

DOCKET NO. D-2009-041 CP-2

DELAWARE RIVER BASIN COMMISSION

Discharge to a Tributary of Special Protection Waters

**Tobyhanna Army Depot
Wastewater Treatment Plant
Coolbaugh Township, Monroe County, Pennsylvania**

PROCEEDINGS

This docket is issued in response to an Application submitted to the Delaware River Basin Commission (DRBC or Commission) by Quad 3 on behalf of the Tobyhanna Army Depot (TYAD) on March 7, 2013 (Application), for renewal of the existing TYAD wastewater treatment plant (WWTP) and its related discharge, renewal of modifications to the WWTP, and to review a total dissolved solids (TDS) determination for a variance. The docket holder submitted a supplement to the Application on January 17, 2014. National Pollutant Discharge Elimination System (NPDES) Permit No. PA0010987 for this project was issued by the Pennsylvania Department of Environmental Protection (PADEP) on January 30, 2008, effective February 1, 2008. The PADEP is expected to issue renewal of the NPDES Permit shortly after this docket. The PADEP issued Water Quality Management (WQM) Permit No. 4509403 for this project on May 13, 2010.

The Application was reviewed for continuation of the project in the Comprehensive Plan and approval under Section 3.8 of the *Delaware River Basin Compact*. The Monroe County Planning Commission has been notified of pending action. A public hearing on this project was held by the DRBC on March 11, 2014.

A. DESCRIPTION

1. Purpose. The purpose of this docket is to renew approval of the docket holder's 0.802 million gallons per day (mgd) WWTP and its related discharge. This docket also re-approves proposed modifications to the WWTP that will not result in a hydraulic design capacity increase. Additionally, this docket denies the docket holder's request for a TDS variance, but does approve the proposed three phase schedule submitted as part of the Application supplement on January 17, 2014. The schedule includes modifications to the docket holder's operations that are expected to result in the WWTP being in compliance with the Commission's requirements for TDS by July 1, 2016.

2. **Location.** The WWTP will continue to discharge treated effluent to Hummler Run at River Mile 183.66 – 83.5 – 26.4 – 1.82 (Delaware River – Lehigh River – Tobyhanna Creek – Hummler Run) via Outfall No. 001, within the drainage area to the Lower Delaware Special Protection Waters (SPW), in the Coolbaugh Township, Monroe County, Pennsylvania as follows:

OUTFALL NO.	LATITUDE (N)	LONGITUDE (W)
001	41° 11' 05"	75° 25' 42"

3. **Area Served.** The docket holder's WWTP will continue to serve the TAD in Coolbaugh Township, Monroe County, Pennsylvania. For the purpose of defining the Area Served, Section B (Type of Discharge) and D (Service Area) of the docket holder's Application are incorporated herein by reference, to the extent consistent with all other conditions contained in the DECISION Section of this docket.

4. **Physical Features.**

a. **Design Criteria.** The docket holder proposes to make modifications to the treatment process at their existing WWTP. The existing trickling filter system will be converted to a sequencing batch reactor (SBR) system that will help the docket holder meet nitrogen and phosphorous based effluent limits.

b. **Facilities.** The existing WWTP consists of a fine screen building, two trickling filters, two denitrification towers, two secondary clarifiers, a sludge thickener, a filter building, two ultraviolet (UV) disinfection units, and an alum feed tank.

The two existing UV disinfection units are to be abandoned. The two trickling filters shall be removed and two sludge holding tanks shall be constructed in their stead. The two secondary clarifiers shall be converted to post equalization tanks. The docket holder proposes construction of two new SBR tanks, a new UV disinfection unit, and modifications to pumps, storage tanks, and sludge drying beds.

The new treatment system shall therefore consist of a fine screen building, two SBR tanks, two sludge holding tanks, two post equalization tanks, a sludge thickener and press, a drum filter building, a UV disinfection unit, and an alum feed tank.

The docket holder's wastewater treatment facility discharges to waters classified as SPW and is required to have available emergency power. The existing WWTP has a generator installed capable of providing emergency power.

The docket holder currently has several alarm systems that continuously monitor plant operations. The current alarm system is monitored by TYAD security personnel at the installation.

The docket holder's existing wastewater treatment facility has prepared and implemented an emergency management plan (EMP) in accordance with Commission requirements.

The docket holder has satisfactorily proved the technical infeasibility of using natural wastewater treatment technologies. Sufficient land with the proper soils is not available for such technologies.

The project facilities are not located in the 100-year floodplain.

Wasted sludge will continue to be hauled off-site by a licensed hauler for disposal at a (State-approved) facility.

c. Water withdrawals. The potable water supply in the project service area is supplied by the docket holder's on-site well distribution system, which was approved by the Commission on March 9, 1999 via Docket No. D-87-57 CP RENEWAL. The docket expired on March 9, 2009. The Commission received an application to renew approval of the well distribution system on May 7, 2013. Docket No. D-1987-057 CP-3 has been prepared to renew the wells and will be heard at the March 11, 2014 Public Hearing.

d. NPDES Permit / DRBC Docket. NPDES Permit No. PA0010987 was issued by the PADEP on January 30, 2008 (effective February 1, 2008) and includes final effluent limitations for the project discharge of 0.802 mgd to surface waters classified by the PADEP as a high quality, cold water fishery (HQ-CWF). Renewal of the NPDES Permit is expected shortly. The following average monthly effluent limits are among those listed in the NPDES Permit and meet or are more stringent than the effluent requirements of the DRBC.

EFFLUENT TABLE A-1: DRBC Parameters Included in NPDES Permit

OUTFALL 001 (WWTP)		
PARAMETER	LIMIT	MONITORING
pH (Standard Units)	6 to 9 at all times	As required by NPDES Permit
Total Suspended Solids	30 mg/l	As required by NPDES Permit
Dissolved Oxygen	7.0 mg/l (minimum at all times)	As required by NPDES Permit
CBOD (5-Day at 20° C)	25 mg/l	As required by NPDES Permit
Ammonia Nitrogen (5-1 to 10-31)	2.0 mg/l	As required by NPDES Permit
(11-1 to 4-30)	6.0 mg/l	
Fecal Coliform (5-1 to 9-30)	200 colonies per 100 ml as a geo. avg.	As required by NPDES Permit
(10-1 to 4-30)	2000 colonies per 100 ml as a geo. avg.	
Phosphorus	1.0 mg/l	As required by NPDES Permit
Nitrate + Nitrite as N	10.0 mg/l	As required by NPDES Permit

* DRBC Requirement

The following average monthly effluent limits are among those not listed in the current NPDES Permit and shall be in effect thru June 30, 2016. The PADEP has been requested to include these parameters in their renewed NPDES Permit. All monitoring shall start on April 1, 2014.

EFFLUENT TABLE A-2: DRBC Parameters Not Included in NPDES Permit

OUTFALL 001 (WWTP)		
PARAMETER	LIMIT	MONITORING
CBOD (5-Day at 20° C)	85% Removal	Same as CBOD5 monitoring required in existing NPDES Permit
Total Dissolved Solids*	1,500 mg/l	Monthly
Total Nitrogen	Monitor & Report	Monthly

* See DECISION Condition II.u.

The following average monthly effluent limits are among those not listed in the current NPDES Permit and shall take effect starting July 1, 2016. The PADEP has been requested to include these parameters in their renewed NPDES Permit.

EFFLUENT TABLE A-3: DRBC Parameters Not Included in NPDES Permit

OUTFALL 001 (WWTP)		
PARAMETER	LIMIT	MONITORING
CBOD (5-Day at 20° C)	85% Removal	Same as CBOD5 monitoring required in existing NPDES Permit
Total Dissolved Solids*	1,000 mg/l	Monthly
Total Nitrogen	Monitor & Report	Monthly

* See DECISION Condition II.u.

e. **Cost.** The overall cost of this project is estimated to be \$7,045,000.

f. **Relationship to the Comprehensive Plan.** The docket holder's WWTP was constructed in the 1950's. Modifications were performed in 1979, 1989, and 1998. Approval of Docket No. D-2009-041 CP-1 on May 5, 2010 included the existing 0.802 mgd WWTP and its proposed modifications in the Comprehensive Plan. Issuance of this docket will continue approval of the WWTP, its discharge, and the proposed modifications in the Comprehensive Plan (See DECISION Condition I.c.).

B. FINDINGS

The purpose of this docket is to renew approval of the docket holder's 0.802 mgd WWTP and its related discharge. This docket also re-approves proposed modifications to the WWTP that will not result in a hydraulic design capacity increase. Additionally, this docket denies the docket holder's request for a TDS variance, but does approve the proposed three phase schedule submitted as part of the Application supplement on January 17, 2014. The schedule includes modifications to the docket holder's operations that are expected to result in the WWTP being in compliance with the Commission's requirements for TDS by July 1, 2016.

On July 16, 2008, the DRBC approved amendments to its *Water Quality Regulations (WQR)* that provide increased protection for waters that the Commission classifies as Special Protection Waters. The portion of the Delaware River and its tributaries within the boundary of

the Lower Delaware River Management Plan Area was approved for Special Protection Waters designation.

Existing WWTPs located in SPW areas are required to perform a Natural Treatment Alternatives (NTA) analysis when they propose “*Substantial Alterations or Additions*” or are an “*Expanding Wastewater Treatment Plant*” (WQR Section 3.10.3A.2.a.). The WWTP modifications proposed by the docket holder are considered to be “*Substantial Alterations or Additions*”.

The docket holder submitted a NTA analysis on March 25, 2010. The docket holder concluded that natural treatment was technically infeasible due to lack of available land and proper soils on the land that is available. Commission staff continue to agree with the conclusion as previously stated in Docket No. D-2009-041 CP-1.

Section 3.10.A.2.d.8. of the Commission’s *WQR* reads in part: “For wastewater treatment facilities within the drainage area to Special Protection Waters, the actual loads and design flows included in a NDPEs permit or docket effective at the time of Special Protection Waters designation (“SPW designation”) may continue without triggering the additional treatment requirements and alternatives analysis required by these regulations. However, when Substantial Alterations or Additions as defined herein are proposed, although the actual discharge at the time of SPW designation remains exempt from additional requirements, the proposed expansion cannot be approved until... the applicant demonstrates that the project will cause no measurable change (NMC) to Existing Water Quality (EWQ) as defined herein”

Section 3.10.A.2.d.9. of the Commission’s *WQR* states that “For wastewater treatment facilities subject to the no measurable change requirement, the demonstration of no measurable change to existing water quality shall be satisfied if the applicant demonstrates that a new or incremental increase in the facility’s flow or load will cause no measurable change at the relevant water quality control point for the parameters denoted by asterisks in Tables 1 and 2 of this section... In making the demonstration required in the preceding sentence the applicant shall use a DRBC-approved model of the tributary or main stem watershed if available. Where a DRBC-approved model is not available, the applicant shall use other methodologies submitted to and approved in advance by the Commission to estimate cumulative effect at the applicable control point.”

NMC to EWQ is to be demonstrated at and Interstate Special Protection Waters boundary and interstate control points (BCPs and ICPs). The applicable control point for this project is the BCP located at the Lehigh River’s confluence with the Delaware River.

The docket holder’s WWTP is in the Lehigh River watershed. Commission staff completed the latest iteration of the Lehigh River Water Quality Model (LR-WQM) in 2013, using the USEPA’s QUAL2K platform, for the Lehigh River Watershed below the Lehigh Water Gap. Section 3.10.3.A.2.d.9) of the *WQR* further states “In making the demonstration required in the preceding sentence the applicant shall use a DRBC-approved model of the tributary or main stem watershed if available.” Commission staff developed the 2013 LR-WQM in order to evaluate new and expanding wastewater treatment facilities that are located in portions of the

Lehigh River watershed. Commission staff have determined that wastewater discharges upstream of the Lehigh Water Gap are unlikely to contribute a MC in EWQ at the Lehigh BCP and therefore should not automatically be subject to the NMC to EWQ demonstration. The docket holder's WWTP is located upstream of the domain of the LR-WQM. Commission staff have determined that the effluent limits developed by the PADEP are unlikely to cause a MC to EWQ.

Article 3.10.3A.2.e.1). and 2). of the Commission's *WQR* states that projects subject to review under Section 3.8 of the Compact that are located in the drainage area of SPW must submit for approval a Non-Point Source Pollution Control Plan (NPSPCP) that controls the new or increased non-point source loads generated within the portion of the docket holder's service area which is also located within the drainage area of SPW. The service area of the docket holder is located within in the drainage area to SPW. This project does entail additional construction and expansion of facilities, but a NPSPCP is not required because the footprint of the proposed work will remain consistent with existing conditions on-site. If, in the future, the service area changes (base expansion) or the footprint of the WWTP is modified, a NPSPCP shall be required. Accordingly, DECISION Conditions II.q. and II.x. have been included in this docket.

At the project site, Hummler Run has an estimated seven-day low flow with a recurrence interval of ten years of less than 0.1 cfs and is therefore by the Commission's definition an intermittent stream.

TDS

The Commission's basin-wide TDS effluent limit is 1,000 mg/l (Section 3.10.4.D.2. of the Commission's *WQR*). The Commission's basin-wide in-stream TDS criteria is that 1) the receiving stream's resultant TDS concentration be less than 133% of the background (Section 3.10.3.B.1.b. of the Commission's *WQR*), and 2) the receiving stream's resultant TDS concentration be less than 500 mg/l (Section 3.10.3.B.1.c. of the Commission's *WQR*).

The 133% of the background TDS requirement is for the protection of aquatic life. The 500 mg/l TDS requirement is to protect the use of the receiving stream as a drinking water source. The EPA's Safe Drinking Water Act's secondary standard for TDS is 500 mg/l.

The docket holder has identified high levels of TDS in the well water for Wells Nos. 1 thru 5. Furthermore, the docket holder has an industrial user on-site that pre-treats their effluent and is a source of TDS. That pre-treatment facility flushes reverse osmosis (RO) backwash water into the conveyance system, thereby contributing to effluent exceedances for TDS from the docket holder's WWTP.

Since Hummler Run is an intermittent stream, thereby the WWTP's flow becomes the stream during low-flow conditions, the Commission is unable to grant a variance to its basin-wide effluent limitation of 1,000 mg/l due to the in-stream concentrations not being able to meet Commission standards.

The docket holder has performed an evaluation of the TDS sources on-site. The evaluation concludes that by utilizing groundwater sources with lower specific conductance and performing minor pre-treatment process modifications it is expected that the docket holder's facility can come into compliance by July 1, 2016. Therefore this docket establishes an interim TDS effluent limit of 1,500 mg/l thru June 30, 2016. Thereafter, the Commission's basin-wide effluent limit of 1,000 mg/l takes effect.

Other

The nearest surface water intake of record for public water supply is located approximately 64 river miles downstream of the project discharge on the Lehigh River and is operated by the Northampton Borough Municipal Authority.

The project does not conflict with the Comprehensive Plan and is designed to prevent substantial adverse impact on the water resources related environment, while sustaining the current and future water uses and development of the water resources of the Basin.

The limits in the NPDES Permit are in compliance with Commission effluent quality requirements, where applicable.

The project is designed to produce a discharge meeting the effluent requirements as set forth in the Commission's *WQR* starting July 1, 2016.

C. DECISION

I. Effective on the approval date for Docket No. D-2009-041 CP-2 below:

a. The project described in Docket No. D-2009-041 CP-1 is removed from the Comprehensive Plan to the extent that it is not included in Docket No. D-2009-041 CP-2; and

b. Docket No. D-2009-041 CP-1 is terminated and replaced by Docket No. D-2009-041 CP-2; and

c. The project and the appurtenant facilities described in Section A "Physical Features" of this docket shall be added to the Comprehensive Plan.

II. The project and appurtenant facilities as described in Section A "Physical Features" of this docket are approved pursuant to Section 3.8 of the *Compact*, subject to the following conditions:

a. Docket approval is subject to all conditions, requirements, and limitations imposed by the PADEP in its NPDES and WQM Permits, and such conditions, requirements, and limitations are incorporated herein, unless they are less stringent than the Commission's.

b. The facility and operational records shall be available at all times for inspection by the DRBC.

c. The facility shall be operated at all times to comply with the requirements of the Commission's *WQR*.

d. The docket holder shall comply with the requirements contained in the Effluent Tables in Section A.4.d. of this docket. The docket holder shall submit the required monitoring results directly to the DRBC Project Review Section. The monitoring results shall be submitted annually, absent any observed limit violations, by January 31. If a DRBC effluent limit is violated, the docket holder shall submit the result(s) to the DRBC within 30 days of the violation(s) and provide a written explanation that states the action(s) the docket holder has taken to correct the violation(s) and protect against any future violations.

e. Except as otherwise authorized by this docket, if the docket holder seeks relief from any limitation based upon a DRBC water quality standard or minimum treatment requirement, the docket holder shall apply for approval from the Executive Director or for a docket revision in accordance with Section 3.8 of the *Compact* and the *Rules of Practice and Procedure*.

f. If at any time the receiving treatment plant proves unable to produce an effluent that is consistent with the requirements of this docket approval, no further connections shall be permitted until the deficiency is remedied.

g. Nothing herein shall be construed to exempt the docket holder from obtaining all necessary permits and/or approvals from other State, Federal or local government agencies having jurisdiction over this project.

h. Sound practices of excavation, backfill and reseedling shall be followed to minimize erosion and deposition of sediment in streams.

i. Within 10 days of the date that construction of the project has started, the docket holder shall notify the DRBC of the starting date and scheduled completion date.

j. Within 30 days of completion of construction of the approved project, the docket holder is to submit to the attention of the Project Review Section of DRBC a Construction Completion Statement ("Statement") signed by the docket holder's professional engineer for the project. The Statement must (1) either confirm that construction has been completed in a manner consistent with any and all DRBC-approved plans or explain how the as-built project deviates from such plans; (2) report the project's final construction cost as such cost is defined by the project review fee schedule in effect at the time the application was made; and (3) indicate the date on which the project was (or is to be) placed in operation. In the event that the final project cost exceeds the estimated cost used by the docket holder to calculate the DRBC project review fee, the statement must also include (4) the amount of any outstanding balance owed for DRBC review. The outstanding balance will equal the difference between the fee paid to the Commission and the fee calculated on the basis of the project's final cost, using the formula and definition of "project cost" set forth in the DRBC's project review fee schedule in effect at the time application was made.

k. The WWTP modifications shall be completed within three years of approval of this docket or the docket holder shall demonstrate to the Executive Director that it has expended substantial funds (in relation to the cost of the project) in reliance upon this docket approval. If the modifications have not been completed within three years of Docket Approval and the docket holder does not submit a cost analysis demonstrating substantial funds have been expended, Commission approval of the modifications to the existing WWTP shall expire. If the Commission's approval of the modifications expire under this condition, the docket holder shall file a new application with the Commission and receive Commission approval prior to initiating construction of any modifications.

l. The docket holder is permitted to treat and discharge wastewaters as set forth in the Area Served Section of this docket, which incorporates by reference Sections B (Type of Discharge) and D (Service Area) of the docket holder's Application to the extent consistent with all other conditions of this DECISION Section.

m. The docket holder shall make wastewater discharge in such a manner as to avoid injury or damage to fish or wildlife and shall avoid any injury to public or private property.

n. No sewer service connections shall be made to newly constructed premises with plumbing fixtures and fittings that do not comply with water conservation performance standards contained in Resolution No. 88-2 (Revision 2).

o. Nothing in this docket approval shall be construed as limiting the authority of DRBC to adopt and apply charges or other fees to this discharge or project.

p. The issuance of this docket approval shall not create any private or proprietary rights in the waters of the Basin, and the Commission reserves the right to amend, suspend or rescind the docket for cause, in order to ensure proper control, use and management of the water resources of the Basin.

q. Prior to allowing connections from any new service areas or any new developments, the docket holder shall either submit and have approved by the Executive Director of the DRBC a NPSPCP in accordance with Section 3.10.3.A.2.e, or receive written confirmation from the Executive Director of the DRBC that the new service area is in compliance with a DRBC approved NPSPCP.

r. Unless an extension is requested and approved by the Commission in advance, in accordance with paragraph 11 of the Commission's Project Review Fee schedule (Resolution No. 2009-2), the docket holder is responsible for timely submittal of a docket renewal application on the appropriate DRBC application form at least 12 months in advance of the docket expiration date set forth below. The docket holder will be subject to late charges in the event of untimely submittal of its renewal application, whether or not DRBC issues a reminder notice in advance of the deadline or the docket holder receives such notice. In the event that a timely and complete application for renewal has been submitted and the DRBC is unable, through no fault of the docket holder, to reissue the docket before the expiration date below (or the later date established by an extension that has been timely requested and approved), the terms and conditions of the current docket will remain fully effective and

enforceable against the docket holder pending the grant or denial of the application for docket approval.

s. The Executive Director may modify or suspend this approval or any condition thereof, or require mitigating measures pending additional review, if in the Executive Director's judgment such modification or suspension is required to protect the water resources of the Basin.

t. Any person who objects to a docket decision by the Commission may request a hearing in accordance with Article 6 of the Rules of Practice and Procedure. In accordance with Section 15.1(p) of the Delaware River Basin Compact, cases and controversies arising under the Compact are reviewable in the United States district courts.

u. The docket holder may request of the Executive Director in writing the substitution of specific conductance for TDS. The request should include information that supports the effluent specific correlation between TDS and specific conductance. Upon review, the Executive Director may modify the docket to allow the substitution of specific conductance for TDS monitoring.

v. Nothing in this docket constitutes a defense to any penalty action for past conduct of the docket holder or ongoing activity not authorized by this approval. In particular, renewal of this docket does not resolve violations – whether in the past or continuing – of provisions of the Delaware River Basin Compact (“Compact”) or any rule, regulation, order or approval duly issued by the Commission or the Executive Director pursuant to the Compact. The Commission reserves its right to take appropriate enforcement action against the docket holder, including but not limited to recovery of financial penalties consistent with Section 14.17 of the Compact, for any and all such prior or continuing violations.

w. The docket holder is prohibited from treating/pre-treating any hydraulic fracturing wastewater from sources in or out of the Basin at this time. Should the docket holder wish to treat/pre-treat hydraulic fracturing wastewater in the future, the docket holder will need to first apply to the Commission to renew this docket and be issued a revised docket allowing such treatment and an expanded service area. Failure to obtain this approval prior to treatment/pre-treatment will result in action by the Commission.

x. Prior to the docket holder initiating any additional substantial alterations or additions to the existing WWTP as defined in Section 3.10.3A2.a.16) of the Commission's *WQR*, an application must be submitted and approved by the Commission. Such an application shall be submitted prior to final design to ensure that the Commission can provide the docket holder with draft effluent limitations for SPW specific parameters as guidance for design as to not require duplication of work or cause a substantial expenditure of public funds without Commission approval. The docket holder is encouraged to contact the Commission staff during the planning stages to identify the potential effluent limitations required to meet the no measurable change parameters under SPW.

y. The docket holder is required to apply to the Commission for review and approval of any new surface water or groundwater sources prior to their utilization.

BY THE COMMISSION

DATE APPROVED: March 12, 2014

EXPIRATION DATE: January 31, 2018