February 12, 2015

Sent via U.S. Mail and Email to: Bryan.ashby@state.de.us

Mr. Bryan A. Ashby, Manager
Surface Water Discharges Section
Delaware Department of Natural Resources
and Environmental Control
89 Kings Highway
Dover, Delaware 19901

Re: Delaware Riverkeeper Network Comments on Draft NPDES Permit 3256D/74 for the Delaware City Refinery

Dear Mr. Ashby:

The Delaware Riverkeeper Network has reviewed the draft NPDES Permit for the Delaware City Refinery ("DCR") and has identified deficiencies that warrant significant changes to the permit in order to properly comply with the Clean Water Act ("CWA.") The most glaring issue relates to the failure of the Delaware Department of Natural Resources and Environmental Control ("DNREC") to properly apply the CWA's Section 316(b) Best Technology Available requirement by requiring a technology that is truly most protective of the over 1 billion fish, eggs, larvae and aquatic life, including potentially endangered species, impacted by DCR's cooling water intake system. Given the well-known devastating and continuing entrainment and impingement impacts on the Delaware River from the DCR's operations and the absence of a rational basis to deviate from DNREC's 2011 pre-notice draft BTA determination and accompanying economic achievability and viability reviews, DNREC must designate closed cycle cooling, or its functional equivalent, as BTA or, at minimum, as interim BTA for both entrainment and impingement at the facility.[1]

[1] *See* 40 CFR 125.98(b)(6) and (g).

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The Delaware City Refinery Kills over a Billion Aquatic Organisms Each Year With Excessive Impact on a Variety of Species

The Delaware City Refinery is a major consumer of Delaware River water -- taking in an average of 452 million gallons of water from the Delaware River each day ("mgd").[2] For 12 years DCR has been operating with an outdated Clean Water Act permit. As a result, throughout those 12 years DCR has been needlessly killing fish and aquatic organisms. By DNREC's own estimations, the current once through cooling system at DCR destroys over a billion organisms per year through entrainment and impingement impacts.[3] Entrainment occurs when aquatic life, mostly early life stage fish eggs and larvae, are pulled into and through the cooling system. Impingement occurs as many juvenile and mature fish are trapped against the cooling system's intake screens. Among those killed at DCR are upwards of 46 million striped bass, white perch, bay anchovy, and weakfish.[4] Over 53 species of fish have been found killed as a result of the DCR cooling operations[5] and so the death of the millions of fish counted in these research efforts is but a mere sampling of the total fish kills that happen at the DCR.

DCR kills approximately 7.7% of all weakfish in the Delaware Estuary.[6] DNREC's own study warns that weakfish mortality "is of special concern, since weakfish have declined throughout their range coast wide. The Delaware Bay stock has seen one of the earliest and steepest declines."[7] According to National Marine Fisheries Service estimates, the recreational catch of weakfish has declined *by nearly two orders of magnitude* in the past decade with the declines expected to continue at a steady rate into the future.[8] As a result, DCR's impact on adult weakfish populations will become more significant as the adult population continues to shrink.

DCR also kills 27% of all the striped bass and 19% of the bay anchovy in the entire Delaware Estuary.[9] Like weakfish, striped bass harvest levels in the Delaware Estuary have been declining over time.[10] Kills to the total bay anchovy stock in the Bay and River "indicate[] that the refinery could be having a noticeable impact on the total productivity of the Bay and River for the production of desirable predator species as well as reducing the attraction of adult predators."[11]

When the fish kills of the Delaware City Refinery are combined with those of the Salem Nuclear Generating Station across the River it has been determined that just these two facilities combined

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2 Delaware Department of Natural Resources & Environmental Control, Fact Sheet, Attachment A – BTA Determination (2011).
3 NPDES Fact Sheet, Attachment A – BTA Determination p. 7
4 Delaware Department of Natural Resources & Environmental Control, Fact Sheet, Attachment A – BTA Determination at 25 (2011).
5 *See*, DNREC Secretary's Order No. 2009-W-0042, dated November 2, 2009, Page 23.
6 Id.
7 Id. at 47.
8 Id. at 11.
9 Id. at 44, 47.
10 Id. at 47.
11 Id.

kill more than half of the striped bass population of the Delaware River – a shocking 56%. Of the Weakfish population, the two facilities combined kill up to 23% of all the weakfish found in the River.[12] When viewed together, "the Refinery and the Salem Generating Station is certainly taking a significant part of the forage base of Delaware Bay."[13]

Closed Cycle Cooling As BTA Has Already Been Determined – Additional Analysis Is Not Needed

Because the vast majority of fish killed at DCR and killed in the Mid-Atlantic region (93.8%, as assessed by EPA)[14] are killed as the result of entrainment, it is critically important to ensure that its draft permit addresses this issue. The only BTA for entrainment included in this draft permit is a 33% reduction of flow to 303 million gallons per day calculated on a 12 month rolling average (which the December 5, 2014 letter from DCR to DNREC says will reduce entrainment and impingement rates by a similar amount) and 4½ years of analysis to determine other strategies that can/should be implemented at the facility in future years. But DNREC has already determined that BTA for entrainment at DCR is closed cycle cooling which will result in a 90% reduction of the fish kills at the facility – another 4 ½ years of study by DCR, and then follow up consideration of the data by DNREC, with still yet additional time for implementation, is not needed nor is it supported by the record.

In June 2011, DNREC issued a pre-notice draft of an updated NPDES permit, as well as a preliminary BTA determination for cooling water intake and discharge and a fact sheet on the economic viability of the DCR.[15] DNREC's 2011 BTA Determination found that BTA for DCR is a closed-cycle cooling water intake structure.[16] DNREC noted that the current intake structure kills millions of fish, indirectly causes air and water environmental impacts, and has been the cause of numerous NPDES permit violations.[17] What is more, the unusual configuration of the current intake structure within a 4,673-foot-long channel inland from the River results in added fish kills, uneven water intake and refinery shutdowns, and maintenance dredging requirements.[18] In contrast, a closed-cycle cooling water intake would reduce water intake by 90%, would avoid intake problems from variable river and weather conditions, and would reduce

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[12] Desmond M. Kahn, Ph.D., Delaware Division of Fish and Wildlife Fisheries Section, *Impacts of Impingement and Entrainment Mortality by the Delaware City Refinery on Fish Stocks and Fisheries in the Delaware River and Bay*, at 8 (Oct. 9, 2008).

[13] Id.

[14] US EPA, Benefits Analysis for the Final Section 316(b) Existing Facilities Rule, May 2014.

[15] DNREC Pre-Notice Draft National Pollutant Discharge Elimination System Permit Number DE 0000256, at 36 (Jun. 21, 2011); Delaware Department of Natural Resources & Environmental Control, Fact Sheet, Attachment A – BTA Determination (2011); Delaware Department of Natural Resources & Environmental Control, Fact Sheet, Attachment B BTA Determination – Baseline Economic Viability of Delaware City Refinery and Power Plant (DCR) (2011).

[16] Delaware Department of Natural Resources & Environmental Control, Fact Sheet, Attachment A – BTA Determination at 3.

[17] Id.

[18] Id. at 15-16.

fish mortality in direct proportion to the reduction in intake.[19] Thus, the pre-notice draft NPDES permit required installation of a closed-cycle cooling system or achievement of the results expected from such an installation by other means[20] is what should be required in this draft permit. The determination that closed-cycle cooling is feasible is in keeping with the EPA's findings in support of its proposed 316(b) rule: "Closed-cycle cooling … is technically feasible at most sites."[21] It is also in keeping with the House Concurrent Resolution No. 7 which demonstrates the high level of support for closed cycle cooling as BTA in Delaware and urges "The Department Of Natural Resources And Environmental Control To Require All Facilities That Operate In Delaware Waters And Utilize Cooling Water Intake Structures To Implement "closed-cycle" Cooling Systems, And Urg[es] The Department Of Natural Resources And Environmental Control To Declare That "closed Cycle" Cooling Systems Constitute The Best Technology Available For Water Intake Structures."[22]

Given that a 90% reduction in impingement and entrainment is already deemed feasible by DNREC, technically and economically, DNREC should now specifically require closed cycle cooling at DCR as the most appropriate and achievable BTA, since nothing from a technical point of view has changed since 2011. DNREC should at the very least mandate that the current draft permit require a technology equal to that level of fish kill reduction. The draft issued provides no discussion of other options that could achieve this same level of reduction and provides no analysis of why it has now reversed course on closed cycle cooling. EPA's recent 316(b) technical documents provide a range of options to at least be looked at, and yet apparently none were, at least no such analysis is evident from the record made available to the public.

The 33% capacity reduction currently being proposed not only fails to reflect BTA at DCR as already determined by DNREC, but given that the capacity reduction will be averaged out over a 12 month period it is not clear that this 33% presumed reduction in fish kills is accurate – if intake reductions only occur during periods when there are low fish concentrations near the intake structure, and that higher intakes happen during period of higher fish concentrations (e.g. given the time of year and flow needs) it is possible that the fish takes will be significantly higher than this estimate. Any capacity limitation needs to take this into account – the 12 month rolling average approach is not appropriate if it does not include a limitation on water withdrawals during times of high fish concentration.

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[19] Id. at 8, 33.

[20] DNREC Pre-Notice Draft National Pollutant Discharge Elimination System Permit Number DE 0000256, at 22 (Jun. 21, 2011). The draft permit also required a reduction in cooling water intake from the existing structure from 452 mgd to 303 mgd. Id. The Refinery plans to comply with this requirement by restarting its Unit 43 Ether Plant Cooling Tower that has been out of operation since 2002. Delaware City Refining Company Unit 43 Ether Cooling Tower Restart Application, at 1 (Sept. 21, 2012), *available at* http://delaware.sierraclub.org/sites/delaware.sierraclub.org/files/documents/2012/10/ether-cooling-tower-restart-application-1.PDF.

[21] USEPA, Technical Development Document for the Final Section 316(b) Existing Facilities Rule, May 2014.

[22] *See*, http://www.legis.delaware.gov/LIS/LIS145.NSF/vwLegislation/HCR+7?Opendocument

Additionally, the recent promulgation of the United States Environmental Protection Agency ("USEPA") regulations on CWA Section 316(b) supports closed cycle cooling, especially in light of the heightened scrutiny required by DNREC with the presence of various endangered species in the Delaware River and its environs. DNREC's failure to mandate closed cycle cooling, already determined by it to be BTA, or to explain why it reversed its chosen BTA from closed cycle cooling to movable screens, additional study, and an already pre-agreed capacity reduction is clearly arbitrary and capricious. The failure to provide this explanation given the higher level of success closed cycle cooling will provide as compared to other options, including the wait and study option, fails to fulfill DRNEC's legal obligations to provide a written statement of its proposed entrainment determination as required by the new 316(b) regulations.[23] The fact that DNREC pre-negotiated and committed to this minimalist strategy for addressing the fish kills at the DCR is clearly a violation of the public trust, of the public process, of DNREC's obligation to undertake this permitting process in a fair and impartial manner – by committing to this minimalist BTA approach as part of a settlement negotiation has compromised DNREC beyond repair. Administrative agencies such as DNREC have obligations under State laws and in this case, also federal laws, to fulfill their legal mandates to protect the environment by complying with those laws and doing so with transparency in the process. The Delaware Riverkeeper Network has reviewed the 26 page Draft Fact Sheet and the 58 page Draft Permit and it can find no explanation that explains how DNREC has changed its 2011 BTA determination of closed cycle cooling to the inferior environmentally damaging phased-in traveling screen, research and pre-agreed capacity reduction efforts included in the draft permit. DNREC should revise the Draft Permit to change its chosen BTA back to closed cycle cooling as determined in the June 8, 2011 draft BTA determination.

The potential higher cost of the better technology of closed cycle cooling is justified both by its benefit to the environment and by the DNREC in its June 8, 2011 BTA draft determination. It also must be identified that PBF Energy, the owners of DCR have been quite profitable with a third quarter 2014 operating income of $284.1 million and an adjusted net income of $155.6 million or $1.60 per share. As reported by PBF, this is their fourth successive quarter of positive results and their east coast facilities, including DCR, have contributed over 50% of total income as classified as EBITDA[24]. PBF and DCR are profitable. DNREC should not put increasing these profits still higher by allowing it to misuse and over-abuse the public resources of the Delaware River. This permit as constituted not only violates the CWA, but it also violates the State's obligations under its own public trust doctrine.

The record before DNREC, including its own 2011 pre-notice draft BTA determination, the accompanying economic achievability and viability reviews, and the DCR's entrainment impacts on the Delaware River's aquatic lifeforms, overwhelmingly demonstrates that DNREC should act to make a sufficiency determination as allowed in 40 CFR 125.98(g) to set closed cycle cooling or its functional equivalent as the BTA standards for entrainment and impingement at the

[23] See 40 CFR 125.98(b)(6) and (g).
[24] Earnings before interest, taxes, depreciation, and amortization

DCR.[25] The Delaware Riverkeeper Network hereby requests DNREC to now act to make just such a sufficiency determination since further studies will only conclude what is already known, that closed cycle cooling combined with effective traveling screens is the only technology that will stop the killing of billions of fish and other biological organisms in and on the Delaware River. The permitting process should be stopped, the sufficiency determination should be made by DNREC and the draft permit should be reissued requiring closed cycle cooling with traveling screens as BTA.

Should DNREC fail to undertake the performance of a sufficiency determination under 40 CFR 125.98(g), it is still obligated to exercise its best professional judgment to set interim BTA standards for the DCR. In doing so, the record before DNREC unequivocally demonstrates that closed cycle cooling, or its functional equivalent, must be set as the interim BTA standard for impingement and entrainment. Either of these actions is also supported by CWA Section 510 that reserves to the States the authority to implement requirements that are more stringent that the federal requirements.

The Proposed DCR Permit Obligations Do Not Achieve BTA

Understanding that facilities like DCR are, individually and cumulatively, a significant and serious source of the unnecessary deaths of billions of fish and other aquatic life every year, Congress included section 316(b) in the Clean Water Act. Section 316(b) requires "that the location, design, construction, and capacity of the cooling water intake structure reflect the best technology available for minimizing adverse environmental impact."[26] Section 316(b) has long been implemented and understood to be focused on minimizing the impingement and entrainment impacts of facilities like DCR.

Throughout its years of operation, every owner and soon-to-be-owner of DCR has known of their 316(b) obligations. It is not appropriate for DNREC to be giving the current DCR owners yet another over 5 years to come into compliance with their obligations to minimize fish impingement and entrainment as required by Section 316(b) of the Clean Water Act, but that is exactly what the draft permit does.

The Draft NPDES permit for DCR provides the wrong steps for reducing the facility's fish kills, including:

1. DCR will be installing new traveling screens to reduce impingement at the facility – three Hydrolox S6000 Flush Grid Nylon screens.
2. DCR will be given 4½ years to study ways to reduce fish entrainment, only being obligated to submit their findings 6 months before DNREC has to issue a new draft permit for the facility, with implementation of any identified technology only coming thereafter.

[25] See 40 CFR 125.98(g)
[26] 33 U.S.C. § 1326(b)

3. DCR will be reducing its cooling water intake to 303 million gallons per day (mgd) on a 12 month rolling average.

Given the decades of needless fish kills at DCR, these steps are too little too late and DNREC should be mandating they do better. Also, the draft permit does not include verifiable and enforceable permit conditions that will ensure the technology will achieve the necessary performance.

Hydrolox Screens Are Being Given Undue Level of Credit

In its December 5, 2014 communication to DNREC titled "Supplement to Renewal Application for NPDES Permits …," DCR attempts to assert that the Hydrolox screens are significantly superior to the intake screens currently in operation at the facility and should be given both impingement and entrainment credit for its implementation. DCR should not be given undue credit for implementing this technology. DCR has long been operating with highly deficient technology at the facility, the fact they are putting in place an existing technology that will reduce their inordinately high fish kills should not give them an unduly high level of credit towards coming into compliance with the BTA obligations of the Clean Water Act. Other facilities in the nation have long done a better job at avoiding fish kills than DCR and yet they are still required to comply with the law using ever more effective and sometimes more expensive technologies. The fact that DCR is just now putting in place the basics and more significantly (on a percentage basis) reducing their fish kills should not be seen as any success in fish kill reduction. DNREC should only recognize this action as a basic first step that still requires much more attention to the immediate problems for the facility to realistically be seen as complying with the BTA requirements of the CWA.

Furthermore, as noted by EPA, Hydrolox is a relatively new technology with limited testing. To the extent there were positive results, the findings were with regards to species that are high Representative Important Species at DCR, so translating that success to DCR is of relatively limited value. DNREC is essentially allowing DCR with its Hydrolox system to use our river and our fish as their testing grounds for their technology.[27] The Delaware River's aquatic biology has suffered too long at the intakes of DCR and other cooling water intake structures operating along its length, so we request proven technologies be mandated, not experimental ones.

It is important to recognize that exchanging entrainment for impingement as an aquatic fate does not necessarily translate into a living outcome for impacted fish. As EPA acknowledged in its 316(b) technical support documentation, impinged fish often also suffer a fate of death. While modifying intake screens may reduce entrainment mortality, if often results in an increased level of impingement mortality for fish.[28] This exchange of death sentences is not well considered or

[27] US EPA, Technical Development Document for the Final Section 316(b) Existing Facilities Rule, May 2014.
[28] US EPA, Technical Development Document for the Final Section 316(b) Existing Facilities Rule, May 2014.

addressed by DNREC's documentation or draft permit determination, thus it needs to be addressed in the final permit.

All Interim Measures Should be Implemented Immediately

The Draft Permit (Page 30) has provided three progressive dates of May 31, 2015, June 30, 2016 and June 30, 2017 to install Modified Traveling Screens on the three intake structures. The Delaware Riverkeeper Network cannot identify any legitimate basis for such an extended schedule, since this less than desirable approach is only classified as "interim." There is no justification for the continued death of millions of fish by giving DCR two extra years to install interim technology. The permit schedule should be changed so that all three intake structures will be scheduled to be in compliance with this interim requirement no later than May 31, 2015.

CWA Section 316 (b) Endangered Species Process Has Not Been Properly Followed

The CWA Section 316(b) requires that the National Marine Fisheries Services ("NMFS") and the U.S. Fish and Wildlife Service ("USFWS") review and comment on draft permits, prior to the public notice for the purposes of identifying if the proposed BTA will promote and enhance protection of threatened and endangered species under the Endangered Species Act ("ESA.") The regulations under 40 CFR §125.98(h) state that the Director (USEPA Regional Administrator) or in this case DNREC Director, cannot propose or publish the draft permit, unless it has received the requisite responses from NMFS and USFWS. While this may have happened, the Delaware Riverkeeper Network cannot find any information in the record as constituted by the Draft Permit or the Draft Fact Sheet that indicates this process has been followed, or what changes have been made to the draft to reflect any of these comments. This information should be disclosed as part of the Draft Permit, so that the public may have the opportunity to comment.

DNREC Needs To Relinquish Decision Making Authority Over DCR's Permit to the USEPA

The Delaware River has been identified as home to several threatened and endangered species and the DCR operations adversely impact all species that are impinged or entrained on/in components of the intake structures. In 2001, USEPA signed a Memorandum of Agreement ("MOA") with the USFWS and the NMFS to enhance coordination with proper implementation of the CWA and the ESA. This MOA is directly relevant to the draft permit since USEPA may act to make a formal objection to a NPDES permit should it find that issuance of the permit will "likely have more than minor detrimental effect on federally-listed species or critical habitat." (Vol. 79, No. 158 FR 48382) The Delaware Riverkeeper Network is concerned that DCR may, among the billions of organisms killed by DCR, be harming threatened and endangered species. We therefore call upon DNREC to relinquish control of the issuance of this permit to the USEPA

in order for the USEPA to apply its heightened scrutiny under the MOA to require closed cycle cooling as the only acceptable BTA.

In addition, DNREC signed a Settlement Agreement with DCR on December 4, 2014, just ten (10) days prior to its issuance of the draft NPDES permit for DCR. The Settlement Agreement requires among other things, for DCR (listed in this Agreement as "DCRC") to "request that DNREC designate the Modified Traveling Screens and Fish Return System in accordance with the schedules addressed within this Agreement as interim Best Technology Available ("BTA")…" This Agreement now locks DNREC and DCR into the choice of Traveling Screens as BTA for the NPDES Permit. This settlement agreement binds DNREC to a pre-determined outcome for the DCR NPDES Permit and prevents the public from effectively and realistically participating in commenting on the draft permit and ultimately helping to shape a better issued permit.

Given that DNREC pre-negotiated and committed to the elements included in this NPDES permit for complying with BTA as part of a legal settlement negotiation with DCR, DNREC has clearly compromised its ability to be an independent arbiter of the matter and one open to expert, public and sister-agency input. As a result, it is clear that this permitting process must be brought under the direct decision making authority and oversight of the USEPA as the only way to remove bias from the process, to address the compromising legal and regulatory position DNREC has placed itself in, and to ensure full and appropriate application of section 316(b) of the Clean Water Act.

DNREC as an administrative agency has obligations under State law and in this case, also federal laws to fulfill its legal mandates to protect the environment by complying with those laws and with transparency in the process. Should DNREC not voluntarily decide to relinquish control of this permit, we call upon the USEPA to take affirmative action to object to this permit and to act to "Federalize" the permit in order to ensure proper and legal application of the terms and mandates of the CWA and the ESA. (A copy of this letter will be sent to the USEPA Regional Administrator for Region III.)

The execution of this Settlement Agreement as it relates to the draft NPDES permit violates the due process rights of the public, violates the regulations established for public participation and the intent and purpose of the Clean Water Act. We believe that the timing, content and execution of the Settlement Agreement between DNREC and DCR further demonstrates the biased relationship between DNREC and DCR and raises additional reasons why DNREC should not be the administrative entity issuing this permit.

The Settlement Agreement Puts in Place a Sweetheart Deal For DCR that Should be Overturned

The Settlement Agreement does not identify a legal authority for its execution. It states that it relates to alleged outstanding violations and noncompliance. While that explains the resolution of past issues, it is also being used to prospectively determine the BTA in a future NPDES permit. This use does not have a supportable basis in law or logic. This inapplicable use of an administrative mechanism for resolving impacts from past violations to instead bind the agency on future, unrelated matters, raises serious questions about the too-close relationship between DNREC and DCR and looks more like a sweetheart deal than a valid exercise of administrative oversight. We object to this misuse of this Settlement Agreement and will file a separate objection and appeal of this Settlement Agreement as an improper use/abuse of the NPDES permitting process.

The Clean Water Act, passed in 1972, set out ambitious plans, at that time to clean up the nation's waterways and to protect its fisheries. It is now 2015, over 43 years after the passage of the Clean Water Act and this draft permit makes a mockery of our nation's efforts to properly implement the Clean Water Act and to protect our aquatic ecosystems and fish populations that belong to the benefit of us all. DNREC and USEPA must set aside this draft permit and issue a new draft permit that fully and fairly complies with all aspects of the Clean Water Act, the Endangered Species Act and every citizen's right to a clean and healthy environment.

Respectfully,

Maya K. van Rossum
the Delaware Riverkeeper