

**CWA NPDES COMPLIANCE EVALUATION INSPECTION REPORT**  
**U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 5**

---

**Inspection Type:** NPDES Surface Water

**Facility:**

U. S. Army Corps of Engineers, Berlin Lake, WWTP  
7400 Bedell Road  
Berlin Lake, Ohio 44401  
Operated by: Northstar Contracting, Inc.  
11730 Harvard Ave.  
Cleveland, Ohio 44105 (216) 999-7595

**Mailing Address:**

U. S. Army Corps of Engineers, Berlin Lake, WWTP  
7400 Bedell Road  
Berlin Lake, Ohio 44401

**Permit Number:** OH0023671

**Date of Inspection:** June 9, 2021

**EPA Representatives:**

Paul J. Novak Jr., Geologist, (440) 250-1714  
Megan Zale, Environmental Scientist, (440) 250-1711  
Jason Hewitt, Environmental Engineer, (312) 353-3114

**Facility Representative:**

Jason Quinn, U. S. ACE, Resource Manager, (330) 275-0267  
Kristen Hoesch, U. S. ACE, Operations Section Chief, (412) 395-7375  
Waylon Reigle, U. S. ACE, Maintenance Leader, (330) 547-6714  
Jason Mango, Supervisor, Northstar Contracting, Inc., (216) 999-7595  
Amy Mango, Operator, Northstar Contracting, Inc., (216) 999-7595

**Report Date:** July 23, 2021

**Report Prepared by:** Paul J. Novak Jr. Digitally signed by Paul J. Novak Jr.  
Date: 2021.07.23 08:37:36 -04'00'

---

Paul J. Novak Jr., (440) 250-1714, novak.paul@epa.gov

**Report Approved by:**

**MARK CONTI** Digitally signed by MARK CONTI  
Date: 2021.07.23 09:14:17  
-04'00'

---

Mark Conti, (440) 250-1706, [conti.mark@epa.gov](mailto:conti.mark@epa.gov)

## I. INTRODUCTION

The U. S. Army Corps of Engineers' (USACE) Berlin Lake wastewater treatment plant (WWTP) is located on the east shore of Berlin Lake in Berlin Township, Mahoning County, Ohio. The WWTP serves the campground (around 300 campsites) and the USACE offices on-site. The USACE owns the WWTP but has contracted out the operation of the treatment units and the on-site laboratory to Northstar Contracting, Inc.

## II. FINDINGS

### A. Facility Background

The facility was built in 1977. It operates year-round, although the campground operates May through September. During the other months the WWTP serves only the administration and maintenance buildings, which stay open all year long with about eight staff members. There is a total of nine restroom buildings, two have showers. There are two dump stations (for recreational vehicles) and three lift stations that send the wastewater to the WWTP. All three lift stations operate in series. Flow comes into the WWTP by forced main and by gravity (administration and maintenance buildings). Appendix 1 is a location map.

### B. Wastewater Treatment Plant

The plant a minor discharger with a design average flow of 0.03 million gallons per day. Appendix 2 is a plant schematic as supplied by USACE staff. Flow into the plant passes through a Parshall flume and into a comminutor. If flow is too high, then flow is directed through a bar screen, and together with the flow from the comminutor it flows into a splitter box. From the splitter box flow is directed to two aeration tanks (run in parallel). Wastewater is then sent to a clarifier. After clarification, flow is directed to a diverter box and then to the sand filters. We did observe that one of the sand filters has been lifted out of its foundation and does receive flow via the diverter box (see photograph 7 in Appendix 3). We were told by USACE personnel that the sand filter tank was lifted out by frost action during the past winter. It is still used, but it is filled manually by a pump in the clarifier with a hose into the sand filter. USACE staff also told us it is not known if the tank is still level. After filtration the flow is then sent to the chlorination chamber for disinfection. Sodium hypochlorite is added for disinfection and sodium bisulfite is added for dechlorination. Neither of these chemicals are metered out according to wastewater flow. Wastewater is pumped from the chlorination chamber through the dechlorination box and then into a manhole where the final effluent samples are collected. From the manhole, effluent flows by gravity to Berlin Lake.

Solids are pumped out of the clarifier to either of the sludge holding tanks. Solids from the mud wells in the sand filters are also pumped to the sludge holding tanks. A contractor is used to haul out the solids to another WWTP. For the current season Charlie Hoffman's Septic Systems is the contractor and that firm hauls the sludge to the Alliance WWTP. USACE receives only a haulage ticket from the hauler and no information from the Alliance WWTP.

Flow is monitored at the WWTP influent by a Parshall flume and ultrasonic meter (see Photographs 1 and 2, in Appendix 3). We were told by Northstar Contracting staff that the ultrasonic meter has never been calibrated and that checks against the flume are infrequently done.

U. S. ACE personnel told us that when Berlin Lake levels are high, and the plant effluent can't flow from the effluent manhole into the lake they effectively shut down the campground by locking the doors to the restrooms.

We collected a grab sample at the effluent manhole to check for parameters. Appendix 5 contains a table showing our results. Appendix 7 is a table of Ohio EPA Berlin Lake violations for the past three years.

#### C. Laboratory

The operator on-site collects all samples as grabs, those parameters that are required to be composites are collected as three separate grabs and then composited. The operator on duty told us that she or the operator of record (Mr. Craig Prater, Northstar Contracting), records the time of the first aliquot as the time of the sample on the chain-of-custody form. Samples are only collected during 7:00 a.m. to 3:00 p.m., six days per week. The plant is not staffed on Sundays. Samples are only collected when the final effluent pump is running. We observed that flow is not recorded when samples are being collected and are not collected proportioned to flow (the permit at Part II.3.F, requires samples be collected in proportion to flow).

The laboratory on site is operated by Northstar Contracting. Dissolved oxygen, ammonia, residual chlorine, and pH are analyzed on-site. We were told by Northstar Contracting staff that a Hach HQ440D meter is used for these measurements and that residual chlorine is analyzed on-site using a Hach DR300. However, when I examined the Hach website the HQ440D meter is not capable of performing the ammonia measurement, but the DR300 is. We observed an expired bottle of ammonia standard present in the lab. We were also told that there is no spare pH probe for the Hach HQ440D meter but that there are parts for ammonia and dissolved oxygen measurements. All other permit parameters are analyzed by Ream & Haager Environmental Laboratory, Inc., 179 W. Broadway St., Dover, Ohio, 44622.

We observed that the refrigerator used to store samples was also being used to store food (see Photograph 16 in Appendix 3). There was no temperature log or thermometer to monitor the refrigerator's temperature.

After we returned from our lunchbreak, we observed the cooler that contained the facility's samples sitting out by itself on the grass by a loop in the drive with nobody around it (see photographs 14 and 15 in Appendix 3). Northstar Contracting staff told us that it was indeed the sample cooler which typically is put on the grass area outside of the WWTP fence.

D. Sewer System

The sewer system runs throughout the campground connecting nine restroom facilities (two with showers), and two dump stations (for trailers and RVs). There are three lift stations operated in series. Appendix 4 is a map of the sewer system. One of the lift stations was completely rebuilt in 2018 (see photographs 19 and 20 in Appendix 3). This is the last lift station in the series and the new construction also included a small amount sewer pipe. The two remaining lift stations and sewer system are original to the establishment of the facility (see photographs 17 and 18 in Appendix 3). The sewer system is vitreous clay pipe. U. S. ACE personnel present told us that they feel that during rain events that inflow and infiltration into the sewer system causes the hydraulic overloads at the WWTP.

E. Issues of Concern

The damage to one of the sand filters from frost action (Ohio EPA identified this as a violation) has potentially compromised this unit's function. The repeated violations of the facility's NPDES permit parameters is of concern especially those that occurred in June of 2020, when the campground was shut down due to high lake levels (see documents Appendix 6). We also observed several places where bolts were missing from the railing anchor points for the handrails around treatment units. The unattended sample cooler that we found during our inspection potentially compromises the chain-of-custody for the samples (and integrity of the data derived from the analyses). The absence of quality control like the sample refrigerator temperature is also of concern for the on-site laboratory. U. S. ACE personnel told us that there are plans to include a budget request for fiscal year 2022 for, a complete replacement of the WWTP, but at the time of our inspection that request had not been submitted.

## Appendices

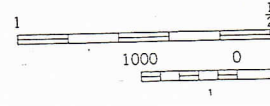
1. Location Map
2. WWTP Schematic
3. Photographs
4. Sewer System Map
5. U. S. EPA Sampling Results
6. Ohio EPA Notice of Violation and U. S. ACE Response
7. Table of Ohio EPA Berlin Lake Violations

# Appendix 1



Berlin Lake WWTP

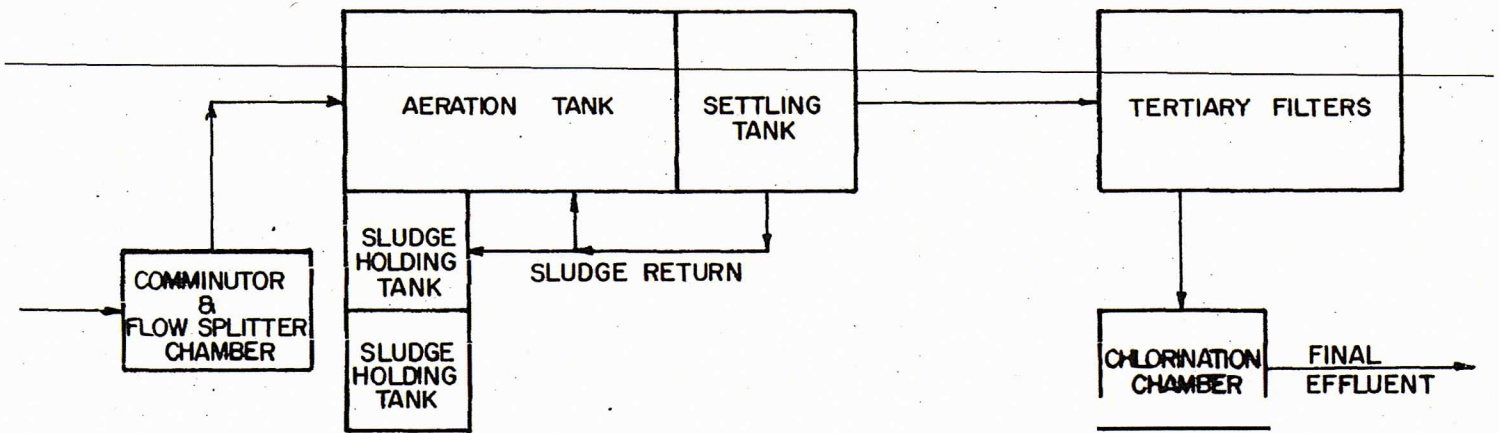
Mapped, edited, and published by the Geological Survey  
 in cooperation with County of Mahoning  
 Revised in cooperation with State of Ohio agencies



DAMASCUS (U.S. 62) 7 MI.

## Appendix 2

### WWTP Schematic (#1)



FLOW DIAGRAM—EXTENDED AERATION PROCESS  
-MILL CREEK RECREATION AREA -

FIGURE 1

## Appendix 3

**US Army Corps of Engineers - Berlin Lake  
EPA Inspection 6/9/2021  
All photos taken by Megan Zale, NPDES Inspector-in-Training, U.S. EPA  
Camera: Nikon Coolpix**



1: DSCN0179

Description: Influent flume

Location: WWTP

Camera Direction: ground

Date/Time: 6/9/2021 10:32



2: DSCN0180

Description: Calibration devices for flume

Location: WWTP

Camera Direction: ground

Date/Time: 6/9/2021 10:36



3: DSCN0181

Description: Bar screen, comminutor, outlet hole in upper left

Location: WWTP

Camera Direction: northeast

Date/Time: 6/9/2021 10:52



4: DSCN0182  
Description: Aeration tank  
Location: WWTP  
Camera Direction: southwest  
Date/Time: 6/9/2021 11:12



5: DSCN0183  
Description: Clarifier  
Location: WWTP  
Camera Direction: ground  
Date/Time: 6/9/2021 11:12



6: DSCN0184  
Description: Clarifier  
Location: WWTP  
Camera Direction: ground  
Date/Time: 6/9/2021 11:48



7: DSCN0185  
Description: sand filters units (in foreground), note unit at left has been lifted out of the ground  
Location: WWTP  
Camera Direction: southwest  
Date/Time: 6/9/2021 11:48



8: DSCN0186  
Description: Chlorination tank  
Location: WWTP  
Camera Direction: ground  
Date/Time: 6/9/2021 11:48



9: DSCN0187  
Description: Dechlorination pit  
Location: WWTP  
Camera Direction: ground  
Date/Time: 6/9/2021 11:48



10: DSCN0188

Description: Sampling manhole, outlet to Berlin Lake at top (at bottom) of manhole

Location: WWTP

Camera Direction: ground

Date/Time: 6/9/2021 11:51



11: DSCN0189

Description: Clarifier pump used to transfer effluent to damaged sand filter

Location: WWTP

Camera Direction: ground

Date/Time: 6/9/2021 11:59



12: DSCN0190  
Description: first sludge tank  
Location: WWTP  
Camera Direction: southwest  
Date/Time: 6/9/2021 12:01



13: DSCN0191  
Description: empty sludge tank  
Location: WWTP  
Camera Direction: southwest  
Date/Time: 6/9/2021 12:01



14: DSCN0192

Description: Unattended lab cooler with samples

Location: outside of WWTP gates

Camera Direction: east

Date/Time: 6/9/2021 13:15



15: DSCN0193

Description: Unattended lab cooler with samples

Location: outside of WWTP gates

Camera Direction: ground

Date/Time: 6/9/2021 13:15



16: DSCN0194

Description: Lab refrigerator, note food and drinks

Location: WWTP Lab

Camera Direction: southwest

Date/Time: 6/9/2021 13:19



17: DSCN0195

Description: Oak Lift Station

Location:

Camera Direction:

Date/Time: 6/9/2021 14:24



18: DSCN0196  
Description: Aspen Lift Station  
Location:  
Camera Direction:  
Date/Time: 6/9/2021 14:33



19: DSCN0197  
Description: Maplewood Lift Station  
Location:  
Camera Direction:  
Date/Time: 6/9/2021 14:45



20: DSCN0198

Description: Maplewood Lift Station

Location:

Camera Direction:

Date/Time: 6/9/2021 14:46

## Appendix 4



## Appendix 5

U. S. EPA Sample Results from U. S. EPA Berlin Lake WWTP collected on June 9, 2021 at 3:40 p.m.

pH 7.44 standard Units

conductivity 1110  $\mu$ S/cm

dissolved oxygen 8.93 mg/l

Measurements taken with YSI model 556 meter, with model 5565 pH probe installed

Northstar Contracting staff read 1.922 gpm on readout for influent sonic meter at time of sampling

## Appendix 6



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
U.S. ARMY CORPS OF ENGINEERS, PITTSBURGH DISTRICT  
1000 LIBERTY AVENUE  
PITTSBURGH PA 15222-4186

November 5, 2020

Operations Division

**SUBJECT:** Notice of Violation Response – NPDES OH0023671  
Mill Creek Recreation Area at Berlin Lake

Via Email

Ms. Brianne Workman  
District Representative  
Ohio Environmental Protection Agency, Northeast District Office  
50 West Town Street  
Columbus, Ohio 43216-1049

Dear Ms. Workman:

The United States Army Corps of Engineers, Pittsburgh District, is in receipt of the Notice of Violation (NOV), dated October 8, 2020, for the Berlin Lake wastewater treatment facility (WWTF) located at 2030 Bonner Road, Deerfield, Ohio 44411. Upon receipt of this NOV, we promptly engaged with our WWTF operator to address the instances of noncompliance noted in the NOV.

In the immediate term, we are analyzing existing data to determine if we can correlate high campground occupancy to the compliance issues noted in the NOV. Our campground is currently closed. If a correlation can be identified, we will recommend temporary closure of a percentage of campsites for the upcoming recreation season to restore permit compliance while we determine the reasoning behind any numeric exceedances.

From a long-term perspective, we will review our contract with the current operator, and identify WWTF maintenance requirements and potential upgrades in our next fiscal year (FY) budget package request (2022). The FY22 budget package will request an A/E Contractor to assess the WWTF and provide recommendations to rehabilitate, repair, replace, or eliminate the WWTF in view of projected future use at Berlin Lake's Mill Creek Recreation Area. Please contact Jess Hall at [Jessica.G.Hall@usace.army.mil](mailto:Jessica.G.Hall@usace.army.mil) or 412-395-7586 if you have any questions or recommendations.

Sincerely,

Kathy M. Griffin  
Chief, Operations Division

CF:

Jess Hall, USACE

Jason Quinn, USACE

Waylon Reigle, USACE



Mike DeWine, Governor  
Jon Husted, Lt. Governor  
Laurie A. Stevenson, Director

October 8, 2020

Re: **USACE Berlin Lake WWTP  
Notice of Violation (NOV)  
NOV  
NPDES  
Mahoning County  
3PN00000**

**TRANSMITTED ELECTRONICALLY**

Jason Quinn  
U.S. Army Corps of Engineers  
7400 Bedell Road  
Berlin Center, Ohio 44401

**Subject: Notice of Violation**

Dear Mr. Quinn:

On September 18, 2020, Ohio EPA, Division of Surface Water (DSW), conducted a compliance review of the U.S. Army Corps of Engineers, Berlin Lake Wastewater Treatment Plant (WWTP), located at 7400 Bedell Road, in Berlin Center, Ohio. The goal of the review was to determine your facility's compliance with Ohio's environmental laws and regulations as found in Chapter 6111 of the Ohio Revised Code (ORC), and the terms and conditions of the USACE Berlin Lake WWTP National Pollutant Discharge Elimination System (NPDES) permit No. 3PN00000\*FD, effective on November 1, 2016.

**Violations**

Ohio EPA, DSW found the following violation of Ohio's environmental laws and regulations, and we recommend that you promptly address the violation.

Please pay special attention to the **Violation Description** and **Requested Action** associated with each violation listed below as they describe what exactly is in violation and the requested action to address the violation.

1. **ORC 6111.04(C)**: No person to whom a permit has been issued shall place or discharge, or cause to be placed or discharged, in any waters of the state any sewage, sludge, sludge materials, industrial waste, or other wastes in excess of the permissive discharges specified under an existing permit without first receiving a permit from the director to do so.

**NPDES Permit, Part I A: Final Outfall 001, Effluent Limits and Monitoring Requirements**

**NPDES Part III 15: Authorized Discharges**: All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than, or at a level in excess of, that authorized by this permit shall constitute a violation of the terms and conditions of this permit.

- (a) **Violation Description**: The facility has reported violations of the final effluent limit for Total Suspended Solids (TSS) in May and June of 2020.

- (b) **Additional Information:** As a result of the final effluent limit violations cited above, the facility is in Significant NonCompliance (SNC) for exceeding the limit by more than 40% during two months out of the last 6-month time period.
- (c) **Additional Information:** In addition, the facility has reported effluent limit exceedances for TSS and CBOD on repeated occasions over the past five years, which has resulted in a repeated SNC status.
- (d) **Requested Action:** Please comply with the numeric effluent limits outlined in your NPDES permit.

### **Conclusion**

**Within 30 days** of receipt of this letter, please provide documentation of the actions taken and/or will be taken to resolve the violations cited above. If circumstances delay resolution of violations, the U.S. Army Corps of Engineers shall submit written correspondence describing the steps that will be taken and dates when compliance will be achieved. The correspondence can include but is not limited to updated policies, procedures, and photographs, as appropriate, and should be submitted electronically me at [Brianne.workman@epa.ohio.gov](mailto:Brianne.workman@epa.ohio.gov).

Failure to comply with Chapter Applicable Chapter 6111 of the ORC and rules promulgated thereunder may result in an administrative or civil penalty.

Please note that the submission of any requested information to respond to this letter does not constitute waiver of the Ohio EPA's authority to seek administrative or civil penalties as provided in Chapter 6111.09 of the ORC.

**As a precautionary response to COVID-19, Ohio EPA is currently operating with most staff working remotely. During this time, we will not be issuing hard-copy mail. The attached letter is an official response from Ohio EPA that will be maintained as a public record.**

Should you have any questions, please contact me at (330) 963-1179 and/or [Brianne.Workman@epa.ohio.gov](mailto:Brianne.Workman@epa.ohio.gov).

Sincerely,



Brianne Workman  
District Representative  
Division of Surface Water  
Northeast District Office

BW/cs

ec: Jessica Hall, USACE ([Jessica.G.Hall@usace.army.mil](mailto:Jessica.G.Hall@usace.army.mil))  
Waylon Reigle, USACE ([Waylon.j.Reigle@usace.army.mil](mailto:Waylon.j.Reigle@usace.army.mil))  
Denise Harnishfeger, Operator of Record ([d.harnishfeger@cityofhubbard.com](mailto:d.harnishfeger@cityofhubbard.com))  
Scott Sheerin, Ohio EPA, DSW, CO  
Dean Stoll, Ohio EPA, DSW, NEDO  
Chris Moody, Ohio EPA, DSW, NEDO  
Joseph Trocchio, Ohio EPA, DSW, NEDO  
[Jason.Quinn@usace.army.mil](mailto:Jason.Quinn@usace.army.mil)

## Appendix 7

Permit No.	Reporting period	Station	Reporting Code	Parameter	Limit Type	Limit	Reported Value mg/L	Violation Date
3PN00000*FD	August 2018	001	80082	CBOD 5 day	30D Conc	10.0	15.7	8/1/2018
3PN00000*FD	August 2018	001	80082	CBOD 5 day	7D Conc	15.0	41.	8/1/2018
3PN00000*FD	August 2019	001	80082	CBOD 5 day	30D Conc	10.0	11.54	8/1/2019
3PN00000*FD	August 2019	001	80082	CBOD 5 day	7D Conc	15.0	37.2	8/15/2019
3PN00000*FD	August 2019	001	80082	CBOD 5 day	7D Qty	1.71	1.83043	8/15/2019
3PN00000*FD	May 2019	001	80082	CBOD 5 day	7D Conc	15.0	24.4	5/22/2019
3PN00000*FD	June 2019	001	50060	Chlorine, Total Residual	1D Conc	0.019	1.	6/3/2019
3PN00000*FD	June 2019	001	00610	Nitrogen, Ammonia (NH3)	30D Qty	0.228	1.05545	6/1/2019
3PN00000*FD	June 2019	001	00610	Nitrogen, Ammonia (NH3)	7D Qty	0.341	4.17334	6/1/2019
3PN00000*FD	August 2018	001	00530	Total Suspended Solids	7D Conc	18.0	19.	8/22/2018
3PN00000*FD	June 2019	001	00530	Total Suspended Solids	30D Qty	1.37	94.3345	6/1/2019
3PN00000*FD	June 2019	001	00530	Total Suspended Solids	7D Conc	18.0	25.	6/8/2019
3PN00000*FD	June 2019	001	00530	Total Suspended Solids	7D Qty	2.05	374.715	6/1/2019
3PN00000*FD	May 2018	001	00530	Total Suspended Solids	30D Conc	12.0	17.75	5/1/2018
3PN00000*FD	May 2018	001	00530	Total Suspended Solids	7D Conc	18.0	19.	5/8/2018
3PN00000*FD	May 2018	001	00530	Total Suspended Solids	7D Conc	18.0	40.	5/15/2018
3PN00000*FD	May 2019	001	00530	Total Suspended Solids	30D Conc	12.0	36.25	5/1/2019
3PN00000*FD	May 2019	001	00530	Total Suspended Solids	7D Conc	18.0	62.	5/8/2019
3PN00000*FD	May 2019	001	00530	Total Suspended Solids	7D Conc	18.0	71.	5/15/2019
3PN00000*FD	May 2019	001	00530	Total Suspended Solids	7D Qty	2.05	3.22482	5/15/2019
3PN00000*FD	May 2020	001	00530	Total Suspended Solids	30D Conc	12.0	28.75	5/1/2020
3PN00000*FD	May 2020	001	00530	Total Suspended Solids	7D Conc	18.0	54.	5/8/2020
3PN00000*FD	May 2020	001	00530	Total Suspended Solids	7D Conc	18.0	34.	5/15/2020
3PN00000*FD	May 2020	001	00530	Total Suspended Solids	7D Conc	18.0	25.	5/22/2020