BEFORE THE GOVERNING BOARD
OF THE
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

In the Matter of ConocoPhillips Company Los Angeles Refinery Ultra Low-Sulfur Diesel Project	))))	**Response To Executive Officer's Answer And Opposition To Petitioner For Hearing**

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Apprentices of the Plumbing and
Pipefitting Industry of the United
States and Canada, Local 250

1550-236b

On August 15, 2005, Carlos Valdez, Salvador A. Guerrero, Salvador P. Guerrero, Jose Guerrero, Jason Guerrero, residents of Wilmington, the Southern California Pipe Trades District Council 16, and the United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry of the United States and Canada, Local 250 ("Petitioners") respectfully requested that the District Governing Board hold a public hearing on the application for permit(s) to construct and permit(s) to operate the 401-B replacement heater and the Selective Catalytic Reduction ("SCR") unit as proposed to modify the ConocoPhillips Los Angeles Refinery Ultra Low-Sulfur Diesel Project (State Clearinghouse No. 20040011095) in the District's June 2005 Subsequent Negative Declaration ("SND") based on the failure to comply with the California Environmental Quality Act ("CEQA") (Public Resources Code section 21000, et seq.).

On September 2, 2005, the South Coast Air Quality Management District ("SCAQMD" or "District") submitted "Executive Officer's Answer and Opposition to Petitioner For Hearing" ("District's Answer"). Below, we respond to erroneous claims made by the District.

I. SECONDARY PM10 AND PM2.5

The District claims that because the SCR will have an ammonia slip of no more than 5 parts per million (ppm), the ammonia emission rate will not result in significant PM10 emission. As Dr. Phyllis Fox, Ph.D., P.E. explains in the attached comments, this is incorrect for two reasons. 4-1

First, the regulatory framework for PM10 and PM2.5 has changed. The District relied on a 1989 EIR to conclude that ammonia limits of less than 10 ppm are less than significant. Reliance on the 1989 EIR is erroneous. Since 1989, the levels of PM10 that are known to cause significant health impacts have been lowered, and fine particulate matter, PM2.5, has been designated by the U.S. EPA as a separate and distinguishable pollutant. The SND and the 1989 EIR that the District relied on did not even considered PM2.5, which poses even greater health risks than PM10. (*See* Fox Supplemental Comments, pp. 2-4, Attached as Exhibit A). 4-1 cont.

Second, the District relies on an ammonia slip standard of 10 ppm from a 1989 EIR as a threshold of significance to conclude that a 5-ppm ammonia slip limit on the SCR unit for the B-401 heater is not significant. (District Answer, p. 6, 8). The District is using an outdated standard. As Dr. Fox explains in her Supplemental Comments, a 10-ppm ammonia slip threshold, and a 5-ppm ammonia slip limitation for this Project do not qualify as BACT for the SCR unit, and do not support the conclusion that ammonia limits of less than 10 ppm are automatically less than significant. (*See* Fox Supplemental Comments, pp. 4, 5). BACT for SCR ammonia slip is 2 ppm or lower. Dr. Fox points out that ammonia slip of 2 ppm or less has been achieved in practice and is routinely required in many other states, including Wisconsin, Massachusetts and Texas. The District failed to evaluate PM10 emissions for an ammonia slip lower than 5 ppm and it failed to evaluate PM2.5 emissions at all. Thus, there is a fair argument that Secondary PM emission 4-2

from the SCR Unit is a potentially significant environmental impact. Thus, an EIR must be prepared to analyze this impact.

Even if the District concludes that the SCR meets BACT, or that the Project's ammonia emissions are insignificant because they fall below the 10-ppm threshold, the District must still consider the environmental impacts of Secondary PM emissions. The South Coast Air Basin is in severe nonattainment for PM10 and PM2.5. Thus, the emission of even minor amounts of precursor PM emissions must be considered significant in light of the serious nature of the PM10 and PM2.5 problems in the South Coast Air Basin. (*Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal. App. 3d 692, 718 (concluding that "any additional amount of precursor emissions should be considered significant in light of the serious nature of ozone problems," even where the plant "would emit relatively minor amounts of precursors.")). Thus an EIR must be prepared to evaluate the secondary PM10 and PM2.5 emissions from the SCR Unit. 4-2 cont.

II. HEALTH AND SAFETY RISK OF ANHYDROUS AMMONIA

The SCR Project will increase the transport to and storage of aqueous and anhydrous ammonia. The SCR Project will require the storage and back-up use of two new 150-pound cylinders of anhydrous ammonia at the Wilmington facility. In concluding that the use and storage of anhydrous ammonia presents no environmental impacts worthy of CEQA review, the District's lawyer concluded that "Refinery workers are trained on refinery hazards and have access to personal protective equipment," and that "any exposure [to anhydrous ammonia] would be short term." 4-3

(Answer, p. 10). These statements by the District's lawyer do not resolve the significant health and safety risks associated with lethal anhydrous ammonia.

As Dr. Fox concludes in her Supplemental Comments, the SND fails to adequately address the threat to worker health and safety from a potential accident involving ammonia. (See Fox Supplemental Comments, p. 6). Dr. Fox concludes that anhydrous ammonia presents a significant risk to workers and nearby residents since it can form deadly vapor clouds within a few seconds, and far too quickly for workers to obtain and put on safety equipment. The SND is completely silent about worker health and safety precautions and equipment. Statements made by the District's lawyer in the District's Answer on the subject are entitled to no weight since he has no expertise in this area. Thus, there is a fair argument that a potential accident involving the storage, transportation, or handling of ammonia poses potentially significant impacts that must be evaluated in an EIR. 4-3 cont.

The District argues that due to a small increase in truck trips delivering aqueous ammonia and anhydrous ammonia, there can be no significant impact associated with the transport of ammonia. (District Answer, p. 11). This is erroneous. The SND does not sufficiently analyze the number of truck trips required to transport anhydrous ammonia, because it failed to provide any projection concerning how often anhydrous ammonia may have to be used as a back-up. Dr. Fox explains that difficulties with aqueous ammonia are common, requiring the use of a back-up catalyst to keep the SCR Project running. Thus, the number of truck trips required to transport anhydrous 4-4

ammonia remains unclear and unanalyzed by the SND. (Fox Supplemental Comments, p. 6). Statements made by the District's lawyer in the District's Answer on the subject are entitled to no weight since he has no expertise in this area. Dr. Fox concludes that even if there is only one trip delivering anhydrous ammonia every 10 years, an accident during that single trip could result in a significant impact. (*Id.*). Thus, there is a fair argument that there are potentially significant impacts associated with the transportation of ammonia must be evaluated in an EIR.

4-4 cont.

III. CONCLUSION

For the reasons set forth above, as well as the reasons set forth in our August 15, 2005 Petition, we respectfully request that the Governing Board appoint a hearing officer pursuant to Rule 1215(a) to hold a hearing to determine whether the District conducted proper CEQA review for the SCR Project.

Dated: September 9, 2005

Respectfully submitted,

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Proof of Service

I am employed in the County of San Mateo, California. I am over the age of 18 and not a party to this action. My business address is 601 Gateway Blvd., Suite 1000, South San Francisco, California, 94080.

On September 9, 2005, I served the foregoing document described as

RESPONSE TO EXECUTIVE OFFICER'S ANSWER AND OPPOSITION TO PETITIONER FOR HEARING

on the parties listed below by placing a true and correct copy thereof in a sealed envelope and by causing the envelope to be sent, by US MAIL addressed to:

Frances Keeler
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Jocelyn Thompson
Counsel for ConocoPhillips Company
Weston Benshoof et al LLP
333 S Hope St 16FL
Los Angeles, CA 90071

I declare under penalty of perjury of the laws of the California that the foregoing is true and correct and that this was executed on August 9, 2005 in Santa Mateo, California.

Lionel Brazil

Exhibit A

Supplemental Comments

on

Subsequent
Negative Declaration

CONOCOPHILLIPS
LOS ANGELES REFINERY
ULTRA LOW SULFUR DIESEL PROJECT

Prepared by

J. Phyllis Fox, Ph.D., P.E.
Consulting Engineer
Berkeley, CA

In Response to Executive Officer's
Answer And Opposition to Petitioner For Hearing

September 7, 2005

COMMENTS

I have reviewed the Subsequent Negative Declaration ("SND") for the ConocoPhillips Los Angeles Refinery Ultra Low Sulfur Diesel Project ("ULSD Project" or "Project") issued by the South Coast Air Quality Management District ("SCAQMD" or "District") on June 21, 2005 and relevant supporting documentation. After reviewing the SND and other relevant information, I concluded that the ULSD Project may have adverse environmental impacts that must be analyzed in an environmental impact report ("EIR").

I prepared Comments on July 18, 2005, and Supplemental Comments on August 9, 2005 to provide my expert opinion that there is a fair argument that the modification to the ULSD Project described in the SND may have additional significant adverse environmental impacts that must be analyzed in an EIR.

On September 2, 2005, SCAQMD submitted Executive Officer's Answer And Opposition to Petition For Rehearing ("SCAQMD Answer"). I prepare these subsequent comments to respond to claims made by District Counsel that are erroneous.

I. SECONDARY PM10 AND PM2.5

The District selected selective catalytic reduction ("SCR") as best available control technology ("BACT") for nitrogen oxides ("NO_x"). The SCR results in the formation of particulate matter from two sources -- the ammonia slip (5 ppm) and oxidation of SO_2 by the SCR catalyst. In a recent rulemaking, the United States Environmental Protection Agency established that ammonia is a PM-2.5 precursor. (67 Fed. Reg. 39602, Consolidated Emissions Reporting, June 10, 2002 (Attached as Exhibit 1)). The District did not consider secondary PM_{10} or $PM_{2.5}$ formation and its resulting air quality, visibility, and public health impacts.

In response, the District explained that it "no longer evaluates secondary particulate emissions from SCR units in its CEQA documents as this has ceased to be a potentially significant adverse air quality impact with the standard imposition of ammonia limits less than 10 ppm." (SCAQMD Answer, p.8). The District then concluded that because it will impose a 5 ppm ammonia limit on the SCR unit, there is no need to review the environmental impacts due to ammonia slip and secondary PM10 formation. This Conclusion is incorrect for two reasons.

A. Regulatory Framework For PM10 And PM2.5 Has Changed

First, the SCAQMD relies on an outdated 1989 Environmental Impact Report ("EIR") to conclude that ammonia limits less than 10 ppm would not result in an adverse impact on air quality. The regulatory framework with respect to particulate matter has changed since the 1989 EIR. The levels of PM10 that are known to cause significant health impacts have been lowered. Further, fine particulate matter, PM2.5, has been designated by the U.S. EPA as a separate and distinguishable pollutant. The SND and the 1989 EIR that the District relied on did not even considered PM2.5, which poses even greater health risks than PM10.

Two types of particulate matter are now regulated, that with an aerodynamic diameter of less than 2.5 microns ("PM2.5") and that with an aerodynamic diameter of less than 10 microns ("PM10").[1] These small particles easily penetrate into the airways and lungs where they may produce harmful health effects such as the worsening of heart and lung diseases. Thus, the U.S. EPA and CARB have both promulgated ambient air quality standards on PM10 and PM2.5 to protect public health. The PM2.5 standards and California's revised PM10 standard did not exist at the time that the 1989 EIR was adopted and thus these impacts could not have been evaluated. Thus, the District cannot rely on that document now in lieu of proper CEQA review. As explained below, there is a fair argument that secondary PM10 and PM2.5 emissions from ammonia slip and oxidation of SO_2 to SO_3 would result in significant impacts to air quality, public health, and visibility.

Historically, health impacts due to particulate matter were regulated only through ambient air quality standards on PM10. The area where the project is located currently violates California's ambient air quality standards on PM10 (State PM10 Designations.[2]) and the federal PM10 standards. (National PM10 Designations.[3])

A substantial amount of important new research has been published, documenting new health impacts at much lower concentrations and for different size fractions of particulate matter than was previously known and reflected in ambient air quality standards on larger sizes of particulate matter (PM10). (U.S.

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[1] 10 microns equals about 0.0004 inches or about four one-hundred thousands of an inch (4/100,000).

[2] Emission Inventory Branch, PTSD, 2004 Area Designations for State Ambient Air Quality Standards, PM10, October 2004.

[3] Emission Inventory Branch, PTSD, Area Designations for National Ambient Air Quality Standards, PM10, October 2004.)

EPA 3/01.[4]) This new information led the U.S. EPA and California to adopt ambient air quality standards on PM2.5 and to California lowering its PM10 standard.

This new research documents that the inhalation of particulate matter, particularly the smallest particles, causes a variety of health effects, including premature mortality, aggravation of respiratory (*e.g.*, cough, shortness of breath, wheezing, bronchitis, asthma attacks) and cardiovascular disease, declines in lung function, changes to lung tissues and structure, altered respiratory defense mechanisms, and cancer, among others. Concentrations of PM10 and PM2.5 above current standards may result in harmful health effects.[5]

The U.S. EPA promulgated a national ambient air quality standard for PM2.5 in 1997 (62 FR 38652[6]) of 15 $\mu g/m^3$ annual average and 65 $\mu g/m^3$ 24-hour average. These standards were stayed by the court and not in effect until 2001, long after the 1989 EIR was adopted. The federal PM 2.5 regulation did not become effective until Feb. 27, 2001, when it was upheld by the US Supreme Court. (*Whitman v. American Trucking Assoc.* (Feb. 27, 2001) 531 U.S. 457.) The new standards were based on new research indicating that small particulate matter is more harmful to human health than previously believed. Implementation is underway. In February 2004, California for the first time identified areas that do not currently comply with the new federal PM2.5 standards. These include the area where the project is located.[7] The SCR would emit PM10 and PM2.5 and precursors to PM10 and PM2.5 (i.e., chemical that become PM10 and PM2.5 in the atmosphere) and thus contribute to existing violations of federal ambient air quality standards. This is a significant impact.

The CARB adopted new particulate matter standards in June of 2002, responding to requirements of the Children's Environmental Health Protection Act (Senate Bill 25, Escutia 1999). This Act requires the evaluation of all health-based ambient air quality standards to determine if the standards adequately protect human health, particularly of infants and children.[8] This rulemaking

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[4] U.S. EPA, Air Quality Criteria for Particulate Matter, Second External Review Draft, March 2001.

[5] http://www.arb.ca.gov/research/aaqs/pm/pm.htm

[6] National Ambient Air Quality Standards for Particulate Matter: Final Rule, Federal Register, v. 62, no. 138, July 18, 1997.

[7] http://www.arb.ca.gov/desig/pm25desig/encl1_feb11_04.doc

[8] http://www.arb.ca.gov/research/aaqs/std-rs/pm-final/pm-final.htm#Summary; http://www.arb.ca.gov/research/aaqs/std-rs/std-rs.htm

became effective June 5, 2003.[9] It lowered the California annual PM10 standard from 50 ug/m^3 to 20 ug/m^3 and set a new standard of 12 ug/m^3 on PM2.5, lower than the federal standard of 15 ug/m^3. The new, more stringent standards are based on new research indicating that small particulate matter is more harmful to human health than previously believed. The area where the project is located currently violates these standards. The project would emit PM10 and PM2.5 and their precursors. Thus, the Project would contribute to an existing violation of California's ambient air quality standards on PM10 and PM2.5.

The CARB review (CARB Review 2005) demonstrated that the particulate matter standards in effect when the 1989 EIR was adopted did not protect public health. Thus, any conclusion in the 1989 EIR with respect to ambient air quality impacts of particulate matter are outdated. The SND did not evaluate the new PM10 and PM2.5 standards.

B. Slip Level Of 5 ppm Is Not BACT

Second, the District is correct when it states "SCR technology has progressed." However, it misleadingly states, "ammonia slip can now be limited to five ppm." (Answer, p. 6). This does not represent Best Available Control Technology ("BACT") and even if it did, it would not relieve the District's obligation to evaluate air quality impacts.

SCRs today are routinely designed, guaranteed, and operated at slip levels of 2 ppm or lower. Several states including Wisconsin and Massachusetts now require ammonia slip levels of 2 ppm or less. The Massachusetts Department of Environmental Affairs ("MDEA") has set 2 ppm as the emission limit for ammonia slip, and it aims to reduce this to 0 ppm in the near future.[10] As a standard part of Massachusetts air permits containing SCR approval, the MDEA includes a "Zero Ammonia Technology Memorandum of Understanding" which limits ammonia slip emissions to 2 ppm, and requires compatible zero ammonia air pollution control technology (ZAT) becomes available.[11] Vendors now regularly guarantee ammonia slip emissions limited to 2 pm.[12] Additionally, a 2003 Study conducted at the Paramount Petroleum Corporation in Paramount,

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[9] http://www.arb.ca.gov/research/aaqs/std-rs/std-rs.htm

[10] UAE Lowell Power Expansion Project – Conditional Comprehensive Plan Approval/PSD Permit, Application No. MBR-00-COM-039, available at http://www.mass.gov/dep/energy/mirant/mirant.htm (Attached as Exhibit 2); Mirant Kendall L.L.C. Project – Conditional Major Comprehensive Plan/PSD Permit, Application No. MBR-00-COM-029, available at http://www.mass.gov/dep/energy/mirant/mirant.doc (Attached as Exhibit 3).

[11] Id.

[12] See Morita, I. et. al., "Recent Experience with Hitachi Plate Type SCR Catalyst," presented to the Institute of Clean Air Companies Forum '02, February 12-13, 2002 (Attached as Exhibit 4).

CA, demonstrates that commercially available Zero Ammonia Slip Technology achieves zero ammonia emissions levels with high NOx conversion.[13]

Very low slips have been achieved in practice at a number of facilities. For example, the 248-MW River Road Generating Facility in Vancouver, Washington, has consistently demonstrated ammonia slip levels of 0.01 ppm to 0.2 ppm over a three-year period, corresponding to guaranteed catalyst life. The Crockett Cogeneration Facility in California has consistently achieved ammonia slip levels of less than 1 ppm.[14]

Thus, a 5-ppm ammonia slip limitation does not qualify as BACT for the SCR unit, and does not support the conclusion that ammonia limits of less than 10 ppm are automatically less than significant. BACT for SCR ammonia slip is 2 ppm or lower. The District failed to evaluate PM10 emissions for at a lower slip than 5 ppm and it failed to evaluate PM2.5 emissions at all.

Even if the District concludes that the SCR meets BACT, the District must still consider the environmental impacts of Secondary PM emissions. The South Coast Air Basin is in severe nonattainment for PM10 and PM2.5. Thus, the emission of even minor amounts of precursor PM emissions must be considered significant in light of the serious nature of the PM10 and PM2.5 problems in the South Coast Air Basin. (*Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal. App. 3d 692, 718 (concluding that "any additional amount of precursor emissions should be considered significant in light of the serious nature of ozone problems," even where the plant "would emit relatively minor amounts of precursors.")). Thus an EIR must be prepared to evaluate the secondary PM10 and PM2.5 emissions from the SCR Unit.

II. Health and Safety Risk of Anhydrous Ammonia

The SCR Project will increase the transport to and storage of anhydrous ammonia at the Wilmington facility with two new 150-pound cylinders. In concluding that the use and storage of anhydrous ammonia presents no environmental impacts worthy of CEQA review, the District's lawyer concluded that "Refinery workers are trained on refinery hazards and have access to personal protective equipment," and that "any exposure [to anhydrous

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[13] Hastings, T et. al., "Zero Ammonia Slip Technology for Combined Cycle Gas Turbine Exhaust," Presented at POWER-GEN International 2003, December 9-11, 2003, Las Vegas, NV (Attached as Exhibit 5).

[14] The slip levels addressed above were achieved on boilers and turbines burning gas and coal in power generating facilities. The source and quality of the flue gases are design parameters for an SCR system, which is a post combustion control. The slip levels achieved by SCR systems on boilers and turbines burning gas and coal are consistent with those that are achievable on heaters burning refinery fuel gas.

ammonia] would be short term." (Answer, p. 10). These statements by the District's lawyer do not resolve the significant health and safety risks associated with lethal anhydrous ammonia.

The results of the SND's modeling show that potentially lethal concentrations of ammonia would be present within a few seconds at up to 45 feet from the site of an accident. Levels considered to be significant by the SCAQMD would occur at up to 80 feet from the accident site. SND, p. 2-27.

Refinery workers are frequently within 45 to 80 feet of ammonia storage and handling equipment. While it may be true that "Refinery workers are trained on refinery hazards and have access to personal protective equipment," it is also true that lethal exposure to anhydrous ammonia happens almost instantly. In the event of an anhydrous ammonia leak or spill, refinery workers would not have sufficient time to retrieve and put on protective equipment. Additionally, the SND is completely silent about worker health and safety precautions and equipment.

The District argues that due to a small increase in truck trips delivering aqueous ammonia and anhydrous ammonia, there can be no significant impact associated with the transport of ammonia. This is erroneous. Given how deadly a release of ammonia can be, even if there is only one trip delivering anhydrous ammonia every 10 years, an accident during that single trip could result in a significant impact.

Also, the SND admits that trucks trips may be more frequent if anhydrous ammonia is used as a back-up. However, the document is silent as to any projection concerning how often anhydrous ammonia may have to be used as a back-up. Given potential difficulties that are common with the use of aqueous ammonia, it is quite possible that anhydrous ammonia will have to be used fairly frequently. This would result in much more frequent transportation of anhydrous ammonia as it is used on site as a back-up and must be replenished.

Therefore, I conclude based on the SND's analysis that the transport, storage and use of anhydrous ammonia related to this Project could result in significant worker and public health impacts. Thus, there is a fair argument that there is a potentially significant environmental impact to workers and residents from accidental releases of ammonia along transportation routes and a potentially significant adverse impact to refinery workers from accidental releases that may occur from the use and storage of ammonia at the refinery.

COMMENT LETTER NO. 4
ADAMS, BROADWELL, JOSEPH, & CARDOZO

Marc D. Joseph; Richard Toshiyuki Drury; Kevin S. Golden
September 9, 2005

On September 9, 2005, the South Coast Air Quality Management District (SCAQMD) received additional comments from Marc Joseph, Richard Drury, and Kevin Golden of Adams, Broadwell, Joseph, and Cardozo on behalf of Carlos Valdez, Southern California Pipe Trades District Council 16 and United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry of the United States and Canada, Local 250 (Unions). The comments of September 9, 2005 were received as part of a request for a public hearing under SCAQMD Regulation XII. The Unions had previously submitted comments and supplemental comments on the Draft Subsequent Negative Declaration. The September 9, 2005 comment letter raised many of the same issues that had been raised in comments on the 2004 Negative Declaration, 2004 Addendum and the 2005 Subsequent Negative Declaration, all of which were previously responded to.

However the supplemental comment letter also raised new issues and presented additional materials regarding issues previously addressed. The SCAQMD is not required to prepare written responses to the issues raised in the September 9, 2005 letter because (1) CEQA does not require written responses to comments on a negative declaration; (2) the letter was received nearly two months after the close of the public comment period; and (3) the SCAQMD Governing Board rejected the Union's request for a Regulation XII hearing. However, to provide additional information to new issues raised in the September 9, 2005 comment letter, responses have been prepared

The September 9, 2005 comment letter included additional comments from Dr. Phyllis Fox dated September 7, 2005 (included as Exhibit A) and additional attachments. The issues raised by Dr. Fox are included in the main comment letter submitted by Mr. Golden. The following responses address the issues as raised in the main comment letter and as further discussed by Dr. Fox in the attached Exhibit A and attachments thereto.

4-1 Secondary PM10 and PM2.5

The SCAQMD has developed CEQA significance thresholds for PM10. The significance threshold for PM10 during operation is 150 pounds per day. The PM10 emissions associated with the addition of the SCR to the ULSD project were evaluated and determined to be less than significant. There will be no increase in average firing in the replacement charge heater B-401, compared to the existing charge heater B-201, and so there will be no increase in PM10 emissions from the heater itself (Subsequent Negative Declaration page 2-11). The addition of SCR is expected to result in a maximum of 0.2 pound per day PM10 emissions associated with an increase in delivery trucks (see Subsequent Negative Declaration, Table 2-3). The project emissions of 0.2 pound per

day of PM10 can be compared to the SCAQMD CEQA significance threshold of 150 pounds per day. The PM10 emissions associated with the SCR project are well below the SCAQMD significance threshold and are less than significant.

The unsupported conclusion of the commentator that any emissions of a pollutant in a nonattainment must be considered significant ignores the historic scientific determinations of the U.S. EPA, CARB and the District in establishing regulations to reduce these air contaminants. All of these agencies establish levels at which emissions of nonattainment pollutants would be unlikely to increase ambient concentrations. These are established in the form of the definition of a major source, or the establishment of de minimus emissions levels or rates. For instance a major source in an extreme 1-hour nonattainment area for ozone was defined by the U.S. EPA as a source that emits 10 tons per year of either precursor VOC or NOx. Clean Air Act section 182(e). These particular major source thresholds were the basis for the District's CEQA significance thresholds (10 tons per year is equal to 55 pounds per day).

The U.S. EPA and CARB established ambient air quality standards for PM2.5. Although the regulations that implement the PM2.5 standards are relatively new, the SCAQMD now monitors for PM2.5, and will include specific control measures addressing PM2.5 in the 2007 AQMP. The SCAQMD also is in the process of developing significance thresholds for PM2.5, but has not yet established a PM2.5 significance threshold that has undergone a public process pursuant to CEQA Guidelines §15064.7.

U.S. EPA issued a proposed rule to implement the PM2.5 standard on September 8, 2005[1]. As part of this rule, the U.S. EPA is proposing to define the de minimus level for direct PM2.5 emissions at 10 tons per year, based fundamentally on the same approach EPA has used in the past for particulate matter. The U.S. EPA has determined that contributions from a source that do not increase PM2.5 concentrations by more than 4 percent of the annual standard are not significant. By the U.S. EPA's calculations this 4 percent increase would not occur from annual emissions increases below 10 tons per year (which is equivalent to 55 pounds per day). Considering the reactions of various precursors of PM2.5, EPA prefers a 40 ton per year de minimus level for NOx, SOx, and VOC. An alternate for the precursors would be 10 tons per year, however the U.S. EPA suggests this "would add additional complexity to an already complex program without necessarily providing additional benefits." The U.S. EPA does not and will not regulate ammonia as a precursor, but suggests states may, if necessary.

Emissions of PM2.5 and precursors to PM2.5 would be well below 55 pounds per day. First, no increase in firing rate is expected due to the new heater so no increase in PM2.5 emissions would be expected. Secondly, although the District does not account for the emission decreases in NOx and SOx from the heater because of the RECLAIM program, the replacement of the old heater with a newer, cleaner burning heater, and the addition of SCR unit results in an actual decrease in NOx and SOx, which in turn reduce the potential to form secondary PM2.5 from this equipment, even accounting for the slight

[1]Source: www.epa.gov/pmdesignations/documents/Sep05/PM25_impl_rule_and_Preamb_090805.pdf.

increase of ammonia (1.8 pounds per day). Third, even if the full 1.8 pounds per day of ammonia were considered without considering the decrease in NOx and SOx emissions, this is well below the 55 pound per day significance threshold suggested for all precursors. Finally, the additional truck trips will contribute only 0.2 pounds per day, even if it were assumed that all these emissions were PM2.5. Emissions of PM 2.5 are not considered significant.

4-2 Ammonia Slip

This comment asserts that imposing an ammonia slip limit of five ppm will not avoid significant adverse impacts because five ppm does not meet the definition of BACT. The SCAQMD disagrees with the comment's conclusion regarding BACT because it is based on inappropriate references to equipment that is not comparable to the B-401 heater.

The SCAQMD's current BACT limit for ammonia slip for new, modified, or relocated heaters is five ppm (at three percent oxygen). The SCAQMD will impose a five ppm ammonia permit condition on the SCR unit for the B-401 heater, as discussed on page 2-14 of the Subsequent Negative Declaration, as a means of enforcing the limit. Ammonia slip emissions also will be minimized by using low-NOx burners, discussed in the Subsequent Negative Declaration on pages 2-10 to 2-12. Reducing NOx emissions from the burners reduces the amount of ammonia necessary to meet the applicable NOx control requirement, thus, minimizing the potential formation of secondary particulates, ammonium nitrate, in particular.

Dr. Fox claims and provides attachments claiming to show that ammonia slip of two ppm or less has been achieved in practice and is routinely required in other states, and she suggests that an ammonia slip limit lower than five ppm should be used for Heater B-401. Dr. Fox's claim that ammonia slip of two ppm or less has been achieved in practice is based on data that are not comparable to Heater B-401.

The data provided by Dr. Fox are for electric generating facilities (including a 96 megawatt simple cycle electric generating facility in Lowell Massachusetts, and a 170 MW combined-cycle electric generating facility in Cambridge Massachusetts). This equipment is gas turbines, not refinery heaters. The SCAQMD also enforces a two ppm ammonia slip limit on electric generating facilities, which is considered BACT for such equipment. However, electric generating facilities and refinery heaters are different basic equipment and BACT is not transferable. BACT for refinery heaters has only been demonstrated at five ppm.

Further, even if the emissions limits were transferable. Dr. Fox is not accounting for the difference in dilution rates of the two different types of equipment. The refinery heaters are permitted at a dilution rate of three percent oxygen. The data Dr. Fox provides indicates a much higher dilution rate of 15 percent. If the 15 percent oxygen content were adjusted to three percent oxygen content, the two ppm ammonia concentration would be equivalent to six ppm, which would be greater than the five ppm the District imposes.

Dr. Fox also provided data for the Paramount Cogeneration facility regarding a technology referred to as "zero ammonia slip" technology. Again, these data are not transferable to the ConocoPhillips Heater B-401. Although the Paramount Cogeneration plant is located at a refinery, the equipment involved consists primarily of a turbine used to generate electricity, not refinery heaters. Discussions with Thomas Hastings (author of the document in Exhibit 5 to Dr. Fox's letter) on September 16, 2005, indicated that Cormetech has not used the "zero slip" technology on any refining application or any heater, and has expressed concerns about using this technology in such applications. Even if the technology were transferable, the permit limit (and thus the BACT limit) for this "zero ammonia slip" technology is in fact, five ppm, not two ppm or zero.

This comment also raises issues related to the formation of secondary particulate matter. The comments related to secondary PM10 formation were previously received in the comment letter dated July 20, 2005 and responded to in Response 1-23 and 1-24 in the Final Subsequent Negative Declaration. See also Response 4-1, above.

The comment suggests that the case of *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, requires any amount of increase in emissions of a nonattainment pollutant or precursor to be considered a significant impact requiring preparation of an EIR. The *Kings County* case does not stand for this principle. Rather, in that case, the court posited the relevant questions as "***whether*** any additional amount of precursor emissions should be considered significant" in light of the nonattainment status of the air basin. This question was referred back to the lead agency for consideration, but the court did not pre-judge the answer. In the district, the SCAQMD has considered this question and concluded that, considering the totality of the district's regulatory and other programs, AQMD control measures, etc., some amounts of additional emissions of nonattainment pollutants and precursors may occur without causing a significant impact under CEQA. These amounts are reflected in the agency's CEQA significance thresholds.

CEQA requires an EIR to be prepared whenever substantial evidence in the record supports a fair argument that significant impacts may occur as a result of the project. However, once a negative declaration or EIR has been certified for a project, the standards in CEQA Guidelines Sections 15162 through 15164 apply, rather than the fair argument standard. In the case of project modifications to be considered in a subsequent CEQA document after a project has already been reviewed under CEQA, an EIR may be prepared if the substantial evidence demonstrates that the circumstances described in CEQA Guidelines Section 15162 are present. Also, see Response 1-22.

4-3 Health and Safety Risk of Anhydrous Ammonia

This comment asserts that the Subsequent Negative Declaration fails to adequately address the impacts of transportation and storage of anhydrous ammonia, particularly with respect to potential impacts on worker health and safety. The health and safety risks in the event of an accidental release associated with the use of anhydrous ammonia were

addressed in the Subsequent Negative Declaration (see pages 2-26 through 2-30, and Appendix C, Response 3-2). For additional information regarding potential impacts due to a release during transportation, see Response 4-4. Regarding potential impacts due to a release of anhydrous ammonia on-site at the refinery, the conclusions of the Subsequent Negative Declaration are summarized below, together with additional information responsive to the assertions made in the comment.

A back-up supply consisting of two 150-pound cylinders of anhydrous ammonia are proposed to be installed as part of the aqueous ammonia vaporization skid at the new heater. The ConocoPhillips Wilmington Plant already stores, transports and uses anhydrous ammonia, so the proposed project modifications will not add new chemicals or new hazards to the facility. The Plant currently stores 150-pound cylinders of anhydrous ammonia for use as a back up ammonia supply at other SCR units within the Plant. No impacts associated with a release from the ammonia cylinders have occurred at the ConocoPhillips Wilmington Plant.

The SCAQMD considers impacts associated with hazards to be significant under CEQA if a release will result in an exposure at or beyond the facility boundary in concentrations equal to or greater than the Emergency Response Planning Guideline-2 (ERPG-2) level. The ERPG-2 levels are developed by the American Industrial Hygiene Association, and represent the maximum airborne concentration below which it is believed that nearly all individuals could be exposed up to one hour without experiencing or developing irreversible or other serious health effects that could impact their abilities to take protective action. In other words, exposure to a chemical at a concentration approaching the ERPG-2 level for as much as one hour is not expected to produce irreversible health effects or any serious health effect that would compromise the individual's ability to take protective action such as donning protective equipment or evacuating the area. The ERPG-2 level for anhydrous ammonia is 200 ppm. Consistent with the ERPG-2 level, the SCAQMD's significance threshold for exposure to ammonia is 200 ppm at or beyond the facility boundary.
A hazards analysis was performed in conjunction with preparation of the Subsequent Negative Declaration, including a series of release and dispersion calculations to simulate what might happen in the event of an accidental release of anhydrous ammonia from one or both cylinders (Appendix B to the Subsequent Negative Declaration). Based on an evaluation of a worst-case release, it was determined that the maximum distance that the ammonia release would travel and exceed the ERPG-2 level would be 60 feet for a release from one cylinder and 80 feet for a simultaneous release from both cylinders. Both of these distances fall well within the boundaries of the Refinery. Therefore, the general public would not be exposed to ammonia concentrations that exceed the ERPG-2 levels, and so hazard impacts would be less than significant.

The SCAQMD does not ordinarily consider risk at concentrations less than the ERPG-2 concentrations to be significant for purposes of CEQA if they would occur only within a refinery. Refinery workers are trained on refinery hazards and have access to emergency procedures and personal protective equipment to which persons outside of the refinery do not have access. Workers have access to respiratory protection equipment that is

available at designated locations throughout the refinery, which is known to the refinery workers. No significant impacts to workers are expected because of the extensive training requirements and the use and availability of personal protective equipment.

Risks to refinery workers will be further reduced because there are a number of rules, regulations, and laws that the Refinery must and has complied with that serve to minimize the potential adverse impacts associated with hazards at the facility and will minimize the hazards associated with the new units. Under federal OSHA, regulations have been promulgated that require the preparation and implementation of a PSM Program (40 CFR Part 1910, Section 119, and Title 8 of the California Code of Regulations, Section 5189). Risk Management Programs are covered under the California Health and Safety Code Section 25534 and 40 CFR Part 68, and Section 112r, by the Clean Air Act.

A PSM that meets the requirements of the regulations and is appropriately implemented is intended to prevent or minimize the consequences of a release involving a toxic, reactive, flammable, or explosive chemical. The primary components of a PSM include the following:

- Compilation of written process safety information to enable the employer and employees to identify and understand the hazards posed by the process;

- Performance of a process safety analysis to determine and evaluate the hazard of the process being analyzed;

- Development of operating procedures that provide clear instructions for safely conducting activities involved in each process identified for analysis;

- Training in the overview of the process and in the operating procedures is required for facility personnel and contractors. The training emphasizes the specific safety and health hazards, procedures, and safe practices; and

- A pre-start up safety review for new facilities and for modified facilities where a change is made in the process safety information.

An RMP is required for certain chemicals at the Refinery, including ammonia. The RMP consists of four main parts: hazard assessment that includes an off-site consequence analysis, five-year accident history, prevention program, and emergency response program.

The above measures are currently in place and will remain in place as part of the SCR project. These requirements help avoid an accidental release and minimize the potential exposures in the event of a release.

Finally, the comment asserts that the modeling in the Subsequent Negative Declaration shows that in the event of an accidental release, potentially lethal concentrations of

ammonia will be present within a few seconds at up to 45 feet from the site of the release. This is an incorrect characterization of the modeling in the Subsequent Negative Declaration. The most severe scenario presented in Table 1 to Appendix B of the Subsequent Negative Declaration shows that in the event of a simultaneous release from both cylinders, the concentrations of ammonia could reach the ERPG-3 level at up to 45 feet from the release. The ERPG-3 level represents the maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour without experiencing or developing life threatening health effects. Given the small size of the cylinders, release of the entire contents of the cylinder would occur in just a few seconds (12 to 14 seconds). Moreover, the hazards analysis concluded that in all cases the ammonia concentrations would be quickly diluted below 25 ppm due to the rapid mixing of the released material with the surrounding air. Thus the ammonia would quickly dissipate, and any exposure would be short term. Therefore, the assertions in the comment that workers would be exposed to potentially lethal concentrations of ammonia, and that they would not have time to retrieve and put on protective equipment, are not supported by any facts in the record and are directly contrary to the conclusions in Appendix B.

4-4 Hazards Associated with Ammonia Transport

The transportation hazards including the number of truck trips due to ammonia use in the ULSD project were addressed in the Subsequent Negative Declaration (see pages 2-28 to 2-30) and Appendix C, Response 3-2). The analysis in the Subsequent Negative Declaration is summarized below together with additional information responsive to the comment.

As discussed in the Subsequent Negative Declaration, the ConocoPhillips Wilmington Plant currently uses anhydrous ammonia, aqueous ammonia, and anhydrous ammonia in cylinders, primarily for use in other SCR units. Aqueous and anhydrous ammonia are currently routinely delivered to the ConocoPhillips facility. ConocoPhillips receives ammonia from a local ammonia supplier located in the City of Los Angeles.

Deliveries of aqueous ammonia are made to the facility by tanker truck via public roads. The maximum capacity of a tanker truck is 6,000 gallons and ConocoPhillips estimates a maximum of 1,525 gallons per year (about four gallons per day) will be required to operate the new SCR Unit. Therefore, based on the onsite storage capacity and consumption of ammonia, delivery frequency from the supplier to the facility would increase by about one truck trip every four years (6,000 gallons per truck/1,525 gallons/year=3.93 or approximately four years). Therefore, the frequency of increased aqueous ammonia deliveries associated with the proposed new SCR Unit is very low. The estimated accident rate associated with transporting aqueous ammonia for this project is 0.000014, or about one accident every 71,427 years.

The anhydrous ammonia cylinders would be delivered to the site from a supplier that currently delivers gases to the Refinery on a routine basis (about once a week). The two anhydrous ammonia cylinders would be transported to the Refinery during one of these

routine deliveries, so that no increase in trips would be required. Therefore, the probability of an accident involving a truck transporting anhydrous ammonia would not change and the probability of an accidental release also would not change.

Cylinders used for the storage and transport of anhydrous ammonia are required to meet rigid U. S. Department of Transportation (DOT) specifications for the transport of hazardous materials. The pertinent DOT specifications include the type of material the cylinder must be made of, the cylinder wall thickness, manufacturing standards, the requirement that the cylinders be hydrotested to at least twice the service pressure, welding requirements, heat treatment requirements, and physical tests to confirm the metallurgic characteristics of the cylinder. Compliance with these DOT requirements further minimizes the potential for releases during transport.

The anhydrous ammonia cylinders will only be used in the event that the aqueous ammonia supply to the SCR Unit is interrupted. If not used, the cylinders would be replaced once every ten years, per U.S. Department of Transportation requirements.

The comment called into question the reliability of SCRs using aqueous ammonia, and raised the related question of frequency of use of the back-up cylinders of anhydrous ammonia. ConocoPhillips' recent experience with another aqueous ammonia SCR system supports the use of ten years as the replacement interval for the anhydrous ammonia cylinders.

Like the proposed SCR for the B-401 heater, the SCR for ConocoPhillips' Unit 118 uses aqueous ammonia and is equipped with back-up cylinders of anhydrous ammonia. When this system first started up, ConocoPhillips experienced periodic plugging of the ammonia injection system due to build-up of material in the long run of piping between the aqueous ammonia tank and Unit 118. The Refinery addressed the issue by installing a filter system and establishing a schedule for proactively changing the filter elements. Since installation of the filter system, the reliability of the aqueous ammonia system has been very high. The Refinery has experienced only minor, brief and infrequent interruptions of the aqueous ammonia supply. For example, the only unexpected interruptions in aqueous ammonia supply in 2004 (once or twice) and 2005 (once) lasted from 15 to 30 minutes each.

The aqueous ammonia system for the B-401 heater SCR is expected to be even more reliable than the system for the Unit 118 SCR. The length of piping between the aqueous ammonia storage tank and the SCR for B-401 will be short compared to the piping for Unit 118. This shorter length of piping will be less prone to accumulation of material in the line. In addition, the SCR for B-401 will be equipped with the same filters now in use in the Unit 118 SCR, and the filters will be maintained on the same schedule.

Each 150 pound cylinder used as back-up for the B-401 heater SCR will hold approximately a 16 day supply of ammonia at maximum rates. Assuming anhydrous ammonia is used twice per year for 30 minutes during filter changes, the back-up supply will last more than ten years. As discussed in the Subsequent Negative Declaration p. 2-

28, the DOT requires that the cylinders be replaced every ten years. Therefore, the analysis in the Subsequent Negative Declaration appropriately assumed that the cylinders would be replaced every ten years.

The hazards associated with the transport of anhydrous ammonia are negligible and less than significant because no increase in truck trips is expected, the cylinders are required to meet DOT specifications designed to reduce risk of release, and anhydrous ammonia transportation associated with the proposed project modification is expected to occur only once every ten years.

The ConocoPhillips Wilmington Plant has used ammonia at the site for a number of years without incident. The ConocoPhillips Wilmington Plant has not had any reportable release of ammonia associated with operation of the SCR units since it began operating the refinery. Further, there has been no reportable ammonia release associated with ammonia transportation to the site.

Since the hazards associated with ammonia transportation are considered less than significant, no mitigation measures are required.

CONCLUSION

The issues raised in the petition generally reiterate previous comments on the Subsequent environmental document for the ConocoPhillips SCR project, for which responses have been previously prepared. The new issues provided in the petition are related to PM2.5 and the ammonia slip limit. The SCAQMD regulates PM2.5, which is a subset of PM10, by regulating PM10. No increase in PM10 emissions is expected because no increase in the firing rate of Heater B-401 is expected. The data provided to support the Union's conclusion that the ammonia slip should be limited to two ppm is based on data for electric generating facilities operating at 15 percent oxygen. When the oxygen is adjusted to three percent (which is the operating parameter for refinery heaters), the comparable ammonia slip would be six ppm. Based on the above, no additional environmental review is required as no potential significant impacts have been identified.