DOCKET NO. D-2002-23 CP-2

DELAWARE RIVER BASIN COMMISSION

Discharge to Special Protection Waters

Westfall Township Municipal Authority
Wastewater Treatment Plant Expansion
Westfall Township, Pike County, Pennsylvania

PROCEEDINGS

This docket is issued in response to an Application submitted to the Delaware River Basin Commission (DRBC or Commission) by the Westfall Township Municipal Authority on April 4, 2006 (Application), for review of wastewater treatment plant expansion project. PADEP is withholding its amended National Pollutant Discharge Elimination System (NPDES) Permit No. PA-0061611-A1 until the project is approved by the Delaware River Basin Commission (DRBC).

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 Pike County Planning Commission has been notified of pending action. A public hearing on this project was held by the DRBC on July 16, 2008.

A. DESCRIPTION

1. Purpose. The purpose of this project is to expand the existing 0.3 mgd WWTP to 0.82 mgd.

2. Location. The WWTP, formerly known as the Hunts Landing WWTP, is located on the west bank of the Delaware River, just south of the Route 209 and I-84 Interchange in Westfall Township, Pike County, Pennsylvania. The project discharges to the Delaware River in Water Quality Zone 1C at River Mile 252.5. The project WWTP is located in the Middle Delaware Special Protection Water Area, which has been classified as Significant Resource Waters.

The project outfall is located in the Delaware River Watershed as follows:

OUTFALL NO.	LATITUDE (N)	LONGITUDE (W)
001	41° 21’ 04”	74° 42’ 54”

3. Area Served. The project will continue to serve the Hunts Motel complex, local commercial businesses, and significant portions of Westfall Township, Pike County,

Pennsylvania. A service area map was submitted with the application, which delineates both existing and proposed sources of flow.

For the purpose of defining the Area Served, the Application is incorporated herein by reference consistent with conditions contained in the DECISIONS section of this docket.

4. Physical features.

a. Design criteria. The existing plant is designed to provide treatment for 0.3 mgd via sequencing batch reactor (SBR) followed by filtration. The docket holder proposes to modify and expand the existing plant to treat 0.82 mgd. The upgraded WWTP will utilize a Membrane Operating System / Membrane Biological Reactor (MOS / MBR) consisting of biological treatment with anaerobic, anoxic, and aerobic zones, followed by membrane separation. This system will allow a higher mixed liquor suspended solids (MLSS) concentration in the reaction tanks with membrane separation of solids in place of final clarifiers. Following treatment, membrane separation, and ultraviolet light disinfection, the flow will continue to be discharged via submerged diffusers to the Delaware River in the Special Protection Waters of Water Quality Zone 1C.

b. Facilities. The existing WWTP consists of an emergency bypass bar screen, a mechanically-cleaned shaftless screw, an equalization tank, two SBRs fitted with pH control units, rapid sand filters, an effluent aeration tank, a decant equalization tank, an aerobic sludge digestion tank, an ultra-violet light disinfection system, and a multi-port diffuser discharge line.

The proposed 0.82 mgd plant will utilize the existing tankage but with modifications and additions including a new 2 mm fine influent screen. The existing equalization tank will be converted to an anoxic tank while a new equalization tank will be built to ensure a maximum *daily* flow of 1.25 mgd is not exceeded. The existing aeration system will be supplemented by coarse bubble aeration or replaced with larger jet aeration manifolds/nozzles. An additional aeration blower will be installed and the existing jet aeration manifolds will be relocated. Divider walls will be installed in each existing SBR tank with gravity flow baffles. A new internal nitrate recycle pump will be installed along with new tankage for pre- and post-anoxic zones with submerged mixing. Supplemental carbon and alum dosing equipment will also be installed. Effluent will be disinfected using an ultra-violet light system prior to discharge via a multi port diffuser discharge line.

Prior facilities and processes for the WWTP have been described in DRBC Docket No. D-2002-23 CP-1, approved by DRBC on March 19, 2003, Docket No. D-90-15, approved by DRBC on May 22, 1991, and Docket No. D-89-81 approved on September 26, 1990.

The docket holder's wastewater treatment facility discharges to waters classified as SPW and is required to have available emergency power. Westfall Township's WWTP has a generator available for emergency power supply.

The docket holder's wastewater treatment facility is not staffed 24 hours per day, and shall have a remote alarm system that continuously monitors plant operations.

The docket holder's expanding wastewater treatment facility does not discharge to Outstanding Basin Waters (OBW), and is not required to have a nonvisible discharge plume.

The docket holder's expanding wastewater treatment facility shall prepare and implement an emergency management plan suitable to Commission standards.

The docket holder has satisfactorily proved the technical and/or financial infeasibility of using natural wastewater treatment technologies.

The docket holder has satisfactorily evaluated the technical and/or financial infeasibility of a non-discharge/load reduction alternative.

The docket holder's expanding wastewater treatment facility is providing "Best Demonstrable Technology" (BDT) as a minimum level of treatment as per SPW regulations (Section 3.10.3.2.d.c.).

The project facilities are above the 100-year flood zone.

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

c. Water withdrawals. The potable water supply in the project service area is provided by a combination of water from the Borough of Matamoras Municipal Authority, PA American Water Company, and private wells. All water supply in the service area originates from groundwater wells.

d. NPDES Permit / DRBC Docket. The National Pollutant Discharge Elimination System (NPDES) Permit No. PA0061611 issued by PADEP on July 20, 2001, includes final effluent limitations for the project discharge of 0.82 mgd to surface waters classified by the PADEP as Warm Water Fishery (WWF), supporting migratory fish passage (MF). 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. These effluent limits were found necessary to prevent a measurable change to existing water quality.

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

OUTFALL 001 (WWTP Outfall)		
PARAMETER	**LIMIT**	**MONITORING**
pH (Standard Units)	6 to 8.5 at all times	As required in NPDES permit
Total Suspended Solids	10 mg/l * (85% minimum removal*)	As required in NPDES permit
CBOD (5-Day at 20^{o} C)	10 mg/l * (85% minimum removal*)	As required in NPDES permit
Fecal Coliform	50 colonies per 100 ml as a geo. avg. *	As required in NPDES permit

* DRBC Requirement

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

OUTFALL 001 (WWTP Outfall)		
PARAMETER	**LIMIT**	**MONITORING**
Dissolved Oxygen *	6.0 mg/l (minimum at all times) *	One per Month *
Total Phosphorus	2.0 mg/l *	One per Month *
Ammonia Nitrogen	1.5 mg/l *	One per Month *
Nitrate Nitrogen	7.5 mg/l *	One per Month *
Total Nitrogen	10 mg/l *	One per Month *
Total Dissolved Solids*	1,000 mg/l *	One per Week *, **

* DRBC Requirement
** See Condition II.y.

e. **Cost**. The overall cost of this project is estimated to be $5,700,000.

f. **Relationship to the Comprehensive Plan**. The project was previously included in the Comprehensive Plan on March 19, 2003 by DRBC Docket D-2002-23 CP.

B. FINDINGS

Westfall Township Municipal Authority is applying for a docket to expand the existing WWTP from 0.3 to 0.82 mgd to meet regional growth needs.

In 1992, the DRBC adopted Special Protection Waters requirements, as part of the DRBC Water Quality Regulations (WQR), designed to protect existing high water quality in applicable areas of the Delaware River Basin. One hundred twenty miles of the Delaware River from Hancock, New York downstream to the Delaware Water Gap has been classified by the DRBC as SPW. This stretch includes the sections of the river federally designated as "Wild and Scenic" in 1978 -- the Upper Delaware Scenic and Recreational River and the Delaware Water Gap National Recreation Area -- as well as an eight-mile reach between Milrift and Milford, Pennsylvania which is not federally designated. The SPW regulations apply to this 120-mile stretch of the river and its drainage area. (Upper/Middle SPW)

Section 3.10.3.A.2.c.1) of the Commissions Water Quality Regulations state that no new or expanded wastewater discharges are permitted in water classified as SPW until all non-discharge / load reduction alternatives have been fully evaluated and rejected because of technical and / or financial infeasibility. Since submittal of the initial application on April 4, 2006, the docket holder has submitted multiple iterations of an Alternatives Analysis (AA). In response to the fourth AA, the Commission sent comments in a letter dated April 26, 2007 to the docket holder indicating that a seasonal non-discharge alternative appeared to be technically feasible and that one may also be economically feasible if the project was implemented in phases. In response, docket holder compared the technical and economic feasibility of several land application alternatives to several stream discharge scenarios. The next submitted AA indicated that land application was technically feasible at several locations in or near the existing service area of the expanded WWTP. The AA compared the land application costs to a treatment system(s) that was capable of holding the same mass loadings of the existing 0.3 mgd facility. This "hold the load" approach was used for cost comparisons; however, the costs were developed for wastewater treatment technologies that could hold the "permitted" load as opposed to the "actual" load. In a letter dated April 8, 2008, the Commission indicated that the "hold the load" approach is one of the acceptable methods of demonstrating No Measurable Change (NMC) to Existing Water Quality (EWQ) as long as the "actual" load from the time of SPW classification is held, rather than the "permitted" load. In a response dated April 28, 2008, the docket holder's consultant provided a detailed cost analysis of four alternatives including upgrade of the treatment plant using SBR with and without land application and upgrade using MBR (the docket holder's preferred alternative) with and without land application. To assess the cost effectiveness of each alternative, the AA computed a screening level annual user rate equal to 2% of the median household income. The AA analysis determined that any scenario resulting in an annual user rate greater than the screening value would result in an unacceptable substantial economic impact to the community. The cost analysis demonstrated that all alternatives, including the docket holder's preferred alternative of MBR treatment without land application of effluent, substantially exceeded the screening annual user rate. Because land application increased the annual user rate, and the existing annual user rate already exceeded the screening level, the AA indicated that the additional cost of land application would represent a significant economic hardship on the community and thus rejected any land application. The Commission staff recommend the acceptance of this analysis as a demonstration of financial infeasibility.

SPW regulations require a demonstration that the project discharge will not result in a "Measurable Change" to the "Existing Water Quality" (EWQ) in the Delaware River. Section 3.10.3A.2.a.4. defines "Measurable Change" as an actual or estimated change in a mean (annual or seasonal) in-stream pollutant concentration that is outside the range of the two-tailed upper and lower 95 percent confidence limits that define EWQ. EWQ for the reach from Millrift through the Delaware Water Gap including the middle Delaware Scenic and Recreational River is defined in Table 1 Part B of the Commissions water quality regulations.

A water quality model, using the USEPA's QUAL2K platform, was developed by the Commission for the Tri-State portion of the Delaware River from the railroad bridge near Millrift, PA to the Milford PA / Montague NJ toll bridge, including segmentation of a portion of the Neversink River. Dischargers within the model domain include Westfall Township WWTP (PA0061611-A1), Port Jervis WWTP (NY0026522), Delaware Valley School District (PA0032166), Pike County Environmental WWTP (PA0062324), and Milford Valley Convalescent Home WWTP (PA0060020). The Delaware River Tri-State Water Quality Model (Tri-State Model) was used by Commission staff to analyze the impact to EWQ from the proposed increase from 0.3 to 0.82 mgd from the Westfall Township WWTP.

The Tri-State Model was calibrated by Commission staff using water quality data sets collected in 2007 specifically for that purpose, including discharger concentrations. Commission staff incorporated feedback from Dr. Stephen Chapra of Tufts University, developer of the QUAL2K platform, into the data collection and calibration activities.

Commission staff utilized the Tri State model to analyze the impacts from the 0.82 mgd Westfall Township WWTP in conjunction with an anticipated modification to the Port Jervis WWTP. The Tri State model predicted no measured change to EWQ in the reach as a result of the 0.82 mgd plant discharging at Best Demonstrable Technology (BDT) effluent limits as defined in Article 3.10.3.2.d.6 of the *Water Quality Regulations, Administrative Manual - Part III* and reflected in Effluent Tables A-1 and A-2 of this docket.

The docket holder's consultant also completed a separate water quality model using a modified version of the QUAL2E platform. Results of that modeling effort performed independently support the conclusions of the Tri State model.

Article 3.10.3A.2.e.1) and 2) of the *Water Quality Regulations, Administrative Manual - Part III*, states that projects subject to review under Section 3.8 of the Compact that are located in the drainage area of Special Protection Waters must submit for approval a Non-Point Source Pollution Control Plan that controls the new or increased non-point source loads generated within the portion of the applicant's service area which is also located within the drainage area of Special Protection Waters. The service area of the Westfall Township Municipal Authority is located within the drainage area to the Special Protection Waters. Since this project does entail additional construction and expansion of facilities and service area, the non-point source pollution control plan requirement is applicable at this time. Westfall Township adopted a revised Stormwater Management Ordinance on November 1, 2007. The Stormwater Management Ordinance conforms with the PADEP's Phase II model Stormwater Management Ordinance, which the Commission finds as an acceptable NPSPCP. Accordingly, Special Conditions II. s. and t. have been included in the Decision section of this docket.

The limits in the NPDES Permit will need to be modified to those included in the DRBC docket.

The project is designed to produce a discharge meeting the effluent requirements as set forth in the *Water Quality Regulations* of the DRBC.

Near the project site, the Delaware River has an estimated seven-day low flow with a recurrence interval of ten years of 1,197 mgd (774 cfs). The ratio of this low flow to the average design wastewater discharge from the WWTP plant is 1,460 to 1.

The nearest surface water intake of record for public water supply downstream of the project discharge is operated by the City of Easton, PA, approximately 68 miles downstream.

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.

A portion of the overall project funding will be provided by the U.S. Environmental Protection Agency (EPA) through Grant Agreement XP-97320201-0. This grant agreement requires that Westfall Township will not begin the preparation of plans and specifications nor initiate construction until such time as EPA determines that the project complies with the National Environmental Policy Act (NEPA) 42 USC Subsection 4321 et seq., CFR parts 6 and 1500 et seq. An Environmental Assessment (EA) to address NEPA is under development by the docket holder's consultant with anticipated completion in December 2008. Completion of the EA is contingent upon issuance of this docket. Upon completion, the EA will be submitted to EPA for approval.

C. DECISION

I. Effective on the approval date for Docket No. D-2002-23 CP-2 below:

a. Dockets D-2002-23 CP, D-90-15, and D-89-81 are rescinded and replaced by Docket No. D-2002-23 CP-2.

b. The project and the appurtenant facilities described in the Section A of this docket entitled "Physical features" above shall be added to the Comprehensive Plan.

II. The project and appurtenant facilities as described in the Section A of this docket entitled "Physical features" above 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 Part II Permit, and such conditions, requirements, and limitations are incorporated herein, unless they are less stringent than the Commission's. Commission approval of this docket is contingent on the PADEP's approval of the NPDES and Part II permits.

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 *Water Quality Regulations* of the DRBC.

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 DRBC required monitoring results directly to DRBC (Project Review Section). The monitoring results shall be submitted annually absent any observed limit violations. If a DRBC effluent limit is violated, the docket holder shall submit the results and provide a written explanation within 30 days of the violation the action(s) the docket holder has taken to correct the violation and protect against a future violation.

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. The discharge of wastewater shall not increase the ambient temperatures of the receiving waters by more than 5°F, nor shall such discharge result in stream temperatures exceeding 87°F.

i. Plans and specifications for the WWTP must be submitted to the Executive Director of the DRBC and approved prior to initiation of construction.

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

k. 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.

l. Upon completion of construction of the approved project, the docket holder shall submit a statement to the DRBC, signed by the docket holder's engineer or other responsible agent, advising the Commission that the construction has been completed in compliance with the approved plans, giving the final construction cost of the approved project and the date the project is placed into operation.

m. This docket approval shall expire three years from date below unless prior thereto the docket holder has commenced operation of the subject project or has expended substantial funds (in relation to the cost of the project) in reliance upon this docket approval.

n. The docket holder is permitted to treat and discharge the categories of wastewaters defined in the “Area Served” section of this docket.

o. 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.

p. 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).

q. 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.

r. 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.

s. Prior to allowing connections from <u>any new service areas</u>, the docket holder shall either submit and have approved by the Executive Director of the DRBC a Non-Point Source Pollution Control Plan (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.

t. The docket holder’s Non-Point Source Pollution Control Plan (Westfall Township adopted a revised Stormwater Management Ordinance on November 1, 2007) meets the general requirements of DRBC *Water Quality Regulations*, Article 3.10.3.A.2.e.1).

u. In 1992, this portion of the Delaware River and its tributaries was classified as Special Protection Waters. The docket holder is required to comply with Article

3.10.3.2.A.d.1) (emergency power), 2) (remove alarms) and 4) (emergency management plans) of the DRBC *Water Quality Regulations*. The docket holder shall provide for emergency power, install remote alarm controls and prepare an emergency management plan (EMP) within 6 months of docket approval (or upon completion of the reconstructed WWTP, whichever occurs first.) The docket holder shall submit the EMP and certify in writing to the Commission that it has complied with this condition by December 16, 2008.

v. A complete application for the renewal of this docket, or a notice of intent to cease the operations (withdrawal, discharge, etc.) approved by this docket by the expiration date, must be submitted to the DRBC at least 12 months prior to the expiration date below (unless permission has been granted by the DRBC for submission at a later date), using the appropriate DRBC application form. 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, the terms and conditions of this docket will remain fully effective and enforceable against the docket holder pending the grant or denial of the application for docket approval.

w. The Executive Director may modify or suspend this approval, or require mitigating measures, pending additional review.

x. The docket holder and any other person aggrieved by a reviewable action or decision taken by the Executive Director or Commission pursuant to this docket may seek an administrative hearing pursuant to Articles 5 and 6 of the Commission's *Rules of Practice and Procedure*, and after exhausting all administrative remedies may seek judicial review pursuant to Article 6, section 2.6.10 of the *Rules of Practice and Procedure* and section 15.1(p) of the Commission's *Compac*t.

y. 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.

BY THE COMMISSION

DATE APPROVED: July 16, 2008

EXPIRATION DATE: July 31, 2013