

DOCKET NO. D-1992-030 CP-3

DELAWARE RIVER BASIN COMMISSION

**Cinnaminson Sewerage Authority
Wastewater Treatment Plant
Cinnaminson Township, Burlington County, New Jersey**

PROCEEDINGS

This docket is issued in response to an Application submitted to the Delaware River Basin Commission (DRBC or Commission) by Richard A. Alaimo Associates on behalf of the Cinnaminson Sewerage Authority (CSA or docket holder) on February 27, 2015 (Application), for renewal of the docket holder's existing wastewater treatment plant (WWTP) and its discharge, as well as approval to make modifications to the WWTP. New Jersey Pollutant Discharge Elimination System (NJPDES) Permit No. NJ0024007 for this facility was issued by the New Jersey Department of Environmental Protection (NJDEP) on December 30, 2010, effective April 1, 2011. A modified NJPDES Permit was issued on June 6, 2011, effective July 1, 2011. The docket holder submitted an application to the NJDEP for Treatment Works Approval (TWA) in February 2015 for the modifications to the WWTP. The NJDEP is expected to issue the TWA shortly.

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 Burlington County Planning Board has been notified of pending action. A public hearing on this project was held by the DRBC on September 15, 2015.

A. DESCRIPTION

- 1. Purpose.** The purpose of this docket is to renew approval of the docket holder's existing 2.0 million gallons per day (mgd) WWTP and its discharge. This docket also approves the replacement of the existing surface aerators, sludge thickening equipment, and dewatering equipment, as well as the proposed modifications to the odor control equipment and garage. The proposed modifications will not result in a change to the hydraulic capacity of the WWTP.
- 2. Location.** The WWTP will continue to discharge treated effluent to Water Quality Zone 2 of the Delaware River at River Mile 108.82 via Outfall No. DSN001A, in Cinnaminson Township, Burlington County, New Jersey as follows:

| OUTFALL NO. | LATITUDE (N) | LONGITUDE (W) |
|--------------------|---------------------|----------------------|
| DSN001A | 40° 01' 5.6" | 75° 00' 35.6" |

3. **Area Served.** The docket holder's WWTP will continue to serve Cinnaminson Township and a portion of Palmyra Borough, both located in Burlington County, New Jersey. 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 will continue to operate its existing 2.0 mgd WWTP. Proposed construction at the facility includes replacement of the existing surface aerators, sludge thickening equipment, and dewatering equipment, as well as modifications to the odor control equipment and garage. The proposed modifications will not result in a change to the hydraulic capacity of the WWTP.

b. **Facilities.** The existing WWTP consists of a manual bar screen and grit collector, an influent pump station, an equalization tank, six (6) primary settling tanks, two (2) aeration tanks, six (6) final settling tanks, a chlorine contact tank, an effluent pump station, a sludge holding tank, a dissolved air flotation thickener, and three (3) belt presses.

The modified WWTP will consist of a manual bar screen and grit collector, an influent pump station, an equalization tank, six (6) primary settling tanks, two (2) aeration tanks, six (6) final settling tanks, a chlorine contact tank, an effluent pump station, a sludge holding tank, a rotary drum thickener, a polymer storage and feed system, a biotrickling filter odor control system, and three (3) belt presses.

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 New Jersey American Water Company (NJAWC).

d. **NJPDES Permit / DRBC Docket.** NJPDES Permit No. NJ0024007 was issued by the NJDEP on June 6, 2011 (effective July 1, 2011) and includes final effluent limitations for the project discharge of 2.0 mgd to surface waters classified by the NJDEP as Delaware River Zone 2. The following average monthly effluent limits are among those listed in the NJPDES Permit, are expected to be renewed, and meet or are more stringent than the effluent requirements of the DRBC.

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

| OUTFALL DSN001A (WWTP) | | |
|------------------------------|--------------------------------|------------------------------|
| PARAMETER | LIMIT | MONITORING |
| pH (Standard Units) | 6 to 9 at all times | As required by NJPDES Permit |
| Total Suspended Solids | 30 mg/l | As required by NJPDES Permit |
| CBOD ₅ (at 20° C) | 30 mg/l, 88.5% Minimum Removal | As required by NJPDES Permit |
| Ammonia Nitrogen | 35 mg/l | As required by NJPDES Permit |

| OUTFALL DSN001A (WWTP) | | |
|---------------------------------|--|------------------------------|
| PARAMETER | LIMIT | MONITORING |
| Fecal Coliform | 200 colonies per 100 ml as a geo. avg. | As required by NJPDES Permit |
| Acute Toxicity (Fathead Minnow) | 50% Effluent | As required by NJPDES Permit |
| Chronic Toxicity (Cladoceran) | Monitor & Report | As required by NJPDES Permit |

The requirements in EFFLUENT TABLE A-2 are not listed in the NJPDES Permit, were included in Docket No. D-1992-030 CP-2, and are Commission parameters that must continue to be met as a condition of this docket approval (See DECISION Condition II.d.). Commission staff have requested NJDEP include these parameters in their next Permit.

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

| OUTFALL DSN001A (WWTP) | | |
|-------------------------------------|------------------|---|
| PARAMETER | LIMIT | MONITORING |
| Total Dissolved Solids* | 1,000 mg/l | Quarterly |
| CBOD ₂₀ | 540 lbs/day | Monthly |
| Acute Toxicity (Cladoceran) | Monitor & Report | Concurrent with Fathead Minnow Sampling |
| Chronic Toxicity** (Fathead Minnow) | Monitor & Report | Concurrent with Cladoceran Sampling |

* See DECISION Condition II.t.

** See DECISION Condition II.x.

e. Cost. The overall cost of the proposed modifications is estimated to be \$7,349,400 (See DECISION Condition II.j.).

f. Relationship to the Comprehensive Plan. The docket holder's 2.0 mgd WWTP was added to the Comprehensive Plan on April 28, 1965 upon approval of Docket No. D-65-29 CP. Its continuation was approved on June 24, 1992 and September 12, 2012 upon approval of Dockets Nos. D-92-30 CP and D-1992-030 CP-2, respectively. Issuance of this docket will continue approval of the docket holder's modified 2.0 mgd WWTP 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 existing 2.0 mgd WWTP and its discharge. This docket also approves the replacement of the existing surface aerators, sludge thickening equipment, and dewatering equipment, as well as the proposed modifications to the odor control equipment and garage. The proposed modifications will not result in a change to the hydraulic capacity of the WWTP.

CBOD₂₀ Wasteload Allocation

The Commission's *Water Quality Regulations (WQR)* provide for the allocation of the stream assimilative capacity where waste discharges would otherwise result in exceeding such capacity. It was determined in the late 1960's that discharges to the Delaware Estuary be limited to a total of 322,000 lbs/day of carbonaceous biochemical (first stage) oxygen demand (CBOD₂₀). In accordance with the Commission's *WQR*, the assimilative capacity of each Delaware Estuary zone minus a reserve was originally allocated in 1968 among the individual dischargers based upon the concept of uniform reduction of raw waste in a zone (Zones 2, 3, 4 and 5). The totals and percent reduction for each zone are given in Table 1 of the Commission's *Status of CBOD₂₀ Wasteload Allocations* (Revised October 1, 2000). The docket holder's WWTP discharges to Water Quality Zone 2 of the Delaware River at River Mile 108.82. Water Quality Zone 2 is currently over-allocated and reductions have occurred since the year 2000 in an attempt to balance the zone.

CBOD₂₀ Allocation History

Docket No. D-92-30 CP approved an allocation of 540 lbs/day of CBOD₂₀ on June 24, 1997. Docket No. D-1992-030 CP-2 continued approval for the allocation of 540 lbs/day of CBOD₂₀ on September 12, 2012.

CBOD₂₀ Determination

Docket No. D-1992-030 CP-2 required monthly sampling for CBOD₂₀ thru September 2013. After September 2013 quarterly sampling was then required. Upon review of the BOD₅ and CBOD₂₀ data a linear relationship cannot be established between the two parameters. Therefore, EFFLUENT TABLE A-2 above requires monthly CBOD₂₀ sampling in accordance with Commission requirements. The sample shall be taken concurrently with BOD₅ to continue to attempt to establish a ratio between the two and to better determine the necessity for the allocation given in the past. These samples shall be included in the yearly monitoring report required by DECISION Condition II.d. of this docket. Commission staff recommend the continuance of the previously approved 540 lbs/day CBOD₂₀ allocation for the length of this docket as the docket holder's data showed that this allocation can be met absent a plant failure.

Toxicity

Zone 2 stream quality objectives exist for toxic pollutants. They include criteria to protect the taste and odor of ingested water and fish (See Table 4 of Commission's *WQR*), to protect aquatic life (Table 5), and to protect human health (Tables 6 & 7). Toxicity in effluent is measured as Whole Effluent Toxicity (WET), and results from both acute and chronic exposures. The acute toxicity stream quality objective for Zone 2 is 0.3 Toxic Units (TU_a = 0.3). The chronic toxicity stream quality objective for Zone 2 is 1.0 Toxic Units (TU_c = 1.0).

The docket holder is required to perform Whole Effluent Toxicity (WET) tests to generate acute toxicity and chronic toxicity data on the fathead minnow (*Pimephales promelas*) twice per year and cladoceran (*Ceriodaphnia dubia*) quarterly as part of the existing NJPDES Permit, respectively. The FINDINGS Section of Docket No. D-1992-030 CP-2 narratively

required cladoceran sampling for acute toxicity and fathead minnow for chronic toxicity since data did not exist to establish a more sensitive species for either test. As this requirement was not explicit in EFFLUENT TABLE A-1 the docket holder did not perform the additional tests. Commission staff do not intend to pursue these violations. However, as described in EFFLUENT TABLE A-2 of this docket, Commission staff recommend that WET tests be performed on both fathead minnow and cladoceran simultaneously with the same frequency established in the existing NJPDES Permit twice per year for acute toxicity and quarterly for chronic toxicity effective upon approval of this Docket and have requested that NJDEP staff include this monitoring in their renewed Permit. Results shall be submitted annually with the report required in DECISION Condition II.d. of this docket. Monitoring shall be continued until at least 10 tests per species have been completed. After completing four tests per species, the docket holder may request by letter to the Executive Director to limit testing to the most sensitive species. Approval to limit testing to only the most sensitive species must be granted by the Executive Director prior to eliminating testing for the least sensitive species (See DECISION Condition II.x.).

Other

At the docket holder's Outfall the tidal Delaware River has an estimated seven-day low flow with a recurrence interval of ten years (Q_{7-10}) of 1,663 mgd (2,573 cfs). The ratio of this low flow to the hydraulic design capacity of the 2.0 mgd WWTP is 831.5 to 1.

The two surface water intakes of record for public water supply within a 5 mile tidal influence of the docket holder's discharge are located on the Delaware River approximately 1.2 River Miles away, and are operated by the Philadelphia Water Department (Baxter Facility) and NJAWC (Delran Facility).

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 effluent limits in the NJPDES 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*.

C. DECISION

I. Effective on the approval date for Docket No. D-1992-030 CP-3 below:

a. The project described in Docket No. D-1992-030 CP-2 is removed from the Comprehensive Plan to the extent that it is not included in Docket No. D-1992-030 CP-3; and

b. Docket No. D-1992-030 CP-2 is terminated and replaced by Docket No. D-1992-030 CP-3; and

c. The project and the appurtenant facilities described in Section A “Physical Features” of this docket shall be added to/ continued in 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 NJDEP in its NJPDES Permit and TWA, 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 electronically to the DRBC Project Review Section via email aemr@drbc.state.nj.us on the **Annual Effluent Monitoring Report Form** located at this web address: <http://www.state.nj.us/drbc/programs/project/application/index.html>. 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 reseeded 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 expires 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 discharge wastewater 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. 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.

r. 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.

s. 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.

t. 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.

u. 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.

v. 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.

w. The docket holder shall continue to submit monitoring data and PMP Annual Reports to the Commission’s Modeling, Monitoring and Assessment Branch as required in the existing NJPDES Permit.

x. The docket holder is required to perform WET tests to generate acute toxicity and chronic toxicity data on the fathead minnow twice per year and cladoceran quarterly as part of the existing NJPDES Permit, respectively. EFFLUENT TABLE A-2 of this docket requires that WET tests be performed on both fathead minnow and cladoceran simultaneously with the same frequency established in the existing NJPDES Permit twice per year for acute toxicity and quarterly for chronic toxicity effective upon approval of this Docket and have requested that NJDEP staff include this monitoring in their renewed Permit. Results shall be submitted annually with the report required in DECISION Condition II.d. of this docket. Monitoring shall be continued until at least 10 tests per species have been completed. After completing four tests per species, the docket holder may request by letter to the Executive Director to limit testing to the most sensitive species. Approval to limit testing to only the most sensitive species must be granted by the Executive Director prior to eliminating the testing for the least sensitive species.

BY THE COMMISSION

DATE APPROVED: September 16, 2015

EXPIRATION DATE: August 31, 2020