



STATE OF DELAWARE
**DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL**

OFFICE OF THE
SECRETARY

89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PHONE: (302) 739-9000
FAX: (302) 739-6242

Secretary's Order No. 2013-A-0011

Re: Application of Delaware City Refining Company, LLC, for Air Pollution Control Permit to Restart the Ether Plant Cooling Tower Equipment (Unit 43) at the Delaware City Refinery, Delaware City, New Castle County

Date of Issuance: April 22, 2013

Effective Date: April 22, 2013

This Order considers the attached Hearing Officer's Report (Report) on Delaware City Refining Company, LLC's (Applicant) September 12, 2012 application for a permit under Regulation 1102 of the Department's *Regulations Governing the Control of Air Pollution, 7 DE Admin. Code 1102*. Applicant seeks to restart the Ether Plant Cooling Tower equipment at its petroleum refinery at 4550 Wrangle Hill Road, Delaware City, New Castle County (Facility). This activity will significantly reduce the Facility's water withdrawal from the Delaware River in partial fulfillment of the requirement that the Facility reduce its water withdrawal by 149 million gallons per day (mgd), or approximately 33%, from 452 mgd to 303 mgd, as specified in the Facility's restart agreement with the State and other existing permit conditions.

On December 19, 2012, the Department held a public hearing on the application, and the Report reviews the public comments and the Department's Division of Air Quality's (DAQ) technical analysis prepared by Ravi Rangan, P.E., DAQ's technical expert responsible for regulating the Facility's air emissions. The Report recommends

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issuance of the permit DAQ drafted. I adopt the Report, and find and conclude that the Department should issue the Applicant the permit drafted by DAQ.

The public comments raised several issues, which DAQ and the Report address. The Report notes that while most public comments supported reducing the Facility's water withdrawal from the Delaware River, several raised concerns about issuance of the air permit prior to the finalization of an updated National Pollutant Discharge Elimination System (NPDES) permit, including the Best Technology Available (BTA) determination. The significant reductions in water withdrawal, 149 mgd that will be achieved in the months ahead as the direct result of this permit issuance and additional investments and improvements, can occur much more quickly and more economically than a Facility-wide solution which would require multiple years. Other methods suggested by the public, such as the construction of new cooling towers to handle all of the Facility's 452 mgd process cooling water requirements, would require more time to implement, including meeting all applicable regulatory requirements for new construction, and allow greater degradation to the resource in the interim period.

The Department strongly agrees with the comments that the goal is to achieve significant additional reductions in the Facility's impacts on aquatic life in the Delaware River and is committed to do so. The Department finds that the restart will provide a significant first step towards the goal of reducing impacts to a similar level of performance of a closed loop cooling system and is the fastest method to achieve significant water withdrawal reductions as part of a multi-year effort.

The Department agrees with the public comments that a closed cooling system or a series of investments that replicate similar performance are better than an open loop or

once through cooling system and that further improvements beyond the scope of this air permit are necessary. Some comments cited the delay in the Department's review of the pending application to renew the NPDES permit, which while not the subject of the air permit application does regulate surface water discharge from the Facility and the associated water intake structure. The Department is currently finalizing a NPDES permit for the facility and is reviewing the document to ensure that it complies with both the regulatory requirements established in the federal Clean Water Act as well as the case law and legal precedents that were established in various related court decisions. Analyses about additional Facility improvements that will reduce impingement and entrainment impacts are appropriate in the context of the upcoming NPDES permit renewal process.

Finally, the cooling tower's operation will require the air borne release of pollutants found in the water; however such release is within allowed regulatory limits established through permit conditions, which will be mitigated through the Applicant's obtainment of appropriate offsets. To the extent that the public comments seek greater usage of cooling towers, then one consequence is that this use of water efficiency technology will be a minor increase in air emissions.

In sum, the record supports issuance of the permit and the Department finds as follows:

- 1.) The Department has jurisdiction under its statutory authority to issue the air pollution control permits in this proceeding;
- 2.) The Department provided adequate public notice of the proceeding and the public hearing in a manner required by the law and regulations;

3.) The Department held a public hearing in a manner required by the law and regulations;

4.) The Department considered all timely and relevant public comments in making its determination;

5.) The Department has considered all the factors that the law and regulations require to be considered and determines that the air pollution control permit should be issued to the Applicant for the Facility based upon the draft permit, as attached to the Report, that include reasonable conditions to protect the environment and public health consistent with the Department's statutory responsibilities; and

6.) The Department shall publish this Order on its web page and shall provide such other public notice as may be required by its law and regulations.

A handwritten signature in blue ink, appearing to read "Collin P. O'Mara", written over a horizontal line.

Collin P. O'Mara
Secretary

HEARING OFFICER'S REPORT

TO: The Honorable Collin P. O'Mara
Secretary, Department of Natural Resources and Environmental Control

FROM: Robert P. Haynes, Esquire
Senior Hearing Officer, Office of the Secretary
Department of Natural Resources and Environmental Control

RE: Application of Delaware City Refining Company, LLC for air pollution control permit to restart Ether Cooling Tower (Unit 43) near Delaware City, New Castle County

DATE: April 4, 2013

I. PROCEDURAL HISTORY

This Report makes recommendations to the Secretary of the Department of Natural Resources and Environmental Control (Department) on Delaware City Refining Company, L.L.C.'s (Applicant) September 12, 2012 air pollution control permit application submitted to the Department's Division of Air Quality (DAQ) in order to restart Ether Plant's (Unit 43) cooling tower¹ at Applicant's petroleum refinery (Facility) located at 4550 Wrangle Hill Road, Delaware City, New Castle County.

On September 30, 2012, the Department published public notice of the application in the *News Journal* and *Delaware State News*. DNREC Ex. 4. The Department's Division of Air Quality (DAQ) received many requests for a public hearing, including from Mark Martell, President of the Delaware Audubon Society, Amy Roe on behalf of the Delaware Chapter of the Sierra Club, Bill Moyer and from 100 persons, including from outside the United States, who emailed identical requests. DNREC Ex. 2. On November 18, 2012, the Department published public notice of a December 19, 2012 public hearing on the application in the *News Journal* and the *Delaware State News*. DNREC Ex. 5.

¹ The Facility's many processes are identified by unit numbers. The Department's public notice included a typo by identifying Unit 33. .

I presided over the public hearing held December 19, 2012 at the Delaware City Public Library in Delaware City. DAQ's Ravi Rangan, P.E., prepared the attached technical response memorandum (TRM) along with its recommended draft permits should the Secretary decide to issue the permits. I consider the record complete for decision based upon the information in the record, as reviewed below.

II. SUMMARY OF THE RECORD²

The record includes the transcript of the public hearing, the documents included as exhibits at the public hearing, and the documents identified herein.

At the public hearing, DAQ's representative Ravi Rangan, P.E., an Engineer with DAQ's Engineering and Compliance Branch, and Paul Foster, P.E., Program Manager of DAQ's Engineering and Compliance Branch, made introductory comments and provided for the record Department exhibits,³ which were identified above except for the public comments submitted by Maya van Rossum, the Delaware Riverkeeper, that opposed any approval until the Department issues a National Pollutant Discharge Elimination System (NPDES) permit that requires the elimination of the use of the once through cooling water system. DNREC Ex. 6.

The Applicant's representative who spoke at the public hearing was Tom Godlewski, Applicant's Environmental Engineer. Mr. Godlewski made a power point presentation and it was included as an exhibit. Applicant Ex. 1.

Mr. Godlewski explained that the cooling tower was being restarted to reduce water withdrawals from the Delaware River. He said the cooling water tower was built in the 90's when the Ether Plant was built to make MTBE, which is a gasoline additive then used to reduce the air pollution from gasoline. MTBE's usage as an additive ended, and the Ether Plant was

² The Secretary may determine different information should be in the record.

³ The Department does not have an obligation to develop the record at the public hearing, but provides certain documents to assist the public in making comments on the application.

closed along with the cooling water tower. Mr. Godlewski indicated that the application seeks to restart the usage of the cooling water tower after it has been rehabilitated, and an air permit is needed because of the air emissions from usage of the cooling tower. He noted that the annual air emissions from the cooling tower's operation would be 5.5 tons of volatile organic compounds (VOCs) and 1.7 tons of particulate matter (PM), which he explained were calculated assuming that the cooling tower would operate at 30,000 gallons per minute (gpm), which is a level higher than its 25,000 gpm original design specification. He described how the PM emissions were based upon dissolved solids from the salt in the Delaware River and based upon a conservative 5,000 parts per million (ppm) using the United States Army Corps of Engineer's study that measured the Delaware River's salinity as between 500 ppm and 5,000 ppm. The PM's calculation also included total suspended solids, which is dirt, in the water and how data showed the Delaware River water has Total Suspended Solids (TSS) between 30ppm to 90ppm, but that the application used 100 ppm to be conservative. He indicated that the PM level was below the level required by federal and state regulations, but the VOCs were subject to Delaware regulation that was more stringent than the federal regulation. He explained that the Applicant would use its bank of valid enforceable offsets and to ensure the Lowest Achievable Emission Rate (LAER), which for the cooling tower would be a monitoring system and leak repair program.

The first public speaker was Mark Martell who was speaking not as a member of any organization but from his participation in the Facility's citizen advisory committee. He requested that the air permit be considered in the context of the larger issue of the Facility's water use practices. He requested the Facility install a closed loop cooling system to prevent further damage to the Delaware fishing industry. He noted that Applicant's owner, PBF energy, just went public and his review of financial reports indicates that the Applicant should have

sufficient funds to invest in a full closed loop system, and not just restarting an old cooling tower. He cited the changes to the United States Environmental Protection Agency (EPA) regulations on cooling water intakes and how this will require the use of a closed loop system. He complimented the Facility's new owners for its relationship with the public and being more open in its public relations.

The second person to speak was Dave Carter, Conservation Chair of the Delaware Audubon Society and its 2,000 members. Mr. Carter indicated that he considers the NPDES permit as the central permit that should be issued before this permit. He stated that the Department's NPDES permit should require a closed loop cooling system. He indicated that a NPDES permit should be a prerequisite for the cooling tower's air permit since the current NPDES is from 2002 and needs to be updated. He cited studies on the Facility's adverse impact on fish from impingement and entrainment in the current open loop cooling system and the 'outdated' water intake structure. He discussed the anticipated changes in the PM calculations from the Main Channel Dredging. He also raised the issue of sea level rise. He concluded that the economics supported the installation of a closed loop system as best available technology.

Mr. Moyer spoke and asked questions on how the Facility will achieve its stated goal of the 30% reduction in its water intake. Mr. Godlewski responded that other changes would be made, but that he was not able to elaborate because he was only involved in air permit application. Mr. Moyer described the water intake as an 'environmental travesty' based upon his almost 30 years with the Department's wetlands and subaqueous lands section. He described the water intake as having caused the death of millions of fish eggs, juvenile and adult fish and macroinvertebrates since the Facility began operating in 1959. He characterized an 'ecological disaster' from the antiquated and malfunctioning water intake screens. He incorporated his

statement at the 2008 Department hearing on the application to dredge the cooling water channel, which included his citation to several studies.

Mr. Moyer also cited the Department's June 8, 2011 draft NPDES permit that would require a 90% reduction in Delaware River usage for cooling water by implementing a closed loop system using cooling tower technology or its equivalent in order to satisfy the federal requirement for water discharges that will use the best technology (BTA) available when issuing a NPDES permit. This would allow the water usage to be 45 million gpd. Mr. Moyer also cited the analysis the sought to improve the intake's fish screening to reduce fish mortality by 90%. Mr. Moyer also cited the Department's Order No. 2009-W-0042 on the dredging application for the cooling water channel in which the Division of Water was directed to publish the public notice of the draft NPDES permit as soon as practicable. His written statement was marked as Moyer Ex. 1.

Amy Roe spoke next and asked about the lack of responses to the requests in her October 2012 letter. She also asked that no permit be issued without an air quality monitoring program. She expressed concern with the additional emissions in an area already identified as having a higher than normal health risks. She requested chronic violator status for the Applicant based upon numerous violations. She also questioned the lack of any Coastal Zone Act permit or the Department's lack of applying the CZA indicators. She submitted a written statement identified as Sierra Club Ex. 1.

The next person to speak was Al Denio, the Sierra Club's pollution chair, who asked about the age of the cooling tower and was told by Mr. Rangan that it was built in 1993. Mr. Denio expressed concerned with the age of the equipment and asked about how the Applicant would get further reductions in its water withdrawals and reduce the fish mortality.

Richard Schneider spoke as a representative of the Coalition to Protect Fisheries. His comments cited several studies on the harm caused by an open loop cooling system such as used by the Applicant and the need to install a closed loop system. He provided comments on the support from Delaware legislators for requiring closed loop systems. He provided a written statement that was identified as Schneider Ex 1.

Harry Gravelle spoke as President of the Building and Construction Trade Council of Delaware and his comments supported the application based upon his 30 years of experience in dealing with the Applicant and the prior owners of the Facility. He considers the Applicant to be the best owner and views the cooling tower restart as a good started to reducing water usage. His written comments were identified as Gravelle Ex. 1.

Bernie August spoke as a representative of an anti-nuclear organization in Delaware and his comments indicated that the Facility should not be operating and opposed any continuation of once through cooling systems at the Facility or anywhere.

Stephanie Herron spoke and opposed the application because it would add more pollution and she indicated that a study was underway on the health impacts on the local population and requested no action until the study was completed.

Herb Netsch provided comments that indicated his opinion that the Applicant is the best owner of the Facility based upon his work at the Facility over 30 years.

The public comment record closed and DAQ prepared a memorandum that is attached hereto that recommends the Secretary approve DAQ's issuance of the draft permit included with the memorandum.

III. DISCUSSION OF FINDINGS AND REASONS

I recommend that the Department issue Applicant the permit as prepared by DAQ's experts based upon the reason that the restart of the cooling tower will improve the environment

by substantially reducing the water withdrawn from the Delaware River. The public comments that opposed the application also sought to reduce water withdrawals and the continued use of the open loop or once through cooling system. I find that the restart will provide substantial reductions in the Facility's water withdrawals and represents the fastest way to achieve any reduced withdrawals because the cooling tower can be restarted faster than building a new cooling tower, which would entail much more regulatory review and approval than the restart of an existing cooling tower. The record does not indicate why the former owner closed the use of the cooling tower in early 2001, but since it was tied to the use of the Ether Plant a decision was made to also close the cooling tower and not attempt to use the cooling tower to reduce water withdrawals for the Facility's other operations.

The main issue raised by the public comments relates to the lack of any Department action to renew the NPDES permit. I find that the comments requesting action on the NPDES permit are not relevant to the Department's decision to issue an air pollution control permit. The cooling tower was installed to comply with the water quality laws and regulations, the pending NPDES permit application before the Department does not impact on the Department's decision to issue an air permit for the cooling tower's air emissions. It is uncontested that the cooling tower's restart will improve the water quality of the Delaware River by reducing the amount of water that is needed to be withdrawn for use as cooling water. What is not known in this record is whether the cooling tower restart will be consistent with the Department's NPDES permit decision, which will entail a determination of the Best Technology Available (BTA) as that term is used in NPDES permit regulation under the federal Clean Water Act. Nevertheless, the lack of such a determination does not provide any reason to deny the pending permit application that will improve the water quality and otherwise meet the applicable air quality requirements. In sum, the restart of the cooling tower will achieve a reduction in the water withdrawn for use in

the Facility, which means that public comments' purpose will be partly achieved, and the air emissions will be within the allowed regulatory limits as the result of offsets that Applicant has obtained.

While the cooling tower's operation will release air pollutants, and these emissions alone do not justify denial. DAQ's experts have indicated that the air emissions are allowed under Department Regulation 1102 of the *Delaware Regulations Governing the Control of Air Pollution* (Air Regulation). 7 *Del. Admin. Code* 1102. DAQ recommends issuance of the permit that its experts prepared based upon the technical response memorandum attached hereto. I have considered all the public comments timely submitted. I agree with DAQ's analysis and its draft permit. I find that DAQ's response to the technical comments provide support for the draft permits and adopt the response set forth in Attachment A to the DAQ TRM attached hereto.

IV. CONCLUSION

I find and conclude that the record supports approval of DAQ to issue Applicant the permit as drafter in order to allow the restart of the cooling tower. A draft order is attached hereto.



Robert P. Haynes, Esquire
Senior Hearing Officer

MEMORANDUM



TO: Robert Haynes,
Hearing Officer

THROUGH: Ali Mirzakhali, P.E. *Am 4.9.13*
Division Director

Paul Foster, P.E. *PF*
Program Manager

FROM: Ravi Rangan, P.E. *RR*

SUBJECT: **Response Document Developed by the Division of Air Quality (DAQ) for the Public Hearing Held on December 19, 2012 for The Delaware City Refining Company (DCRC) to Restart the Ether Plant Cooling Tower at the Delaware City Refinery.**

DATE: January 3, 2013

A public hearing was held on December 19, 2012 to receive comment on The Delaware City Refining Company's (DCRC's) application to restart the Ether Plant Cooling Tower at the Delaware City Refinery.

DCRC submitted an application on September 12, 2012 to restart the Ether Plant Cooling Tower which has been out of service since early 2002. The Ether Plant's Cooling Tower will have a recirculation rate of 30,000 gallons per minute and will operate as permitted in the past. Recommissioning this Cooling Tower will enable DCRC to reduce the annual Delaware River surface water intake from 452 million gallons per day to 303 million gallons per day based on a 12-month rolling average, by December 31, 2013. The application indicates recommissioning the Ether Plant's Cooling Tower will result in increased emissions of VOCs by 5.5 TPY and fine Particulate Matter by 1.7 TPY. In response to requests for a public hearing from the Delaware Audubon Society, the Delaware Riverkeeper Network, the Delaware Chapter of the Sierra Club, Mr. Bill Moyer and a common form letter from numerous individuals, the Department scheduled and held a hearing on this application on December 19, 2012.

Appendix "A" of this memorandum provides DAQ's responses to comments made by concerned citizens at the above referenced hearing. Appendix "B" is a proposed draft permit for the Secretary's consideration. I hope this information will assist you in reviewing the issues and making your recommendation to the Secretary. Your patience in awaiting receipt of these responses is appreciated. If you have any questions, please call me at (302) 323-4542.

MEMORANDUM

Delaware City Refining Company

Response Document Developed by the Division of Air Quality (DAQ) for the Public Hearing Held on December 19, 2012 for The Delaware City Refining Company (DCRC) to Restart the Ether Plant Cooling Tower at the Delaware City Refinery

January 3, 2013

Page 2

Appendix "A"

There were 15 attendees from the public at this hearing, including representatives from the Delaware Audubon Society and Delaware Chapter of the Sierra Club. Ten speakers submitted written and/or oral comments. A common feature to all commenters' comments centered on the inappropriateness of proceeding with this air permitting action until the facility's NPDES permit is issued. Commenters also suggested that a closed loop cooling system be implemented for 90 % of the refinery's cooling water requirements and to thereby reduce fish mortality rates attributable to entrainment in the cooling water intake structure. The proposed project will result in a reduction of the refinery's water intake which should reduce the impact of fish entrainment. However, DAQ does not find either of these issues to be directly relevant to the air permitting action for restarting the Ether Plant's Cooling Tower. DAQ understands that the Department's Division of Water Quality is presently in the process of finalizing the NPDES permit at which point public participation will be solicited to address all water related environmental issues. Therefore, in the remaining portion of this memorandum, DAQ will restrict its analysis and responses to those comments as they pertain to the air program.

The DE chapter of the Sierra Club raised several comments in an e-mail letter dated October 11, 2012. Given below in each instance is the specific comment restated followed by DAQ's response as it relates to the air program.

Sierra Club Comment # 1: The emissions calculations are based on the assumption of a recirculation rate of 30,000 gallons per minute and cooling tower drift of 0.0005%. However, there are problems with the assumptions being used to estimate emissions from the cooling tower. The applicant neither provides evidence of the amount of pollutants in Delaware River water that it would intake for the continuous loop cooling system to warrant these estimated levels of VOCs, PM10 or PM2.5, nor to continue to do so for the continuation of the applicant's Title V permit amendment. Instead, total dissolved solids in Delaware River water are assumed, and extrapolated to VOC, PM10 and PM2.5 emissions (Appendix C). Additional justification for these estimates is needed and should be disclosed to the public during a public hearing process. This should include specific details about the sources of water entering the cooling tower, and data about where the VOCs and particulates are coming from.

DAQ Response: The Sierra Club has correctly identified the assumptions that have been used in estimating potential cooling tower emissions. The original design

MEMORANDUM

Delaware City Refining Company

Response Document Developed by the Division of Air Quality (DAQ) for the Public Hearing Held on December 19, 2012 for The Delaware City Refining Company (DCRC) to Restart the Ether Plant Cooling Tower at the Delaware City Refinery

January 3, 2013

Page 3

specification for this cooling tower is 25,000 GPM. Emissions are a function of the actual throughput of cooling water and thus the maximum emissions vary directly as the actual throughput. Since DCRC's application conservatively uses a higher recirculation rate of 30,000 GPM, the calculated Potential To Emit (PTE) figure is conservatively biased higher. With regard to the second assumption of the drift loss of 0.0005 %, DAQ finds this assumption to be consistent as a BACT level determination for a cooling tower.

Furthermore, DAQ finds the assumptions used for estimating particulate emissions based on DE River water total dissolved solids (TDS) and total suspended solids (TSS) to be representative of actual river water quality. DAQ reviewed DRBC's Boat Run data providing monthly river water analysis obtained at Station Mile 60.6 abreast of Pea Patch island from March 27, 2000 to June 25, 2012 for TSS and from June 27, 2002 to June 25, 2012 for TDS. The average TSS and TDS concentrations during the respective sampling periods were 59 ppm TSS and 2.7 ppt TDS yielding an average total solids concentration of 2759 ppm. In contrast, DCRC's application used a conservatively higher estimate of 5100 ppm. Finally, DAQ disagrees with Sierra Club's contention that the assumption for total solids was used to determine VOC emissions. Rather VOC emissions are based on the AP-42 emissions factor of 0.7 lb/gallon for controlled cooling towers.

Sierra Club Comment # 2: The applicant admits that "For this project, estimates of changes in direct PM2.5 emissions are conservatively assumed equal to changes in PM10 emissions" (p. 8). Yet the applicant does not provide any evidence of the validity of this assumption that PM10 and PM2.5 emissions will be equal. We therefore assert that the applicant has not provided an adequate estimate of PM2.5 emissions from the project, rendering this application incomplete. To clarify this assumption, we request a standard deviation of particulates suspended in Delaware River and cooling water.

DAQ Response: Particulate emissions from a cooling tower are predominantly particulate matter formed when the cooling water evaporates and leaves behind solids as residue. Particulate matter thus formed typically has an aerodynamic diameter less than 1 micron. Furthermore, because the ratio of TDS to TSS is 50:1, the fraction of particulate matter formed from TDS can be expected to be at least 50 times the particulate matter contributed by the TSS. Therefore, DAQ finds it reasonable to consider direct PM2.5 emissions to be conservatively assumed equal to PM10 emissions because the magnitude of actual PM10 emissions can be expected to be much lower than PM2.5 emissions. Additionally, the ratio of TDS:TSS being 50:1, DAQ does not find

MEMORANDUM

Delaware City Refining Company

Response Document Developed by the Division of Air Quality (DAQ) for the Public Hearing Held on December 19, 2012 for The Delaware City Refining Company (DCRC) to Restart the Ether Plant Cooling Tower at the Delaware City Refinery

January 3, 2013

Page 4

it meaningful to analyze the TSS particle size distribution and consequently the standard deviation of that distribution.

Sierra Club Comment # 3: The refinery is located in an area of severe nonattainment for ozone and PM_{2.5} emissions. The introductions of new emissions that are known to impact public health and to compromise lung function are of concern, particularly for of new sources for VOC and PM_{2.5} emissions, especially in proximity to the Delaware City community that has already documented alarmingly high levels of VOCs and PM_{2.5} in residential neighborhoods in March 2012.

DAQ Response: The Sierra Club has correctly stated that the refinery is located in an area of severe nonattainment for ozone emissions. DCRC's restart of the ether plant cooling tower could result in potential VOC emissions increases of 5.5 TPY. This emissions increase together with the contemporaneous 22 TPY increases from other projects over the contemporaneous 5-year look back period triggers New Source Review provisions for the cooling tower. To this end, DCRC has proposed implementing the stringent monitoring requirements found in the Maximum achievable Control Technology (MACT) Standards in 40 CFR Part 63 as being representative of the Lowest Achievable Emission Rate from cooling towers. DCRC has also provided the requisite offsets at 1.3:1 to offset the 5.5 TPY increase attributable to the project.

With regard to the Sierra Club's comment on the refinery being located in an area of PM_{2.5} non-attainment, DAQ notes that the PM_{2.5} emissions increase of 1.7 TPY does not trigger review under non-attainment NSR.

Sierra Club Comment # 4: Page 3 of the application describes that "the cooling tower will operate as permitted in the past." However, a description of this is not provided in the application document. The permit application therefore provides an incomplete picture of the operation of the cooling tower.

DAQ Response: The application does in fact provide a detailed pdf copy of the piping and instrumentation diagram (P&ID) showing the affected cooling tower (43-UM-901A/B/C) and the associated flow domains. The evaporation and drift losses are shown coming off the top of the tower. A more simplistic version of a cooling tower depicting its operation is appended below.

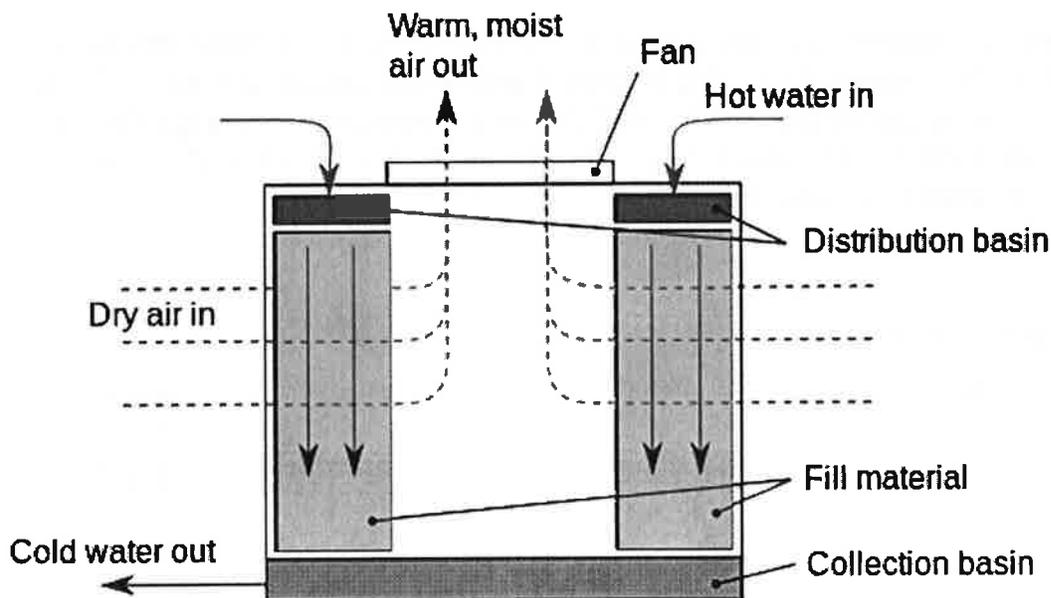
MEMORANDUM

Delaware City Refining Company

Response Document Developed by the Division of Air Quality (DAQ) for the Public Hearing Held on December 19, 2012 for The Delaware City Refining Company (DCRC) to Restart the Ether Plant Cooling Tower at the Delaware City Refinery

January 3, 2013

Page 5



Sierra club Comment # 5: Offsets: The applicant is claiming offsets for this project based on previous emission reductions.

- In their assessment of contemporaneous projects that have reduced PM2.5 emissions, the applicant refers the reader to "Attachment E for a letter to DNREC describing contemporaneous direct PM2.5 (as H2SO4) emissions reductions as a result of the CCU Fuel Conversion Project" (p. 9). This letter describes emissions reductions from fuel switching for a project that was completed in 2011.

- For VOC emissions, the applicant would like to utilize offsets from the previous installation of wastewater system controls equaling 34.7 tons per year (p. 11). We challenge the use of emissions reductions from past projects that are unrelated to this application as eligible for offsets in this project, and would appreciate the opportunity to discuss this issue openly in a public hearing.

Furthermore, because of the numerous assumptions that are made for the estimations of VOCs, PM10 and PM2.5, the offsets claimed in this permit application may not even be adequate to meet the offset requirements.

DAQ Response: A source is required to provide offsets for emissions increases as one of the requirements as a result of triggering Non-attainment New Source Review (NANSR) by a major new source or a major modification to an existing source. DCRC's restarting the ether plant cooling tower has not triggered NANSR for PM2.5 emissions and thus no offsets are necessary.

MEMORANDUM

Delaware City Refining Company

Response Document Developed by the Division of Air Quality (DAQ) for the Public Hearing Held on December 19, 2012 for The Delaware City Refining Company (DCRC) to Restart the Ether Plant Cooling Tower at the Delaware City Refinery

January 3, 2013

Page 6

For the 5.5 TPY VOC emissions increases, DCRC has provided the requisite offsets of 7.00 TPY (at 1.3:1) as required by 7 **DE Admin. Code 1125** section 2.4.3.1.3. These 7.00 TPY credits were part of the 27 TPY VOC Emission Reduction Credits granted by the Delaware Economic Development Office to DCRC on March 28, 2013. DAQ finds DCRC's offset proposal to be acceptable.

PEF:CRR:slb

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pc: Dover Title V File

APPENDIX "B"
Draft Permit

DATE

Permit: APC-91/0553-OPERATION (Amendment 1)(LAER)

Ether Plant Cooling Tower Restart Project

Delaware City Refining Company
4550 Wrangle Hill Road
Delaware City, Delaware 19706

ATTENTION: Herman Seedorf

Dear Mr. Seedorf:

Pursuant to 7 DE Admin. Code 1102, Section 2, approval of the Department of Natural Resources and Environmental Control (the Department) is hereby granted to recommission and restart the 30,000 GPM GEA Thermal Dynamic, Model: TD-3636-3-3040 CXSF 3-Cell Cooling Tower located at the Ether Plant (Unit 43) at the Delaware City Refinery in Delaware City, Delaware, in accordance with the following documents:

- Application package submitted by the Company dated September 17, 2010, with Form Nos. AQM-1, AQM-2, AQM-3.1, and AQM-5 for signed by Herman Seedorf.
- Letter dated March 28, 2013 from Alan Levin, Secretary Delaware Economic Development Office to Heather Chelpaty, Vice President, Health, Safety and Environment.
- Secretary's Order No. 2012-A-XXXX, dated

This permit is issued subject to the following conditions:

1. General Provisions:

- 1.1 Representatives of the Department may, at any reasonable time, inspect this facility.
- 1.2 This permit may not be transferred to another person, owner, or operator unless the transfer has been approved in advance by the Department. A request for a permit transfer shall be received by the Department at least 30 days before the date of the requested permit transfer. This request shall include:
 - 1.2.1 Signed letters from each person stating the permit transfer is agreeable to each person; and
 - 1.2.2 An Applicant Background Information Questionnaire pursuant to 7 Del. C., Chapter 79 if the person receiving the permit has not been issued any permits by the Department in the previous 5 years.Approval (or disapproval) of the permit transfer will be provided by the Department in writing.
- 1.3 The owner or operator shall not initiate construction, install, or alter any equipment or facility or air contaminant control device which will emit or prevent the emission of an air contaminant prior to submitting an application to the Department pursuant to 7 DE Admin. Code 1102, and, when applicable 1125, and receiving approval of such application from the Department; except as authorized by this permit or exempted in the Regulations.

Permit: APC-91/0553-OPERATION (Amendment 1)(LAER)

Ether Plant Cooling Tower Restart Project

Date

1.4 The owner or operator shall submit a complete supplement to the Title V permit application pursuant to 7 DE Admin. Code 1130, Section 5(b) within 12 months of the date of issuance of this permit. The application shall address all applicable requirements including those of 40 CFR Part 64 (Compliance Assurance Monitoring) if applicable.

2. Emission Limitations:

2.1 Air contaminant emission levels from the Ether Plant Cooling Tower shall not exceed the following and those specified by 7 DE Admin. Code 1100, et. seq. and the following¹:

2.1.1 PM10/PM2.5 emissions shall not exceed 0.2 grains/dry standard cubic foot and 1.7 TPY.

2.1.2 VOC emissions shall not exceed 5.5 TPY.

2.2 The Company shall not cause or allow the emission of visible air contaminants and/or smoke from a stationary source, the shade or appearance of which is greater than 20% opacity for an aggregate of more than 3 minutes in any 1 hour or more than 15 minutes in any 24 hour period.

2.3 Odors from this source shall not be detectable beyond the plant property line in sufficient quantities such as to cause a condition of air pollution.

3. Operational Limitations:

3.1 The Company shall comply with the MACT Heat Exchanger Leak Detection Requirements in 40 CFR 63.654.

3.2

3.2.1 At all times, including periods of startup, shutdown, and malfunction, the Company shall, to the extent practicable, maintain and operate the facility including all associated air pollution control equipment in a manner consistent with good air pollution control practices for minimizing emissions.

3.2.2 All structural and mechanical components shall be maintained in proper operating condition.

4. Compliance Methodology, Testing and Monitoring Requirements:

4.1 Compliance with Condition 2.1.1 shall be based on the proper operation of the high-efficiency mist eliminators having a vendor guaranteed emission factor of 0.0005 % drift loss per pound of cooling water circulated and on the monitoring requirements in Condition 4.3.1.

4.2 Compliance with Conditions 2.1.2 and 3.1 shall be based on the monitoring and testing requirements in Condition 4.3.2.

4.3 Monitoring/Testing Requirements:

4.3.1 The Owner/Operator shall conduct a quarterly test of total solids using Method 2540B of Standard Methods for the Examination of Water and Wastewater.

4.3.2 The VOC concentration in the cooling water shall be obtained in accordance with the procedures in 40 CFR 63.654 (c)(1) using a method approved by the Department. To determine the cooling water VOC concentration, samples shall be taken at the entrance

¹ "Tons per year, TPY" shall mean total emissions on a rolling 12-month basis.

Permit: APC-91/0553-OPERATION (Amendment 1)(LAER)

Ether Plant Cooling Tower Restart Project

Date

and exit of the cooling tower and at the point of makeup water addition. The entrance is the point at which cooling water leaves the cooling tower prior to being returned to the process equipment. The exit is the point at which the cooling water is introduced to the cooling tower after being used to cool the process fluid. A minimum of three sets of samples shall be taken at the entrance and exit and the point of make-up water entry. The average concentrations shall then be calculated for each set of samples.

4.4 Compliance with Condition 2.2 shall be based on compliance with the facility-wide requirements specified in Condition 3, Table 1, e.3.iii of Permit: AQM-003/00016 – Part 3 (Renewal 1)(Revision 5) dated April 5, 2011.

4.5 Compliance with Condition No. 3.1 shall be based on information available to the Department concerning the Company's actions with respect to such events, and shall include the Department's review of all available facts and circumstances including, but not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

5. Record Keeping Requirements:

5.1 The owner or operator shall maintain all records necessary for determining compliance with this permit in a readily accessible location for 5 years and shall make these records available to the Department upon written or verbal request.

5.2 The following information shall be recorded:

5.2.1 Results of quarterly test of total solids using Method 2540B

5.2.2 Results of cooling water VOC concentration

5.2.3 Cooling water average recirculation rate in gallons per minute.

6. Reporting Requirements:

6.1 Emissions in excess of any permit condition or emissions which create a condition of air pollution shall be reported to the Department immediately upon discovery and after activating the appropriate site emergency plan, in the following manner:

6.1.1 By calling the Department's Environmental Emergency Notification and Complaint number (800) 662-8802, if the emission poses an imminent and substantial danger to public health, safety or to the environment.

6.1.2 Other emissions in excess of any permit condition or emissions which create a condition of air pollution may be called in to the Environmental Emergency and Complaint number (800) 662-8802 or faxed to (302) 739-2466. The ability to fax in notifications may be revoked upon written notice to the Company by the Department in its sole discretion.

6.2 In addition to complying with Condition 6.1 of this permit, the Owner/Operator shall satisfy any reporting required by the "Reporting of a Discharge of a Pollutant or an Air Contaminant" regulation, within 30 days of becoming aware of an occurrence subject to reporting pursuant to these conditions. All reports submitted to the Department shall be submitted in writing and shall include the following information:

6.2.1 The name and location of the facility;

Permit: APC-91/0553-OPERATION (Amendment 1)(LAER)

Ether Plant Cooling Tower Restart Project

Date

- 6.2.2 The subject source(s) that caused the excess emissions;
 - 6.2.3 The time and date of the first observation of the excess emissions;
 - 6.2.4 The cause and expected duration of the excess emissions;
 - 6.2.5 For sources subject to numerical emission limitations, the estimated rate of emissions (expressed in the units of the applicable emission limitation) and the operating data and calculations used in determining the magnitude of the excess emissions;
 - 6.2.6 The proposed corrective actions and schedule to correct the conditions causing the excess emissions.
 - 6.2.7 Emissions on the same day from the same emission unit may be combined into one report. Emissions from the same cause that occur contemporaneously may also be combined into one report.
 - 6.2.8 The Company shall submit an electronic copy of all required reports to the Department's compliance engineer assigned to the Refinery.
- 6.3 One (1) original and 1 copy of all required reports shall be sent to the address below:
Division of Air Quality
Blue Hen Corporate Center
655 S. Bay Road, Suite 5 N
Dover, DE 19901

7. Administrative Conditions:

- 7.1 This permit shall be made available on the premises.
- 7.2 Failure to comply with the provisions of this permit may be grounds for suspension or revocation.

Sincerely,

Paul E. Foster, P.E.
Program Manager
Engineering & Compliance Branch

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pc: Dover Title V File
Dawn Minor