Conc < TQL
Phenol	38,475	µg/L	Discharge Conc < TQL

2,4,6-Trichlorophenol	97.6	µg/L	Discharge Conc < TQL
Acenaphthene	164	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	2,886	µg/L	Discharge Conc < TQL
Benzidine	0.007	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.065	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.007	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.065	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	0.65	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	1.95	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	1,924	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	20.8	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	519	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	0.96	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	7,695	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	7.8	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.007	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	1,539	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	67.3	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	1,443	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	3.25	µg/L	Discharge Conc < TQL
Diethyl Phthalate	5,771	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	4,809	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	192	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	3.25	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	3.25	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	1.95	µg/L	Discharge Conc < TQL
Fluoranthene	192	µg/L	Discharge Conc < TQL
Fluorene	481	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.005	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.65	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	9.62	µg/L	Discharge Conc < TQL
Hexachloroethane	6.5	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.065	µg/L	Discharge Conc < TQL
Isophorone	327	µg/L	Discharge Conc < TQL
Naphthalene	414	µg/L	Discharge Conc < TQL
Nitrobenzene	96.2	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.046	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.33	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	215	µg/L	Discharge Conc < TQL
Phenanthrene	9.62	µg/L	Discharge Conc < TQL
Pyrene	192	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	0.67	µg/L	Discharge Conc < TQL

Aldrin	0.00005	µg/L	Discharge Conc < TQL
alpha-BHC	0.026	µg/L	Discharge Conc < TQL
beta-BHC	0.52	µg/L	Discharge Conc < TQL
gamma-BHC	3.4	µg/L	Discharge Conc < TQL
delta BHC	N/A	N/A	No WQS
Chlordane	0.02	µg/L	Discharge Conc < TQL
4,4-DDT	0.002	µg/L	Discharge Conc < TQL
4,4-DDE	0.001	µg/L	Discharge Conc < TQL
4,4-DDD	0.007	µg/L	Discharge Conc < TQL
Dieldrin	0.00007	µg/L	Discharge Conc < TQL
alpha-Endosulfan	0.54	µg/L	Discharge Conc < TQL
beta-Endosulfan	0.54	µg/L	Discharge Conc < TQL
Endosulfan Sulfate	192	µg/L	Discharge Conc < TQL
Endrin	0.29	µg/L	Discharge Conc < TQL
Endrin Aldehyde	9.62	µg/L	Discharge Conc < TQL
Heptachlor	0.0004	µg/L	Discharge Conc < TQL
Heptachlor Epoxide	0.002	µg/L	Discharge Conc < TQL
PCB-1016	N/A	N/A	No WQS
PCB-1221	N/A	N/A	No WQS
PCB-1232	N/A	N/A	No WQS
PCB-1242	N/A	N/A	No WQS
PCB-1248	N/A	N/A	No WQS
PCB-1254	N/A	N/A	No WQS
PCB-1260	N/A	N/A	No WQS
Toxaphene	0.002	µg/L	Discharge Conc < TQL