

Application Type Renewal
 Facility Type Sewage
 Major / Minor Major

**NPDES PERMIT FACT SHEET
ADDENDUM**

Application No. PA0023043
 APS ID 993815
 Authorization ID 1274266

Applicant and Facility Information

Applicant Name	<u>North East Borough</u>	Facility Name	<u>North East Borough STP</u>
Applicant Address	<u>31 West Main Street</u> <u>North East, PA 16428-1135</u>	Facility Address	<u>North Mill Street</u> <u>North East, PA 16428</u>
Applicant Contact	<u>Patrick Gehrlein</u>	Facility Contact	<u>Mike Cucumber</u>
Applicant Phone	<u>(814) 725-8611</u>	Facility Phone	<u>(814) 725-4294</u>
Client ID	<u>123365</u>	Site ID	<u>450416</u>
SIC Code	<u>4952</u>	Municipality	<u>North East Borough</u>
SIC Description	<u>Trans. & Utilities - Sewerage Systems</u>	County	<u>Erie</u>
Date Published in PA Bulletin	<u>January 9, 2021</u>	EPA Waived?	<u>No</u>
Comment Period End Date	<u>February 8, 2021</u>	If No, Reason	<u>Major Sewage Facility</u>
Purpose of Application	<u>Renewal of a NPDES Permit for an existing discharge of sewage from a POTW</u>		

Internal Review and Recommendations

The permittee submitted a comment letter on the draft permit in an email (both attached) dated January 4th, 2021. Below are their comments and the Department's corresponding responses.

Comment 1) The monitoring requirements for Outfall 001 (Emergency Discharge to Sixteen Mile Creek) are listed as 1/discharge or 2/discharge. This sampling frequency would be confusing if the discharge lasts longer than a couple of days. We suggest adding a condition to the Permit to require the same measurement frequency and sample type for the same parameters as listed for Outfall 002, if the discharge lasts longer than 48 consecutive hours.

Response 1) The permit was written with the expectation that Outfall 001 will only operate for infrequent and short periods of time under the premise that it is an "emergency outfall." In addition, the Department must ensure the protection of the receiving stream whenever a discharge occurs regardless of how often or how long the discharge occurs. A special condition will not be added to the permit that exempts the permittee from sampling if a discharge lasts less than 48 hours. The Department does somewhat understand though that the existing monitoring frequencies could be confusing to the permittee if the discharge does occur for multiple days (and perhaps excessive if less than 48 hours), and therefore will replace them with "1/day when discharging," "1/week when discharging," and "1/month when discharging."

Comment 2) For Outfall 002, we request that the monitoring frequency for Total Nitrogen be revised to one (1) per quarter, as listed in the existing Permit. At this frequency, the sampling will provide a substantial amount of data during the life of the permit without the Borough incurring unnecessary cost to provide the Department with general information.

Response 2) The monitoring frequency for total nitrogen is comparable to the sampling frequency being placed in permits for similarly sized (design flow) sewage treatment plants where the receiving waterbody is not impaired for nutrients. No changes will be made to the monitoring frequency for total nitrogen in the permit.

Comment 3) For Outfall 002, we request that the proposed limits for Ammonia-Nitrogen be eliminated, as they are not contained

Approve	Return	Deny	Signatures	Date
X			Adam Pesek Adam J. Pesek, E.I.T. / Environmental Engineer	August 5, 2021
X			Justin C. Dickey Justin C. Dickey, P.E. / Environmental Engineer Manager	August 9, 2021

Internal Review and Recommendations

in the existing Permit for this Outfall. While the Department would like to implement the 2017 ammonia criteria for this permit iteration, unlike most other effluent discharges, the depth of the discharge in Lake Erie of 25 feet is outside the littoral zone where it could have any impact on the early life cycles of the species that are the primary basis of these new limits, nor the invertebrates. It should also be noted that while the EPA in its original research discussed the significance of the Oncorhynchus (salmonoids) adults which the permittee noted are present in Lake Erie, further consideration should give consideration that these fish are transient and would not remain in the immediate area of the outfall anywhere near long enough to incur any chronic effects before moving either out to deeper water or near shore for their spawning run.

Response 3) Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected. There are no exceptions to the protected water uses for the receiving waterbody for ammonia nitrogen listed in 25 Pa. Code § 93.9x. Therefore, ammonia nitrogen criteria found in 25 Pa. Code § 93.7(a) must be applied. No changes were made to the permit as a result of this comment.

Comment 4) For Outfall 002, we request that monitoring requirements for Cadmium be set at quarterly sampling instead of the onerous frequency proposed in the draft permit. Based on a review of the water quality modeling that accompanied the draft, the requirement for monitoring is as a result of a comparison of the Borough's highest sampling result to the potential permit limit (WQBEL). Since the comparison showed that the single sample was above 10 percent of the governing WQBEL, the permitting procedures determine that monitoring of cadmium was warranted. However, since the maximum concentration was only 11 percent of the potential permit limit (WQBEL), and all other samples were far below that value, it seems unlikely that requiring sampling more than on a quarterly basis would result in useful information and is more likely to be punitive. It should be noted, that based on subsequent analysis results for cadmium, which are enclosed, all sample results have been below the PADEP quantification limit. Based on past sample analysis for Cadmium and the dilution provided by Lake Erie, twice per month monitoring is excessive and unnecessarily expensive.

Response 4) Table 6-3 of the Department's "Permit Writers Manual (362-0400-001)" suggests 1/week monitoring frequency for toxic pollutants for sewage discharges with design flows of 1.0 to 5.0 MGD. Because toxic modeling did not determine reasonable potential to exceed the calculated WQBEL, the permit writer used his discretion in setting a reduced monitoring frequency for cadmium based on considerations for site specific factors such as the plant design flow, effluent quality variability, industrial users, and application and additional effluent data, etc. in the draft NPDES Permit. No changes were made to the permit as a result of this comment.

Comment 5) We request elimination of the Whole Effluent Toxicity (WET) test requirements for Outfall 002. WET testing is not required in the existing Permit for discharge to Lake Erie. The Draft Permit does not contain any Chronic Toxicity (TUC) limits for Ceriodaphnia or Pimephales. The Department's fact sheet states that the discharge should easily be able to pass WET testing limits. At a minimum, we suggest WET testing be eliminated after two (2) consecutive tests that pass the Department's criteria

Response 5) WET testing is a requirement for (1) all POTWs with a design flow rate equal to or greater than one million gallons per day under 40 CFR 122.21(j)(5)(ii)(A), (2) all POTWs with approved pretreatment programs under 40 CFR 122.21(j)(5)(ii)(B), (3) sewage dischargers (publicly and privately owned) with design influent flows equal to or greater than 1.0 million gallons per day under 25 Pa. Code § 92a.27.A(1)(i), and (4) sewage dischargers publicly and privately owned) with approved pretreatment programs or who are required to develop a pretreatment program under 25 Pa. Code § 92a.27.A(1)(ii). This facility meets all the above criteria and therefore must conduct WET testing for the Lake Erie discharge as part of their renewed NPDES Permit. WET testing requirements in the draft NPDES Permit were set in accordance with the Department's SOP entitled "Whole Effluent Toxicity (SOP No. BPNPSM-PMT-031)." No changes to the permit were made as a result of this comment.

EPA Region III submitted on comment on the draft permit in an email dated January 27, 2021 (attached). Below is their comment and the Department's corresponding response.

Comment 1) Per your phone and email conversations with Dana Hales, it was discussed that the need for this permit to include WET limits for outfall 001 were related to the Great Lakes Initiative requirements. In short, the permit must meet the Great Lakes RP analysis requirements in the federal regulations (Appendix F of Part 132, Procedure 6, Section D). Previous discussions with DEP surrounding this facility's WET RP analysis resulted in a determination that WET limits were warranted in the permit – the size of the data set needed to show that DEP's RP analysis was equivalent to the Great Lakes RP analysis requirements was so large that WET limits were determined to be necessary for the life of the permit (I have attached an historic email between PADEP and EPA that led to this conclusion). With that said, it is acknowledged that outfall 001 is now

Internal Review and Recommendations

considered an emergency outfall that is not expected to discharge frequently, and the WET limits were removed from the permit. As discussed with Dana Hales, the following is a summary of the recommendations for this permit cycle regarding WET expectations for outfall 001:

- a. This permit cycle should be used to evaluate the frequency and duration of discharges from 001.
 - i. Depending on the frequency with which the outfall is used, it may be necessary to re-impose WET limits in the permit. PADEP could consider adding a re-opener clause in the permit to address this possibility. An appropriate threshold would need to be considered, but EPA suggested a discharge from 001 of 4 times per permit cycle or more, as this is the minimum amount of data required to be submitted in a permit application for to evaluate RP for WET.
 - ii. As chronic limits were previously imposed, the duration of the discharge should be understood to determine if chronic or acute limits would be most appropriate, if necessitated. PADEP suggested a Part C. condition to record and report the duration of discharges from 001.

Response 1) The Department concurs with the findings of this comment. As a result, reporting for the parameters “flow duration” and “number of events” will be added to Outfall 001 in Part A of the permit. In addition, language was added to the “Emergency Outfall” condition in Part C.V. of the permit requiring the permittee to notify the Department if, and when, four discharge events occur within the permit term so that the need for WET limits can be assessed. A re-opener clause will not be added to the permit in Part C, as the language would be redundant to that already found in Part B.I.B. of the permit.

25 Pa. Code § 93 water quality criteria for ammonia nitrogen was updated and new water quality criteria for E. Coli was added since the first draft permit was published. As a result, the ammonia nitrogen limits at Outfall 001 and 002 were recalculated resulting in less stringent limits being determined for both outfalls (see attached modeling and spreadsheet). Therefore, the ammonia nitrogen limits at Outfall 002 reverted back to the limits in the previous permit (due to anti-backsliding provisions) and the newly calculated limits were applied at Outfall 001. Monitoring for E. Coli was also added at Outfall 001 in accordance with the Department’s SOP entitled “Establishing Effluent Limitations for Individual Sewage Permits,” which was revised on March 24, 2021 after the Chapter 93 revision. Below is a summary of these changes to the permit.

Outfall 001

Ammonia-Nitrogen Nov 1 - Apr 30	123.3	XXX	XXX	5.1	XXX	10.2
Ammonia-Nitrogen May 1 - Oct 31	41.1	XXX	XXX	1.7	XXX	3.4
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report

Outfall 002

Ammonia-Nitrogen Nov 1 - Apr 30	362	XXX	XXX	15.0	XXX	30.0
Ammonia-Nitrogen May 1 - Oct 31	120	XXX	XXX	5.0	XXX	10.0

Due to changes to the draft permit as a result of these comments and new permitting decisions, the permit will be redrafted for public comment.

There are currently no open violations listed in EFACTS for this permittee (8/2/2021).

Pesek, Adam

From: Gus Maas <gmaas@gpinet.com>
Sent: Monday, January 4, 2021 9:53 AM
To: Pesek, Adam; Dickey, Justin
Cc: Patrick Gehrlein; Julio Pazmino; Rick Dodds
Subject: [External] Comments on draft NPDES PERMIT PA0023043 for North East Borough
Attachments: Wstewater NPDES Permit No PA0023043 - 01042021.pdf; Cadmium Data.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.

Justin and Adam;

Attached is a letter with comments on the draft NPDES Permit for North East Borough and cadmium data referenced in letter.

A hard copy of letter and data is in the mail.

Please contact me at 814-392-3476 or my email if you have any questions or would like to discuss these comments.

Thank you and have a Happy New Year !

August E. Maas, P.E.
Executive Vice President / Senior Project Manager

8 Gibson Street, North East, PA 16428
d +1 (814) 314-2873 | c +1 (814) 392-3476
gmaas@gpinet.com | www.gpinet.com



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Borough of North East

31 West Main Street
North East, PA 16428
(814) 725-8611 • Fax (814) 725-4996

January 4, 2021

Mr. Justin C. Dickey, P.E., Environmental Engineer Manager
PA Department of Protection
Northwest Regional Office
230 Chestnut Street
Meadville, PA 16335

Reference: Draft NPDES Permit No. PA0023043
North East Borough
Erie County, Pennsylvania

Dear Mr. Dickey:

We received the Draft NPDES Permit No. PA0023043 and have the following comments:

1. The monitoring requirements for Outfall No. 001 (Emergency Discharge to Sixteen Mile Creek) are listed as 1/dischARGE or 2/dischARGE. This sample frequency would be confusing if the discharge lasts longer than a couple of days. We suggest adding a condition to the Permit to require the same measurement frequency and sample type for the same parameters as listed for Outfall No. 002, if the discharge lasts longer than 48 consecutive hours.
2. For Outfall No. 002, we request that the monitoring frequency for Total Nitrogen be revised to one (1) per quarter, as listed in the existing Permit. At this frequency, the sampling will provide a substantial amount of data during the life of the permit without the Borough incurring unnecessary costs to provide the Department with general information.
3. For Outfall No. 002, we request that the proposed limits for Ammonia-Nitrogen be eliminated, as they are not contained in the existing Permit for this Outfall. While the Department would like to implement the 2017 ammonia criteria for this permit iteration, unlike most other effluent

discharges, the depth of the discharge in Lake Erie of 25 feet is outside of the littoral zone where it could have any impact on the early life cycles of the species that are the primary basis of these new limits, nor the invertebrates. It should also be noted that while the EPA in its original research discussed the significance of the *Oncorhynchus* (salmonids) adults which the permit writer noted are present in Lake Erie, further consideration should give consideration that these fish are transient and would not remain in the immediate area of the outfall anywhere near long enough to incur any chronic effects before moving either out to deeper water or near shore for their spawning run.

4. For Outfall No. 002, we request that the monitoring requirements for Cadmium be set at quarterly sampling instead of the onerous frequency proposed in the draft permit. Based on a review of the water quality modeling that accompanied the draft, the requirement for monitoring is as a result of a comparison of the Borough's highest sampling result to the potential permit limit (WQBEL). Since the comparison showed that the single sample was above 10 percent of the governing WQBEL, the permitting procedures determine that monitoring of cadmium was warranted. However, since the maximum concentration was only 11 percent of the potential permit limit (WQBEL), and all other samples were far below that value, it seems unlikely that requiring sampling more than on a quarterly basis would result in useful information and is more likely to be punitive. It should be noted, that based on subsequent analysis results for Cadmium, which are enclosed, all sample results have been below the PA DEP quantification limit. Based on past sample analysis for Cadmium and the dilution provided by Lake Erie, twice per month monitoring is excessive and unnecessarily expensive.
5. We request elimination of the Whole Effluent Toxicity (WET) test requirements for Outfall No. 002. WET testing is not required in the existing Permit for discharge to Lake Erie. The Draft Permit does not contain any Chronic Toxicity (TUC) limits for Ceriodaphnia or Pimephales. The Department's fact sheet states that the discharge should easily be able to pass WET testing limits. At a minimum, we suggest WET testing be eliminated after two (2) consecutive tests that pass the Department's criteria.

Thank you for your attention to this matter.

If you have any questions, please contact our Engineer – Gus Maas, P.E. of GPI at 814-392-3476.

Sincerely,

NORTH EAST BOROUGH



Patrick J. Gehrlein, Borough Manager

Enclosure

cc: Julio Pazmino, Superintendent
Adam Pesek, PA DEP
Gus Maas, P.E, GPI



Microbac Laboratories Inc., Pittsburgh Division

CERTIFICATE OF ANALYSIS

9021933

North East Borough - WWTP

Project Name: Quarterly Pretreatment - EFFLUENT

Mike McCumber
31 West Main St.
North East, PA 16428

Project / PO Number: N/A
Received: 02/13/2019
Reported: 02/22/2019

Analytical Testing Parameters

Client Sample ID:	Effluent Site 2	Collected By:	Client
Sample Matrix:	Aqueous	Collection Date:	02/13/2019 7:05
Lab Sample ID:	9021933-01		

Inorganics	Result	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 300.0, Rv. 2.1							
Nitrite as N	<0.13	0.13	mg/L		02/13/19 2104	02/13/19 2104	BAC
Nitrate as N	3.57	2.00	mg/L		02/13/19 2104	02/13/19 2104	BAC
Method: SM 2540 D-97,-11							
Total Suspended Solids - TSS	9.0	5.0	mg/L		02/17/19 1600	02/18/19 0800	MKM
Method: SM 4500 NH3 B/F-97,-11							
Ammonia as N	<0.30	0.30	mg/L		02/15/19 1000	02/15/19 1302	BAC
Method: SM 4500 NH3 C/F-97,-11							
Total Kjeldahl Nitrogen - TKN	<1.25	1.25	mg/L		02/14/19 0800	02/14/19 1455	BAC
Method: SM 4500 P B,E-99,-11							
Phosphorus, Total as P	0.529	0.020	mg/L		02/14/19 1400	02/15/19 1124	BAC
Metals, Total							
Result	RL	Units	Note	Prepared	Analyzed	Analyst	
Method: SM 3500 Cr B-09,-11							
Chromium (VI)	<0.150	0.150	mg/L		02/13/19 1320	02/13/19 1600	BAC
General Chemistry							
Result	RL	Units	Note	Prepared	Analyzed	Analyst	
Method: SM 5210 B							
BOD5	<4	4	mg/L	K1	02/14/19 1149	02/19/19 0831	MKM

Analyses Subcontracted to: Microbac Laboratories, Inc. - Ohio Valley

	Result	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA200.7							
Aluminum, Total	0.262	0.200	mg/L		02/15/19 0630	02/15/19 1811	LSJ
Arsenic, Total	<0.0100	0.0100	mg/L		02/15/19 0630	02/15/19 1811	LSJ
Cadmium, Total	<0.00100	0.00100	mg/L		02/15/19 0630	02/15/19 1811	LSJ
Chromium, Total	<0.00500	0.00500	mg/L		02/15/19 0630	02/15/19 1811	LSJ
Copper, Total	0.00801	0.00500	mg/L		02/15/19 0630	02/15/19 1811	LSJ
Lead, Total	<0.0100	0.0100	mg/L		02/15/19 0630	02/15/19 1811	LSJ
Molybdenum, Total	<0.0100	0.0100	mg/L		02/15/19 0630	02/15/19 1811	LSJ

Microbac Laboratories, Inc.



Microbac Laboratories Inc., Pittsburgh Division

CERTIFICATE OF ANALYSIS

9052943

North East Borough - WWTP

Mike McCumber
31 West Main St.
North East, PA 16428

Project Name: Quarterly Pretreatment Samples
(Site 2)

Project / PO Number: N/A
Received: 05/15/2019
Reported: 05/28/2019

Analytical Testing Parameters

Client Sample ID:	Effluent Site 2	Collected By:	Client
Sample Matrix:	Aqueous	Collection Date:	05/15/2019 7:20
Lab Sample ID:	9052943-01		

Inorganics	Result	RL	Units	Dilution	Note	Prepared	Analyzed	Analyst
EPA 300.0, Rv. 2.1								
Nitrite as N	<0.13	0.13	mg/L	5		05/15/19 2213	05/15/19 2213	BAC
Nitrate as N	3.52	2.00	mg/L	5		05/15/19 2213	05/15/19 2213	BAC
SM 2540 D-97,-11								
Total Suspended Solids - TSS	6.0	5.0	mg/L	1			05/18/19 1250	JRS
SM 4500 NH3 B/F-97,-11								
Ammonia as N	<0.30	0.30	mg/L	1		05/17/19 0940	05/17/19 1728	BAC
SM 4500 NH3 C/F-97,-11								
Total Kjeldahl Nitrogen - TKN	<1.25	1.25	mg/L	1		05/20/19 0745	05/20/19 1541	BAC
SM 4500 P B,E-99,-11								
Phosphorus, Total as P	0.493	0.020	mg/L	1		05/19/19 1100	05/21/19 1059	BAC
SM 5210 B-01,-11								
Carbonaceous BOD - CBOD5	<4.0	4.0	mg/L	1	K4	05/16/19 1332	05/21/19 1026	MKM
Metals, Total								
EPA 200.7, Rv. 4.4								
Aluminum	<0.200	0.200	mg/L	1		05/21/19 1217	05/22/19 1556	CDC
Arsenic	<0.010	0.010	mg/L	1		05/21/19 1217	05/22/19 1556	CDC
Chromium	<0.002	0.002	mg/L	1		05/21/19 1217	05/22/19 1556	CDC
Copper	0.006	0.004	mg/L	1		05/21/19 1217	05/22/19 1556	CDC
Lead	<0.007	0.007	mg/L	1		05/21/19 1217	05/22/19 1556	CDC
Nickel	<0.007	0.007	mg/L	1		05/21/19 1217	05/22/19 1556	CDC
Selenium	<0.020	0.020	mg/L	1		05/21/19 1217	05/22/19 1556	CDC
Silver	<0.004	0.004	mg/L	1		05/21/19 1217	05/22/19 1556	CDC
Zinc	0.022	0.010	mg/L	1		05/21/19 1217	05/22/19 1556	CDC
Cadmium	<0.0006	0.0006	mg/L	1		05/21/19 1217	05/22/19 1556	CDC
Molybdenum	<0.010	0.010	mg/L	1		05/21/19 1217	05/22/19 1556	CDC
SM 3500 Cr B-09,-11								
Chromium (VI)	<0.015	0.015	mg/L	1		05/15/19 1545	05/15/19 1610	BAC

Microbac Laboratories, Inc.

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CERTIFICATE OF ANALYSIS
9083105

North East Borough - WWTP

Julio Pazmino
31 West Main St.
North East, PA 16428

Project Name: Quarterly Pretreatment Site 2
Effluent
Project / PO Number: N/A
Received: 08/14/2019
Reported: 08/23/2019

Analytical Testing Parameters

Client Sample ID:	Site 2 Effluent	Collected By:	Client
Sample Matrix:	Aqueous	Collection Date:	08/14/2019 7:15
Lab Sample ID:	9083105-01		

Inorganics	Result	RL	Units	Dilution	Note	Prepared	Analyzed	Analyst
EPA 300.0, Rv. 2.1								
Nitrite as N	<0.13	0.13	mg/L	5		08/15/19 1358	08/15/19 1358	BAC
Nitrate as N	8.56	2.00	mg/L	5		08/15/19 1358	08/15/19 1358	BAC
SM 2540 D-11								
Total Suspended Solids - TSS	<5.0	5.0	mg/L	1			08/15/19 1530	JRS
SM 4500 NH3 B/F-11								
Ammonia as N	<0.30	0.30	mg/L	1		08/16/19 0900	08/16/19 1308	BAC
SM 4500 NH3 C/F-11								
Total Kjeldahl Nitrogen - TKN	<1.25	1.25	mg/L	1		08/22/19 0745	08/22/19 1510	BAC
SM 4500 P B/E-11								
Phosphorus, Total as P	0.212	0.020	mg/L	1		08/16/19 1200	08/19/19 1549	BAC
Metals, Total								
EPA 200.7, Rv. 4.4								
Aluminum	<0.200	0.200	mg/L	1		08/16/19 0934	08/19/19 1525	CDC
Arsenic	<0.010	0.010	mg/L	1		08/16/19 0934	08/19/19 1525	CDC
Chromium	<0.002	0.002	mg/L	1		08/16/19 0934	08/19/19 1525	CDC
Copper	0.005	0.004	mg/L	1		08/16/19 0934	08/19/19 1525	CDC
Lead	<0.007	0.007	mg/L	1		08/16/19 0934	08/19/19 1525	CDC
Nickel	<0.007	0.007	mg/L	1		08/16/19 0934	08/19/19 1525	CDC
Selenium	<0.020	0.020	mg/L	1		08/16/19 0934	08/19/19 1525	CDC
Silver	<0.004	0.004	mg/L	1		08/16/19 0934	08/19/19 1525	CDC
Zinc	0.016	0.010	mg/L	1		08/16/19 0934	08/19/19 1525	CDC
Cadmium	<0.0006	0.0006	mg/L	1		08/16/19 0934	08/19/19 1525	CDC
Molybdenum	0.016	0.010	mg/L	1		08/16/19 0934	08/19/19 1525	CDC
SM 3500 Cr B-09,-11								
Chromium (VI)	<0.015	0.015	mg/L	1	M2	08/14/19 1600	08/14/19 1620	BAC
General Chemistry								
SM 5210 B								



Microbac Laboratories Inc., Pittsburgh Division

CERTIFICATE OF ANALYSIS

9121389

North East Borough - WWTP

Julio Pazmino
31 West Main St.
North East, PA 16428

Project Name: Quarterly Pretreatment Samples

Site 2 Effluent
Project / PO Number: N/A
Received: 12/04/2019
Reported: 12/13/2019

Analytical Testing Parameters

Client Sample ID:	Effluent Site 2	Collected By:	Client
Sample Matrix:	Aqueous	Collection Date:	12/04/2019 7:22
Lab Sample ID:	9121389-01		

Inorganics	Result	RL	Units	Dilution	Note	Prepared	Analyzed	Analyst
EPA 300.0, Rv. 2.1								
Nitrite as N	<0.13	0.13	mg/L	5		12/04/19 2118	12/04/19 2118	BAC
Nitrate as N	3.91	2.00	mg/L	5		12/04/19 2118	12/04/19 2118	BAC
SM 2540 D-11								
Total Suspended Solids - TSS	5.0	5.0	mg/L	1			12/07/19 1630	KTR
SM 4500 NH3 B/F-11								
Ammonia as N	0.82	0.30	mg/L	1		12/06/19 1000	12/06/19 1242	BAC
SM 4500 NH3 C/F-11								
Total Kjeldahl Nitrogen - TKN	1.30	1.25	mg/L	1		12/11/19 0740	12/11/19 1533	BAC
SM 4500 P B/E-11								
Phosphorus, Total as P	0.400	0.020	mg/L	1		12/06/19 1315	12/10/19 0845	BAC
SM 5210 B-11								
Carbonaceous BOD - CBOD5	<4.0	4.0	mg/L	1	K1	12/05/19 1528	12/10/19 1353	MKM
Metals, Total								
EPA 200.7, Rv. 4.4								
Aluminum	<0.200	0.200	mg/L	1		12/09/19 1514	12/11/19 2029	EMB
Arsenic	<0.010	0.010	mg/L	1		12/09/19 1514	12/11/19 2029	EMB
Chromium	<0.002	0.002	mg/L	1		12/09/19 1514	12/11/19 2029	EMB
Copper	0.007	0.004	mg/L	1		12/09/19 1514	12/11/19 2029	EMB
Lead	<0.007	0.007	mg/L	1		12/09/19 1514	12/11/19 2029	EMB
Nickel	<0.007	0.007	mg/L	1		12/09/19 1514	12/11/19 2029	EMB
Selenium	<0.020	0.020	mg/L	1		12/09/19 1514	12/11/19 2029	EMB
Silver	<0.004	0.004	mg/L	1		12/09/19 1514	12/11/19 2029	EMB
Zinc	0.020	0.010	mg/L	1		12/09/19 1514	12/11/19 2029	EMB
Cadmium	<0.0006	0.0006	mg/L	1		12/09/19 1514	12/11/19 2029	EMB
Molybdenum	0.048	0.010	mg/L	1		12/09/19 1514	12/11/19 2029	EMB
SM 3500 Cr B-11								
Chromium (VI)	<0.150	0.150	mg/L	1		12/04/19 1535	12/04/19 1555	BAC



Microbac Laboratories Inc., Pittsburgh Division

CERTIFICATE OF ANALYSIS

0031312

North East Borough - WWTP

Julio Pazmino
31 West Main St.
North East, PA 16428

Project Name: Quarterly Pretreatment Effluent

Samples
Project / PO Number: N/A
Received: 03/04/2020
Reported: 03/17/2020

Analytical Testing Parameters

Client Sample ID:	Effluent, Site 2 Composite	Collected By:	Client
Sample Matrix:	Aqueous	Collection Date:	03/04/2020 7:20
Lab Sample ID:	0031312-01		

Inorganics Total	Result	RL	Units	Dilution	Note	Prepared	Analyzed	Analyst
EPA 300.0, Rv. 2.1								
Nitrite as N	<0.13	0.13	mg/L	5		03/04/20 1908	03/04/20 1908	BAC
Nitrate as N	2.60	2.00	mg/L	5		03/04/20 1908	03/04/20 1908	BAC
SM 2540 D-11								
Total Suspended Solids - TSS	6.5	5.0	mg/L	1			03/06/20 1500	KTR
SM 4500 NH3 B/F-11								
Ammonia as N	<0.30	0.30	mg/L	1		03/06/20 0740	03/06/20 1030	BAC
SM 4500 NorgC NH3 F -11								
Total Kjeldahl Nitrogen - TKN	1.45	1.25	mg/L	1		03/05/20 0725	03/05/20 1333	BAC
SM 4500 P B/E-11								
Phosphorus, Total as P	0.431	0.020	mg/L	1		03/04/20 1200	03/06/20 0929	BAC
SM 5210 B-11								
Carbonaceous BOD - CBOD5	<4.0	4.0	mg/L	1	K4	03/05/20 1410	03/10/20 1050	MKM
General Parameters								
SM 5210 B-11								
BOD5	<4.0	4.0	mg/L	1	K4	03/05/20 1156	03/10/20 0926	MKM
Metals Total by ICP								
EPA 200.7, Rv. 4.4								
Aluminum	<0.200	0.200	mg/L	1		03/05/20 1130	03/12/20 0000	SEA
Arsenic	<0.010	0.010	mg/L	1		03/05/20 1130	03/12/20 0000	SEA
Chromium	<0.002	0.002	mg/L	1		03/05/20 1130	03/12/20 0000	SEA
Copper	<0.007	0.007	mg/L	1		03/05/20 1130	03/12/20 0000	SEA
Lead	<0.007	0.007	mg/L	1		03/05/20 1130	03/12/20 0000	SEA
Nickel	<0.007	0.007	mg/L	1		03/05/20 1130	03/12/20 0000	SEA
Selenium	<0.020	0.020	mg/L	1		03/05/20 1130	03/12/20 0000	SEA
Silver	<0.004	0.004	mg/L	1		03/05/20 1130	03/12/20 0000	SEA
Zinc	0.028	0.010	mg/L	1		03/05/20 1130	03/12/20 0000	SEA
Cadmium	<0.0006	0.0006	mg/L	1		03/05/20 1130	03/12/20 0000	SEA

Microbac Laboratories, Inc.

100 Marshall Drive | Warrendale, PA 15086 | 724-772-0610 p | www.microbac.com



Microbac Laboratories Inc., Pittsburgh Division

CERTIFICATE OF ANALYSIS

0053039

Analytical Testing Parameters

Client Sample ID:	Effluent, Site 2 Composite	Collected By:	Customer
Sample Matrix:	Aqueous	Collection Date:	05/20/2020 7:10
Lab Sample ID:	0053039-01		

Inorganics Total

	Result	MDL	RL	Units	Dilution	Note	Prepared	Analyzed	Analyst
Method: EPA 300.0, Rv. 2.1 (1993)									
Nitrite as N	<0.13		0.13	mg/L	5		05/21/20 0058	05/21/20 0058	BAC
Nitrate as N	5.20		2.00	mg/L	5		05/21/20 0058	05/21/20 0058	BAC
Method: SM 4500-Norg C-2011/SM 4500-NH3 F-2011									
Total Kjeldahl Nitrogen - TKN	<1.25		1.25	mg/L	1		05/27/20 0715	05/27/20 1447	MKM

Metals Total by ICP

	Result	MDL	RL	Units	Dilution	Note	Prepared	Analyzed	Analyst
Method: EPA 200.7, Rv. 4.4 (1994)									
Aluminum	<0.200		0.200	mg/L	1		05/24/20 1010	05/26/20 2020	SEA
Arsenic	<0.010		0.010	mg/L	1		05/24/20 1010	05/26/20 2020	SEA
Chromium	<0.002		0.002	mg/L	1		05/24/20 1010	05/26/20 2020	SEA
Copper	<0.007		0.007	mg/L	1		05/24/20 1010	05/26/20 2020	SEA
Lead	<0.007		0.007	mg/L	1		05/24/20 1010	05/26/20 2020	SEA
Nickel	<0.007		0.007	mg/L	1		05/24/20 1010	05/26/20 2020	SEA
Silver	<0.004		0.004	mg/L	1		05/24/20 1010	05/26/20 2020	SEA
Zinc	0.019		0.010	mg/L	1		05/24/20 1010	05/26/20 2020	SEA
Cadmium	<0.0006		0.0006	mg/L	1		05/24/20 1010	05/26/20 2020	SEA
Molybdenum	0.032		0.010	mg/L	1		05/24/20 1010	05/26/20 2020	SEA
Method: SM 3500-Cr B-2011									
Chromium (VI)	<0.150		0.150	mg/L	1		05/20/20 1600	05/20/20 1620	BAC

Metals Total by ICPMS

	Result	MDL	RL	Units	Dilution	Note	Prepared	Analyzed	Analyst
Method: EPA 200.8, Rv. 5.4 (1994)									
Selenium	<0.00200		0.00200	mg/L	1		05/26/20 1248	05/27/20 1226	HNC

Analyses Subcontracted to: Microbac Laboratories Inc., - Marietta, OH

Metals Total by AA

	Result	MDL	RL	Units	Dilution	Note	Prepared	Analyzed	Analyst
Method: EPA 245.1, Rv. 3 (1994)									
Mercury	<0.000100	0.000100	0.000200	mg/L	1		05/27/20 0625	05/28/20 0844	TMM



Microbac Laboratories Inc., Pittsburgh Division

CERTIFICATE OF ANALYSIS

0084655

Analytical Testing Parameters

Client Sample ID:	Effluent, Site 2 Composite	Collected By:	Client
Sample Matrix:	Aqueous	Collection Date:	08/26/2020 7:40
Lab Sample ID:	0084655-01		

Inorganics Total

	Result	MDL	RL	Units	Dilution	Note	Prepared	Analyzed	Analyst
Method: EPA 300.0, Rv. 2.1 (1993)									
Nitrite as N	<0.13		0.13	mg/L	5		08/26/20 2109	08/26/20 2109	BAC
Nitrate as N	6.54		2.00	mg/L	5		08/26/20 2109	08/26/20 2109	BAC
Method: SM 4500-Norg C-2011/SM 4500-NH3 F-2011									
Total Kjeldahl Nitrogen - TKN	<1.25		1.25	mg/L	1		08/27/20 0745	08/27/20 1359	BAC

Metals Total by ICP

	Result	MDL	RL	Units	Dilution	Note	Prepared	Analyzed	Analyst
Method: EPA 200.7, Rv. 4.4 (1994)									
Aluminum	<0.200		0.200	mg/L	1		08/31/20 0857	09/01/20 0007	SEA
Arsenic	<0.010		0.010	mg/L	1		08/31/20 0857	09/01/20 0007	SEA
Chromium	<0.002		0.002	mg/L	1		08/31/20 0857	09/01/20 0007	SEA
Copper	0.009		0.007	mg/L	1		08/31/20 0857	09/01/20 0007	SEA
Lead	<0.007		0.007	mg/L	1		08/31/20 0857	09/01/20 0007	SEA
Nickel	<0.007		0.007	mg/L	1		08/31/20 0857	09/01/20 0007	SEA
Zinc	0.021		0.010	mg/L	1		08/31/20 0857	09/01/20 0007	SEA
Cadmium	<0.0006		0.0006	mg/L	1		08/31/20 0857	09/01/20 0007	SEA
Molybdenum	0.085		0.010	mg/L	1		08/31/20 0857	09/01/20 0007	SEA
Method: SM 3500-Cr B-2011									
Chromium (VI)	<0.150		0.150	mg/L	1		08/26/20 1645	08/26/20 1700	BAC

Metals Total by ICPMS

	Result	MDL	RL	Units	Dilution	Note	Prepared	Analyzed	Analyst
Method: EPA 200.8, Rv. 5.4 (1994)									
Selenium	<0.00200		0.00200	mg/L	1		09/01/20 0910	09/01/20 1508	HNC

Analyses Subcontracted to: Microbac Laboratories Inc., - Marietta, OH

Metals Total by AA

	Result	MDL	RL	Units	Dilution	Note	Prepared	Analyzed	Analyst
Method: EPA 245.1, Rv. 3 (1994)									
Mercury	<0.000100	0.000100	0.000200	mg/L	1		08/31/20 0642	08/31/20 1137	TMM

Metals Total by ICP

	Result	MDL	RL	Units	Dilution	Note	Prepared	Analyzed	Analyst
Method: EPA 200.7, Rv. 4.4 (1994)									
Silver	<0.00400	0.00400	0.00800	mg/L	1		08/31/20 0630	09/01/20 1258	LSJ



Microbac Laboratories Inc., Pittsburgh Division

CERTIFICATE OF ANALYSIS

0112328

Analytical Testing Parameters

Client Sample ID:	Effluent, Site 2 Composite	Collected By:	Joe Malta
Sample Matrix:	Aqueous	Collection Date:	11/11/2020 7:15
Lab Sample ID:	0112328-01		

Inorganics Total	Result	MDL	RL	Units	Dilution	Note	Prepared	Analyzed	Analyst
Method: EPA 300.0, Rv. 2.1 (1993)									
Nitrite as N	<0.13		0.13	mg/L	5		11/12/20 1045	11/12/20 1045	BAC
Nitrate as N	5.00		2.00	mg/L	5		11/12/20 1045	11/12/20 1045	BAC
Method: SM 3500-Cr B-2011									
Chromium (VI)	<0.150		0.150	mg/L	1		11/11/20 1540	11/11/20 1555	BAC
Method: SM 4500-Norg C-2011/SM 4500-NH3 F-2011									
Total Kjeldahl Nitrogen - TKN	<1.25		1.25	mg/L	1		11/12/20 0700	11/12/20 1334	BAC

Metals Total by ICP	Result	MDL	RL	Units	Dilution	Note	Prepared	Analyzed	Analyst
Method: EPA 200.7, Rv. 4.4 (1994)									
Aluminum	<0.200		0.200	mg/L	1		11/16/20 1216	11/17/20 1124	SEA
Arsenic	<0.010		0.010	mg/L	1		11/16/20 1216	11/17/20 1124	SEA
Chromium	<0.002		0.002	mg/L	1		11/16/20 1216	11/17/20 1124	SEA
Copper	<0.007		0.007	mg/L	1		11/16/20 1216	11/17/20 1124	SEA
Lead	<0.007		0.007	mg/L	1		11/16/20 1216	11/17/20 1124	SEA
Nickel	<0.007		0.007	mg/L	1		11/16/20 1216	11/17/20 1124	SEA
Silver	<0.004		0.004	mg/L	1		11/16/20 1216	11/17/20 1124	SEA
Zinc	0.025		0.010	mg/L	1		11/16/20 1216	11/17/20 1124	SEA
Cadmium	<0.0006		0.0006	mg/L	1		11/16/20 1216	11/17/20 1124	SEA
Molybdenum	0.060		0.010	mg/L	1		11/16/20 1216	11/17/20 1124	SEA

Metals Total by ICPMS	Result	MDL	RL	Units	Dilution	Note	Prepared	Analyzed	Analyst
Method: EPA 200.8, Rv. 5.4 (1994)									
Selenium	<0.00200		0.00200	mg/L	1		11/17/20 1111	11/19/20 1753	EMB

Analyses Subcontracted to: Microbac Laboratories Inc., - Marietta, OH

Metals Total by AA	Result	MDL	RL	Units	Dilution	Note	Prepared	Analyzed	Analyst
Method: EPA 245.1, Rv. 3 (1994)									
Mercury	<0.000100	0.000100	0.000200	mg/L	1	Q7	11/16/20 0658	11/17/20 1542	TMM

Pesek, Adam

From: Price-Fay, Michelle <Price-Fay.Michelle@epa.gov>
Sent: Wednesday, January 27, 2021 7:37 AM
To: Pesek, Adam
Cc: Furjanic, Sean; Dickey, Justin; Martinsen, Jessica; Hales, Dana; Sanchez Gonzalez, Natalie; Shuart, Ryan; Camperson, Joseph; Turner, Andre
Subject: [External] PA0023043 North East Borough STP
Attachments: WET Calculations.txt

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.

Adam,

According to our Memorandum of Agreement, the Environmental Protection Agency (EPA) Region III has received the draft National Pollutant Discharge Elimination System (NPDES) permit for:

North East Borough STP

NPDES Number: PA0023043

EPA Received: December 28, 2020

30-day response due date: January 27, 2021

This is a major permit that discharges to Lake Erie and Sixteenmile Creek. EPA has chosen to perform a limited review of the draft permit based on the WET and Pretreatment requirements. EPA has completed its review and offers the following comment:

1. Per your phone and email conversations with Dana Hales, it was discussed that the need for this permit to include WET limits for outfall 001 were related to the Great Lakes Initiative requirements. In short, the permit must meet the Great Lakes RP analysis requirements in the federal regulations (Appendix F of Part 132, Procedure 6, Section D). Previous discussions with DEP surrounding this facility's WET RP analysis resulted in a determination that WET limits were warranted in the permit – the size of the data set needed to show that DEP's RP analysis was equivalent to the Great Lakes RP analysis requirements was so large that WET limits were determined to be necessary for the life of the permit (I have attached an historic email between PADEP and EPA that led to this conclusion). With that said, it is acknowledged that outfall 001 is now considered an emergency outfall that is not expected to discharge frequently, and the WET limits were removed from the permit. As discussed with Dana Hales, the following is a summary of the recommendations for this permit cycle regarding WET expectations for outfall 001:
 - a. This permit cycle should be used to evaluate the frequency and duration of discharges from 001.
 - i. Depending on the frequency with which the outfall is used, it may be necessary to re-impose WET limits in the permit. PADEP could consider adding a re-opener clause in the permit to address this possibility. An appropriate threshold would need to be considered, but EPA suggested a discharge from 001 of 4 times per permit cycle or more, as this is the minimum amount of data required to be submitted in a permit application for to evaluate RP for WET.
 - ii. As chronic limits were previously imposed, the duration of the discharge should be understood to determine if chronic or acute limits would be most appropriate, if necessitated. PADEP suggested a Part C. condition to record and report the duration of discharges from 001.

Please address the above and provide us with any changes to the draft permit and/or fact sheet, if necessary. Please contact Dana Hales on my staff via telephone at 215-814-2928 or via electronic mail at hales.dana@epa.gov.

Sincerely,
Michelle

Michelle Price-Fay, Chief
Clean Water Branch
Water Division (3WD40)
U.S. EPA Region III
1650 Arch Street
Philadelphia, Pa 19103
215-814-3397

Brian Trulear/R3/USEPA/US
03/16/2009 10:21 AM
To
Francisco Cruz/R3/USEPA/US@EPA
cc

bcc

Subject
Fw: WET limits for North East Borough

This should go with the draft permit submittal.

----- Forwarded by Brian Trulear/R3/USEPA/US on 03/16/2009 10:19 AM -----
"Hutchinson, Robert" <rohutchins@state.pa.us>
03/04/2009 01:28 PM
To
Brian Trulear/R3/USEPA/US@EPA
cc
"Balog, David" <dbalog@state.pa.us>
Subject
WET limits for North East Borough

As a precursor to our phone conversation I wanted to give you some facts about this case.

North East Borough has a Chronic WET limit of 1.4 TUC in their current permit. Since they are a discharger in the Lake Erie drainage basin they have to abide by the Great Lakes Initiative rules governing reasonable potential analysis, They have completed 20 tests since their last renewal but have not been able to prove compliance using the GLI methodology. Following is the data that supports this position.

$(TUC\ effluent)(B)((wf)/(wf + sf)) > 1.0\ TUC$

B factor = 1.4 => 20 total tests @ a default CV = 0.6

NOEC = 52% = 1.92 TUC

wf = 2.1 MGD

sf = 1.37 cfs = 0.89 MGD

$1.92 \times 1.4 \times ((2.1)/(0.89 + 2.1)) = 1.89 > 1.0\ TUC$

Based on the reasonable potential analysis, they would have to perform an additional 80 tests (making a total of 100 tests) and change their coefficient of variation from the current 0.2 (the actual CV) to 1.8 to be able to show compliance, based on the GLI reasonable potential.

B factor = 0.7 => 100 total tests & CV = 1.8

$1.92 \times 0.7 \times ((2.1 / (0.89 + 2.1))) = 0.94 < 1.0 \text{ TUC}$

Realistically, I doubt the CV would change that significantly so you would not be able to get to that 'best case scenario' that would prove them compliant. Ie.,

B factor = 1 => 100 total tests & CV = 0.2

$1.92 \times 1 \times ((2.1 / (0.89 + 2.1))) = 1.35 > 1.0 \text{ TUC}$

Does it make sense to continue all this sampling just to statistically prove they could never show compliance or is there an alternative such as just imposing a Chronic WET limit at some reasonable test frequency for the life of the permit?

Robert Hutchinson | Environmental Engineer
Department of Environmental Protection
230 Chestnut Street | Meadville, PA 16335
Phone: 814.332.6679 | Fax: 814.332.6121
www.depweb.state.pa.us

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
15	62264	SIXTEENMILE CREEK	0.760	605.00	18.58	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary		Stream	
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	Temp (°C)	pH	Temp (°C)	pH
Q7-10	0.074	9.81	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.75	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
NE BORO STP 001	PA002304	2.9000	0.0000	0.0000	0.000	20.00	7.60

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	4.00	7.54	0.00	0.00
NH3-N	25.00	0.14	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
15	62264	SIXTEENMILE CREEK	0.001	572.00	18.80	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary		Stream	
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	Temp (°C)	pH	Temp (°C)	pH
Q7-10	0.074	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.75	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

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

Parameter Data

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

WQM 7.0 Hydrodynamic Outputs

<u>SWP Basin</u>		<u>Stream Code</u>				<u>Stream Name</u>						
15		62264				SIXTEENMILE 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												
0.760	9.81	0.00	9.81	4.4863	0.00823	.742	37.72	50.81	0.51	0.091	23.43	7.70
Q1-10 Flow												
0.760	6.28	0.00	6.28	4.4863	0.00823	NA	NA	NA	0.44	0.106	22.92	7.68
Q30-10 Flow												
0.760	13.34	0.00	13.34	4.4863	0.00823	NA	NA	NA	0.58	0.080	23.74	7.71

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	<input checked="" type="checkbox"/>
WLA Method	EMPR	Use Inputted W/D Ratio	<input type="checkbox"/>
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	<input type="checkbox"/>
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	<input checked="" type="checkbox"/>
D.O. Saturation	90.00%	Use Balanced Technology	<input checked="" type="checkbox"/>
D.O. Goal	5		

WQM 7.0 Wasteload Allocations

SWP Basin Stream Code Stream Name
15 62264 SIXTEENMILE 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
0.760	NE BORO STP 0	5.44	12.85	5.44	12.85	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
0.760	NE BORO STP 0	.89	3.12	.89	3.12	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	<u>CBOD5</u>		<u>NH3-N</u>		<u>Dissolved Oxygen</u>		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
0.76	NE BORO STP 001	25	25	3.12	3.12	4	4	0	0

WQM 7.0 D.O.Simulation

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>		
15	62264	SIXTEENMILE CREEK		
<hr/>				
<u>RMl</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>	<u>Analysis pH</u>	
0.760	2.900	23.431	7.697	
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>	<u>Reach Velocity (fps)</u>	
37.715	0.742	50.810	0.511	
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>	<u>Reach NH3-N (mg/L)</u>	<u>Reach Kn (1/days)</u>	
9.22	1.261	1.08	0.912	
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>	<u>Reach DO Goal (mg/L)</u>	
6.429	31.128	Tsivoglou	5	
<u>Reach Travel Time (days)</u>	Subreach Results			
0.091	<u>TravTime (days)</u>	<u>CBOD5 (mg/L)</u>	<u>NH3-N (mg/L)</u>	<u>D.O. (mg/L)</u>
	0.009	9.09	1.07	6.77
	0.018	8.97	1.06	7.03
	0.027	8.85	1.05	7.23
	0.036	8.74	1.04	7.38
	0.045	8.62	1.03	7.49
	0.054	8.51	1.02	7.54
	0.064	8.39	1.02	7.54
	0.073	8.28	1.01	7.54
	0.082	8.17	1.00	7.54
	0.091	8.06	0.99	7.54

WQM 7.0 Effluent Limits

<u>SWP Basin</u>		<u>Stream Code</u>		<u>Stream Name</u>			
15		62264		SIXTEENMILE 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)
0.760	NE BORO STP 001	PA002304	2.900	CBOD5	25		
				NH3-N	3.12	6.24	
				Dissolved Oxygen			4

North East Borough STP Ammonia Evaluation

Lake Background (WQN 662)

pH	8.2
Temp	22.165
NH3-N	0.03

Flows

Lake (10:1)	44.95 cfs
Discharge	2.9 MGD ~ 4.4863

Acute Criteria

Current CMC (mg TAN/L) =	1.556	
EPA 2013 CMC (mg TAN/L) =	2.22 Oncorhynchus present	* formula on pg. 41 (pl
	2.22 Oncorhynchus absent	* formula on pg. 42 (pl

Chronic Criteria

Current CCC (mg TAN/L) =	0.364	
EPA 2013 CCC (mg TAN/L) =	0.498	* formula on pg. 46 (pl

Mass Balance

$$(\text{lake flow})(\text{bkrd. conc.}) + (\text{discharge flow})(x) = (\text{tot. flow})(\text{criteria})$$

$$44.95 \text{ cfs}(0.03 \text{ mg/l}) + (4.4863 \text{ cfs})(x) = (49.4363 \text{ cfs})(0.498 \text{ ug/l})$$

$$x = 5.18 \text{ mg/l} \sim \text{allowable discharge concentration}$$

ateaus at 15.7 C)
ateaus at 10.2 C)

ateaus at 7 C)