Clean Ocean Action www.CleanOceanAction.org

Ocean Advocacy
Since 1984

August 8, 2008

Howard P. Tompkins
Chief, Bureau of Point Source Permitting Region 1
P.O. Box 029
Trenton, NJ 08625

RE: DRAFT NJPDES RENEWAL PERMIT FOR THE OCEAN COUNTY CENTRAL WATER POLLUTION CONTROL FACILITY, NJPDES PERMIT # NJ0029408.

VIA EMAIL AND MAIL

Dear Mr. Tompkins:

Clean Ocean Action is a regional, broad-based coalition of over 125 conservation, environmental, fishing, boating, diving, student, surfing, women's, business, service, and community groups with a mission to improve the degraded water quality of the marine waters of the New Jersey/New York coast. These comments are in response to the draft New Jersey Pollutant Discharge Elimination System (NJPDES) permit # NJ0029408 for the Ocean County Central Water Pollution Control Facility (OC- Central) to discharge to surface water. The effluent from this facility is discharged into the Atlantic Ocean approximately 5,000 feet offshore at Latitude 39^{o} 54' 20.6" Longitude 74^{o} 03' 20.3". The draft permit also contains conditions allowing the permittee to beneficially reuse treated effluent for restricted on-site only purposes at this time. Clean Ocean Action (COA) has reviewed the draft permit and for the reasons cited below, we urges the Department not to approve it at this time.

Flow Capacity: The facility is within its designated flow capacity of 28 MGD with a 12-month average of 23.1 MGD and a Daily maximum of 26.5 MGD, but currently, there is no numerical flow limitation. Please explain why, unlike other wastewater treatment facilities (WWTFs) that discharge into the Atlantic Ocean, this facility does not have a numerical flow limit. The facility has requested a re-rating of the facility from 28 MGD to 32 MGD. The draft permit does not contain any information regarding what, if any, changes have been made to the facility since the last permit was issued, that would allow an expansion of capacity. The Department's decision to maintain the loading and effluent limitations based on the 28 MG is appropriate and COA urges the Department to deny the facilities request without valid evidence that conditions at the plant have been upgraded to accompany the increased flow capacity. COA also requests clarification on whether the rated flow capacity for OC-Central was already increased in the last permit cycle, as is suggested by language on page 20 of the Fact Sheet for this draft permit which states *"However, the existing permit, which authorized a higher permitted flow…"*

Bacterial Indicators: The Department must expedite the replacement of fecal coliforms with enterococci as the bacterial indicator and require effluent limitations for enterococci before the next permit review period. The Surface Water Quality Standards, N.J.A.C. 7:9B, were recently amended to replace fecal coliforms with enterococci in marine waters. We understand the Department has concerns about the frequency and magnitude of unexplained Enterococci spikes and that prior to the 2007 EPA adoption of Method 1600, this facility used a different method for determining enterococci data. But, we strongly oppose the Department's decision to postpone enforcement of any Enterococci limitation for an entire 5-year permit cycle based on the need to assess the correlation between Enterococci and Fecal Coliform data. In order to maintain consistency with other state water quality monitoring programs and to ensure protection of both the environment and the public, the transition from Fecal Coliform to Enterococci limitations must be expedited. Therefore, the proposed sampling schedule of only 5 samples per month per quarter must be increased to 15 samples per month for two years using the new method. This increased monitoring frequency will provide the Department with the data set necessary to conduct a comparative analysis of Enterococci and Fecal Coliform and will allow the Department to remove the *"monitor only"* status for enterococci and replace it with *"limitations"* based on the new Surface Water Quality Standards (N.J.A.C. 7:9B) for bacteria and the comparative analysis within 2.5 years from the effective permit date (EPD)

COA also requests clarification on the enterococci data provided in the summary table on page 29 of the Fact Sheet, as both the monthly geometric mean average and instant maximum are both listed as 235 per 100 ml.

COA would like to emphasize that it is the NJPDES permittee's responsibility to meet the SWQS for both bacteria and chlorine producing oxidants (CPOs). This may also require that the effluent be dechlorinated prior to discharge or an alternative disinfection method has to be utilized that does not produce toxic chlorine residuals or byproducts. In addition, without an enterococci limitation in NJPDES permits, the Department will not be able to *"develop total maximum daily loads (TMDLs) and to regulate wastewater discharges"* in accordance with SWQ Criteria.

Effluent Monitoring: The frequency of sampling contaminants needs to be increased. WET testing should be conducted monthly or at least quarterly, as only once per year is inadequate to assess effluent toxicity. The frequency of toxic metals, organic compounds and cyanide should all be at least quarterly.

COA continues to urge the Department to reject the "allowance" of a mixing zone when developing all WQBELs because of the harm mixing zones present to marine life. This is never more apparent than for CPO, as chlorine residual can be acutely toxic within minutes of exposure to fish and other aquatic life (see Section A below for more details). The Surface Water Quality Criteria at N.J.A.C. 7:9B-1.5(h)1. provides very specific requirements that must be met in order for the allowance of mixing zones, including:

ii. "[S]urface water quality criteria must be met at the edge of the regulatory mixing zone."

v. "Regulatory mixing zones shall be established to assure that significant mortality does not occur to free swimming or drifting organisms"

ix. "The regulatory mixing zone shall not inhibit or impede the passage of aquatic biota."

We request copies of all studies that are being used by this facility to prove the above listed requirements are being met within the mixing zone.

Contaminant Specific Issues with Effluent Monitoring:

A. Chlorine Producing Oxidants (CPO):

1. The 3-year delay in implementing a CPO standard is unacceptable. What is the justification for such a protracted implementation schedule when CPO's are known to be highly toxic to marine organisms even at very low concentrations, resulting in both acute and chronic effects? The silverside (*Menidia menidia*), a fish that is present in New Jersey marine waters, is considered one of the most sensitive marine/estuarine species (96-hour LC_{50} 0.040 mg/L).[1] Effluent discharged into the Atlantic from this facility averages almost 10 times higher than the LC50 for Menidia (monthly average CPO = 0.33mg/L[2]) and the proposed daily maximum in the draft permit is over 20 times higher. CPO have been found to reduce filtration and reproduction in rotifers, lobsters and fish.[3] In fish, CPO can affect the transport of oxygen in blood by reacting with the hemoglobin of the red blood cells to form methemoglobin, inhibiting the cell's ability to bind oxygen.[4] As CPO concentrations are increased, severe hemorrhaging occurs throughout the body and from the fins. In addition, the body of the fish becomes covered with a mucous coating, and the fish shows increased "coughing" and erratic swimming.[5]

2. Dilution factors due to the allowance of mixing zones do not protect marine life near the end pipe from CPO.

3. The two studies cited by the Department as support for the proposed allowance of a CPO Demand adjustment when determining water quality based effluent limitations for CPO are inappropriate and insufficient. CPO Demand is not only a function of CPO concentration and time, but also water temperature, pH, turbidity, organic content and ammonia concentrations, of the receiving water[6]. All of these factors will impact the rate of CPO demand. The CPO Demand Factor equations generated by this study (and accepted for use by the Department) do not include any of these important variables.

   In addition, the CPO Demand Study did not appear to include any biological data to support the theory that CPO demand will eliminate toxicity of CPO. There is a proven synergistic effect between CPO toxicity and temperature, i.e. with increasing temperatures, the concentration of CPO that causes significant mortality rates in marine fish goes down. So, although warm water temperatures may reduce the concentration of CPO in the water, the exposed marine organisms are more susceptable to the toxic effects of CPO. Without biological studies on

[1] Bender *et al.*, 1977
[2] Permit Summary Table, Fact Sheet for NJ0029408, page 29
[3] Capuzzo *et al.*, 1976, 1977; Capuzzo, 1977, 1979a
[4] Buckley, 1976
[5] Grothe and Eaton, 1975; Buckley, 1977; Travis and Heath, 1981
[6] Heinemann *et al.*, 1983; Abdel-Gawad and Bewtra, 1988; Milne, 1991

the impacts of different CPO concentrations during different times of the year, it is impossible to determine whether the increased CPO Demand rates during summer months (as reported by the New Jersey Coastal Group Facilities) will be enough to eliminate the substantial metabolic impacts of high temperature and CPO exposure to aquatic organisms within the mixing zone.

B. Ammonia:

1. This draft permit requires monitoring and reporting only for ammonia. Dilution factors are not appropriate given the toxicity of ammonia to marine organisms. We understand the Department's determination that *"discharge of ammonia in the permittee's effluent will likely not cause an excursion of the applicable SWQS"* was not based on ammonia effluent data from this facility because *"insufficient effluent ammonia data exists for this facility"*. Therefore, the Department must re-evaluate the need for a WQBEL following the first year of data collection. If excursions of the SWQS for ammonia occur during this time period, then a WQBEL must be established. Depending on the results of the re-evaluation, the Department should maintain the right to impose WQBELs for ammonia before the end of this 5-year permit cycle.

2. COA requests the Department review the facility's standard operating procedures for composite ammonia samples to ensure the samples are being properly handled in a way that will maintain sample integrity and provide accurate results. The EPA recommends that ammonia samples be immediately preserved with sulfuric acid and continuously kept on ice to prevent any biological degradation during the 24-hour collection period.

C. Whole Effluent Toxicity (WET):

The annual monitoring frequency requirements in this draft permit **is not sufficient** to adequately detect and assess variations in effluent toxicity between and within years. Annual acute WET test results for OC-Central have consistently been in the low 50% range, only a few percentage points from failure. These results indicate the effluent from OC-Central is toxic to almost 50% of the Mysids exposed. Therefore, in order to ensure the acute WET effluent standard of an $LC50 \geq 50$ % are being met throughout the year, the Department must increase WET testing frequency to once a month,.

D. Dissolved Oxygen (DO):

The New Jersey coastal waters often experience dangerously low D.O. levels during the summer months. To address this impairment, point sources of low DO waters need to be identified and mitigated. A DO measurement of only once per month is not sufficient, instead daily or biweekly measurements would be more appropriate for evaluating the discharge.

E. Nitrogen:

The Department must develop and establish effluent standards for Total Nitrogen at OC-Central and other facilities that discharge to coastal waters regardless of the lack of SWQC for nitrogen. Nitrogen is the primary limiting nutrient in marine waters and the discharge of nitrogen from WWTF contributes to increases in algal biomass and reductions in dissolved oxygen concentrations due to the decay of associated organic matter. The fact that all of New Jersey's coastal waters are impaired for Dissolved Oxygen provides reasonable justification for, at minimum, a monitor and report requirement for nitrogen. To address the dissolved oxygen impairment of New Jersey waters, it is necessary for the Department to identify and minimize the contribution of nitrogen to coastal waters by point sources.

F. Toxic Metals, Organic Compounds and Cyanide:

COA has repeatedly urged the Department to increase the frequency of monitoring of pollutants to monthly intervals. The annual and semi-annually monitoring frequency requirements listed in this draft permit **are not sufficient** to adequately detect and assess variations in toxin levels between and within years.

Reclaimed Water for Beneficial Reuse (RWBR): COA is concerned that RWBR may be approved for this facility without adequate data on the effluent to be reused, without any limitations or conditions for several important contaminants, and without a public comment period. The permit allows the Department to approve several different public access and restricted access reuse options via only minor modification to the permit.

The RWBR Technical Manual's guidelines for preparation of Reuse Feasibility Studies for Wastewater Treatment Facilities do not include a requirement that the facility submit their last five (5) years of effluent monitoring data. Until an amendment is made to the RWBR Technical Manual, the Department must include the above requirement in the facility's permit, to allow for comparison with relevant limitations/conditions of the requested reuse. Simply reviewing five (5) years worth of priority pollutant scans from the wastewater facility is not sufficient to characterize the potential contaminants in the effluent stream or identify additional treatment that may be necessary

Clean Ocean Action urges the Department to either require this facility to first submit a Reuse Feasibility Study, or refrain from approving any additional reuse of wastewater until the newly proposed requirements are adopted.

In conclusion,
COA finds that effluent sampling at OC-Central is not frequent enough to properly evaluate the contaminants in the discharge, limits are not being implemented for important parameters such as ammonia, nitrogen and enterococci, and mixing zones have been allowed without proper study of the effects on aquatic organisms. For these reasons, we are very concerned that this facility is releasing toxins in toxic amounts in the effluent. The draft permit should not be approved until additional limits are included and sampling frequencies are increased.

We thank you in advance and look forward to your written reply.

Sincerely,

Cindy Zipf
Executive Director

Jennifer Samson, Ph.D.
Principal Scientist

Heather Saffert, Ph.D.
Staff Scientist