May 23, 2006

Ms. Deborah Jordan
Director, Air Management Division
United States Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105

Subject: Comments on draft reopened Title V permits (revision 2) for the following facilities
A0010,Chevron Products Company (Richmond)
A0016, ConocoPhillips Refinery (Rodeo)
B2626, Valero Refining Company (Benicia)
B2758-59, Tesoro Refining and Marketing Company (Martinez)

Dear Ms. Jordan:

Thank you for your comments on the draft Revision 2 reopening of Title V permits, dated May 24, 2005. We appreciate EPA providing comments during the public comment process. This practice greatly improves the efficiency of the review and revision process.

The District has made some changes in response to comments. The details are in the District response, contained in Attachment A.

The proposed permits that are submitted to EPA will reflect the changes described in Attachment A. If you have any questions, please call Dennis T. Jang, Senior Air Quality Engineer, at (415) 749-4707.

Sincerely,

Jack P. Broadbent,
Executive Officer/
Air Pollution Control Officer

Enclosure
BFB:myl
Cc: Gerardo C. Rios, USEPA Region IX
Adams, Broadwell, Joseph & Cardozo - Daniel Cardozo, et. al.
California Air Resources Board - Mike Tollstrup
Chevron Products Company - Jim Whiteside
Communities for a Better Environment – Adrienne Bloch
Conoco-Phillips Company - Willie W. C. Chiang
Golden Gate University - Marcie Keever, et al
Shell Martinez Refinery - Aamir Farid
Tesoro Refining and Marketing Company - J. W. Haywood
Valero Refining Company - Douglas Comeau

Attachment A
District Response to EPA Comments on Draft Revision 2 Permits

1. Best modern practices for cooling towers
Chevron, ConocoPhillips, Shell, Tesoro, Valero

Comment: "As indicated in the statements of basis prepared for this revision, the District determined that frequent monitoring for potential heat exchanger leaks is the best modern practice for the operation of refinery heat exchangers. More specifically, the District concluded that daily visual inspections plus water sampling and analysis for indicators of hydrocarbon leaks once per shift constitutes best modern practices. While frequent monitoring for leaks should be considered an element of best modern practices for cooling towers, the proposed practices do not include a component that would limit or otherwise minimize the emissions from cooling towers with leaking heat exchangers. Under the District's current proposal, the cooling towers could emit tons of VOC emissions per day with no consequences provided that the refineries continue to monitor for the presence of leaks.

"Regulation 1-207 defines best modern practices as, "The ***minimization of emissions*** from equipment and operations by the employment of modern ***maintenance*** and operating practices used by superior operators of like equipment and which may be reasonably applied under the circumstances." It is unclear how the District's proposed monitoring regimen would comport with this definition. EPA asks that the District discuss whether additional maintenance and operating practices should be employed to be consistent with the definition in Regulation 1-207."

Response: The District's determination of best modern practices for the purpose of the exemption in 8-2-114 is based upon a survey of all Bay Area refineries, and is a composite of the best techniques used at each of the refineries. Based on this survey, the District has determined that best modern practices consist of a number of elements, including the monitoring to ensure that a hydrocarbon leak into cooling water would be swiftly detected, maintenance to minimize the chances of equipment failure that could cause such a leak, and appropriate response actions in order to minimize emissions in the event that any leaks are discovered. All of these elements together make up the "best modern practices" as defined in Regulation 1-207, and the refineries must implement all elements for the cooling towers to be exempt from Regulation 8-2. The nature of any corrective action will depend upon the cause and the severity of the detected leak, and so cannot be specified in advance. However, the District agrees with EPA's comment that the determination of best modern practices should include maintenance taking corrective action as appropriate. This will be expressly included in the District's determination as reflected in the statements of bases for Revision 2.

Comment: "EPA also notes that Chapter 115 of the Texas Commission on Environmental Quality Rules contains regulatory requirements for cooling tower heat exchange systems. Like the District's rule, the TCEQ rule contains certain exemptions. In particular, §115.768 states, "Any cooling tower heat exchange system in which each individual heat exchanger is operated with the minimum pressure on the cooling water side at least five pounds per square inch gauge (psig) greater than the maximum pressure on the process side, as demonstrated by continuous pressure monitoring and recording at all heat exchangers, is exempt from the requirements of this division…" The District should address whether operation in a similar manner could be considered the best modern practice for the minimization of VOC emissions from the refinery cooling towers."

Response: A heat exchanger that has been designed with a pressure difference between the fluids on either side might be inherently less likely to see hydrocarbon leak into the water side. But the pressure differential of a heat exchanger is a matter of design, not operating practice. District Regulation 1-207 defines "Best Modern Practice" as those "maintenance and operating practices used by superior operators of like equipment . . . which may be reasonably applied under the circumstances." Under this definition, the District must base its finding on maintenance and operating practices rather than equipment design specifications. Requiring conformance to a design criterion such as that used by Texas is therefore not authorized. It is also not necessary in this situation, because the District believes that regular monitoring and appropriate corrective action should be effective for preventing cooling tower leaks that may cause emissions.

2. Miscellaneous cooling tower comments
ConocoPhillips

a. **Comment:** Page 6 of the statement of basis contains a typographical error regarding the cooling towers that require permits pursuant to BAAQMD Regulation 2-1-319. Specifically, it states, "…the District determined that three cooling towers (S452, S453, and S454) require District permits pursuant to BAAQMD Regulation 2-1-319 because they emit more than 5 tons particulate matter per year." According to the data supplied by the District, the three sources with estimated emissions greater than 5 tpy are S453, S454, and S455.

   Response: The SOB has been corrected.

b. **Comment:** BAAQMD Regulation 6-311 appears to have been omitted from tables IV – CC and VII – CC.1 (for sources S452-S455, S457, S458, S500); and IV – CC and VII – CC.2 (for S456).

Response: BAAQMD Regulation 6-311 was omitted in error although compliance with the regulation was addressed in the evaluation. It will be added to Tables IV-CC.1, IV-CC.2 VII-CC.1 and VII-CC.2.

c. **Comment:** Part 6 of Condition 22121 and Part 4 of Condition 22122 require that the owner/operator estimate the daily amount of VOC emitted if the monitoring, "indicates a hydrocarbon leak for longer than 4 weeks." EPA recommends the District clarify that the 4 week time period is cumulative over the entire year.

Response: This comment concerns a condition in the existing operating permit for this facility previously issued by the District. This permit condition was incorporated into the Title V permit unmodified. Issues regarding the appropriateness of the condition are not within the scope of the Title V review process.

d. **Comment:** In the event that leaks are detected for more than 4 weeks, Part 6 of Condition 22121 and Part 4 of Condition 22122 state, "The owner/operator shall sample the water in the inlet line and in the return line and determine the VOC content in each line using EPA laboratory method 8015. This analysis shall be performed each week until VOC levels return to **normal**." It is not clear what "normal" VOC levels are in the cooling tower water. Please clarify the conditions.

Response: This comment concerns a condition in the existing operating permit for this facility previously issued by the District. This permit condition was incorporated into the Title V permit unmodified. Issues regarding the appropriateness of the condition are not within the scope of the Title V review process.

'Normal" in this context means the range of VOC levels that are present when there are no leaks, and "return to normal" means that whatever VOCs were leaked into the cooling water are now gone. Normal VOC levels will vary from system to system, and may vary within a system over time.

e. **Comment:** Part 6 of Condition 22121 states, "If a hydrocarbon leak occurs at Sources S452, S457, or S500, the facility shall submit an application for a District permit within 90 days of determining that the source is subject to District permits." It is not clear why S458 was omitted from this requirement. Please include it in the condition or explain its absence.

Response: This error was fixed before the District's operating permit was issued. The proposed Title V permit therefore contains the appropriate applicable requirement, which has been modified to include S458.

f. Part 4 of Condition 22121 requires (non-federally enforceable) monthly sampling of the cooling water to determine the total dissolved solids content of each cooling tower. Part 7 (which is federally enforceable) in turn says that the owner/operator shall use the total dissolved solids monitoring to estimate the annual emissions from the cooling towers. It further says that estimate shall be used to confirm that S452 has not emitted more than 5 tons of particulate matter per year.

i. **Comment:** Please explain the District's rationale for making Part 4 non-federally enforceable. Note that the same requirement in Condition 22122 is federally enforceable.

Response: The permit condition was imposed in order to gather information for the District's emission inventory, and to determine emission fees. Because the monitoring was not imposed to assure compliance with a federally enforceable applicable requirement, the monitoring requirement is not federally enforceable.

ii. **Comment:** Given that the requirements to monitor and estimate the emissions apply to Sources S457, S458, and S500, it is unclear why they were excluded from the requirement in Part 7 to confirm that the PM emissions are below 5 tpy.

Response: BAAQMD Condition 22121, part 7, requires that the owner/operator seek a permit for S452 if he or she determines that it emits more than 5 tpy particulate. S457, S458, and S500 were not included because a judgment was made that they were too small to ever emit more than 5 tpy particulate.

iii. **Comment:** Consistent with Part 6 of the condition, please add a requirement to Part 7 for the owner/operator to submit an application for a permit if the emissions exceed 5 tpy. Also please make the same change to Part 5 of Condition 22122.

Response: This comment concerns a condition in the existing operating permit for this facility previously issued by the District. This permit condition was incorporated into the Title V permit unmodified. Issues regarding the appropriateness of the condition are not within the scope of the Title V review process.

g. **Comment:** "The draft engineering evaluation for Application 10349 indicates that ConocoPhillips does not operate the S456 with what the District considers to be best modern practices. As a result, the District included the emission limit of Regulation 8-2-301 in the permit along with a requirement to take a sample of the water and perform a visual inspection. While this will indicate whether or not there is a leak, it will not clearly demonstrate compliance or non-

compliance with the emission limit if a leak is present. Given the very small capacity of the cooling tower and the associated low likelihood of a violation, EPA generally agrees with the District's approach in this instance. However, EPA recommends that the District add a requirement to quantify the VOC content in the water and estimate the emissions if a leak is present for a certain period of time. Such a requirement could, for instance, be coupled with Part 4 of Condition 22122.

Response: The operator is required to collect and report information from which VOC emissions may, if necessary, be quantified. A requirement to actually make the calculation would be redundant. Furthermore, this comment concerns a condition in the existing operating permit for this facility previously issued by the District. This permit condition was incorporated into the Title V permit unmodified. Issues regarding the appropriateness of the condition are not within the scope of the Title V review process.

3. MACT CC Applicability Determinations for Flares
Shell, Tesoro, and Valero

Comment: "The statements of basis for the draft permits for Chevron, ConocoPhillips, Shell, Tesoro, and Valero contain identical discussions explaining the District's rationale for determining that all flares at these refineries are exempt from the requirements of MACT Subpart CC. This discussion of the applicability focuses on the exemption in 63.640(d)(5) for emission points routed to a fuel gas system, and on the fact that episodic and non-routine releases are not included in the definition of miscellaneous process vents and, as such, are not subject to Subpart CC.

"EPA continues to disagree with BAAQMD's interpretation of the fuel gas system exemption, as it applies to flares. However, BAAQMD also puts forth an alternative rationale for why flares at these refineries are not subject to MACT Subpart CC. This rationale is that the flares at the Bay Area refineries are not within the definition of "miscellaneous process vent" because these flares only combust non-routine, episodic releases. In general, EPA agrees with this analysis. Such emissions are excluded from the definition of "miscellaneous process vent" per Section 63.641. Therefore, if a flare only combusts episodic, non-routine releases, it will never be used to control "miscellaneous process vents" and will never be subject to the requirements for flares in Section 63.644(a)(2).

"However, EPA notes that the monitoring data provided on BAAQMD's website for some of these flares (notably Shell's OPS Central Flare, Shell's OPS Central Flexigas Flare, Tesoro's Main Flare, and Valero's North and South Flares) indicate that these flares may be combusting routinely released gases. For instance, Shell's OPS Central Flare operated every day from January 1, 2004 to January 31, 2005 (the most recently available date of information on the website). The other flares mentioned have operated between 45 and 69 percent of the time during the same

period. The data suggests that these flares may be used for more than episodic, non-routine releases. The applicability determinations in the statements of basis for at least these flares at Shell, Tesoro, and Valero would greatly benefit from a discussion of why the apparently routine use of these flares is still considered non-routine and episodic by the District in evaluating the applicability of Subpart CC."

Response: The refineries have provided information intended to demonstrate that the flares are used only for episodic, non-routine events.

Shell OPS Central Flare
See attached October 31, 2005 letter from Shell.
Shell OPS Central Flexigas Flare (S-1771)
See attached October 31, 2005 letter from Shell.
Tesoro Main Flare
See attached October 31, 2005 summary from Tesoro.
Valero North Flare
See attached October 19, 2005 letter from Valero.
Valero South Flare
See attached October 19, 2005 letter from Valero.

[Note: This draft response is included with the Chevron and ConocoPhillips Proposed Permits merely as a placeholder. It will be supplemented for the Shell, Tesoro, and Valero Proposed Permits].

4. Hydrogen Plant Vents
Tesoro

Comment: "BAAQMD has added the limits of Regulation 8-2, along with periodic monitoring, to the tables of source-specific requirements for the hydrogen plants at Shell and Tesoro, consistent with EPA's comments of October 8, 2004. Because the changes to Shell's permit were made in the final permit issued by BAAQMD on December 16, 2004, this comment only addresses the changes proposed for the Tesoro permit. Condition 22070 of the draft permit for Tesoro requires an annual source test for Tesoro's hydrogen plant to demonstrate compliance with Regulation 8-2. The Statement of Basis should discuss why an annual source test is sufficient to assure compliance with the limits of Regulation 8-2 at hydrogen plant vents.

Response: BAAQMD Regulation 8-2-301 limits an organic emission containing more than 15 lbs/day and containing a concentration of more than 300 ppm total carbon on a dry basis. Tesoro has provided the following source test data from the two CO_2 vents. Note that TOC is total organic hydrocarbon

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CO2 Vent #1		CO2 Vent #2	
TOC (ppmvd)	TOC (lb/day as C1)	TOC (ppmvd)	TOC (lb/day as C1)
67	20.9	102	7.9
77	24.9	109	8.1
47	16.1	49	3.9
53	16.7	71	5.4
58	23.3	61	5.3
55	20.5	86	6.4
average = 59.5	average = 20.4	average = 79.7	average = 6.2

Average emissions of TOC from CO2 Vent #1 are 20.4 lb/day but the concentration average is 59.5 ppmvd with the highest emission of 77 ppmvd, which is well below the limit of 300 ppmvd in Regulation 8-2-301. Average emissions of TOC from CO_2 Vent #2 are 6.2 lb/day, while the average concentration is only 79.7 ppmvd. The highest concentration from CO_2 Vent #2 is 109 ppmvd, which is less than half of the limit of 300 ppmvd of Regulation 8-2-301.

Based on the margin of compliance demonstrated by source tests on the hydrogen plant CO_2 vents, and the consistency with which source test results have always been well below the regulatory limits, annual source testing should be sufficient to demonstrate compliance with the limits in Regulation 8-2-301.

5. Electrostatic Precipitator Particulate Monitoring
Chevron, Shell, Tesoro, Valero

Chevron
Comment: "In attachment 2 of its October 8, 2004 comment letter, EPA stated:

> *The Chevron permit (see Table VII.C.2.1) requires four source tests per year and parameter monitoring for the applicable New Source Review limit. The District should either demonstrate that it has already conducted a review that shows that the NSR monitoring in the Chevron permit is adequate periodic monitoring for the SIP, or conduct a similar monitoring review for the Chevron permit.*

Table VII.C.2.1 in the draft permit for S-4285, Fluid Catalytic Cracking Unit lists Condition #11066 Part 7A as federally enforceable monitoring for SIP rules 6-310 and 6-311. Condition #11066 Part 7A requires parametric monitoring to assure compliance with a limit of 21 lb/hr of Total Suspended Particulate pursuant to BACT.

SIP-approved BAAQMD Regulation 6-310 limits particulate emissions to 0.15 grains per dscf of exhaust gas volume. BAAQMD Regulation 6-311 states that no person shall discharge particulate matter into the atmosphere at a rate in excess of that specified in Table 1 of the Rule for the corresponding process weight rate.

Comment: In reviewing the statement of basis accompanying the draft revised permit for Chevron, we were unable to find a discussion showing that the NSR monitoring is

adequate periodic monitoring for SIP Regulation 6-310 and 6-311, nor were we able to find a separate discussion of periodic monitoring pursuant to these rules. Because the limits of 6-310 and 6-311 are different than the BACT limit, the permit record should demonstrate how the monitoring imposed pursuant to the BACT limit also assures compliance with the SIP limits.

Response: The limits of 6-310 and 6-311 are different from the BACT limit in that they are less stringent than the BACT limit. Compliance with the BACT limit should entail compliance with 6-310 and 6-311.

Shell, Tesoro, & Valero
Comment: "EPA appreciates the District's intent to add periodic monitoring to the permit for the ESPs to assure compliance with SIP Regulation 6 particulate matter limits. EPA understands that the District has determined that the monitoring required for compliance with MACT Subpart UUU is an appropriate means to assure compliance with Regulation 6 for these sources.

"The District has added permit Condition #22165 (Shell), #22150 (Tesoro), and #22156 (Valero) to the permits for sources controlled by an ESP. These conditions require that the refinery operators begin conducting continuous monitoring of ESP operating parameters "no later than the ESP monitoring commencement date required under MACT Subpart UUU." The conditions also require operators to establish a correlation between "selected parameters" and particulate mass emissions by the deadline set forth in MACT Subpart UUU, and to establish a range of compliance. Finally, the conditions state that each time the parametric value exceeds the range established for compliance determination, operators must conduct a source test within 45 days to determine compliance with Regulation 6-310 and, for Tesoro, 6-311. EPA has the following comments on the draft revisions with respect to ESP monitoring:

a. Parameters

Comment: "The specific parameters to be monitored should be chosen and included in the permit prior to issuance. The compliance deadline for MACT Subpart UUU has passed; therefore, the refineries should have already determined how they will comply with the standard. If any refineries have requested an extension, that information could be included in the statement of basis."

Response: Subsequent to the publication of the Draft permits, the District has contacted the affected refineries about their choice of monitoring approach. All of the affected refineries have decided to monitor opacity. The permit conditions have been updated to require opacity monitoring.

All of the refineries have conducted the initial compliance demonstration required by the permit condition. We are in the process of determining appropriate compliance ranges for each of the sources.

b. Dates

Comment: The permit should list the specific dates by when the refineries must establish the correlation and begin parametric monitoring.

Response: The District incorporated the compliance deadline of the MACT standard in order to avoid duplication and conflict. Now that the MACT standard's compliance deadline has passed, the permit conditions have been updated to require immediate compliance.

c. Correlation

Comment: The permits currently do not make clear that a correlation must be established linking the chosen operating parameters to the limits of Regulation 6. Part 2 of the conditions state:

> *The owner/operator shall conduct an initial compliance demonstration to establish a correlation between selected parameters and particulate mass emission by the deadline set forth in 40 CFR Part 63, Subpart UUU.*

This should be rephrased to state "…to establish a correlation between selected parameters and the particulate mass emission limits of Regulations 6-310 and 6-311."

Response: The District has not determined that the requested correlation is feasible. Opacity is determined by multiple variables. As indicators of proper ESP operation, voltage and current are parameters relevant to assuring compliance. However, it is the engineering judgment of the District that voltage and current do not predict opacity with a reasonable degree of accuracy. A June 30, 2005, letter from Valero refinery contains data analysis consistent with this finding. Furthermore, the requested correlation is not necessary in order to assure compliance with the standard. The District considers the more general formulation of the condition to be the most appropriate language at this time.

d. Federal Enforceability

Comment: The requirements of Condition 22165 (Shell) and 22156 (Valero) are included as non-federally enforceable conditions in tables IV-BK and IV-A3, and as federally enforceable monitoring requirements pursuant to SIP Regulation 6-310 in tables VII-BA (Shell) and VII-A3 (Valero). EPA believes that Conditions 22165 and 22156 should be denoted as federally enforceable in tables IV-BK and IV-A3.

Response: The conditions will be denoted as federally enforceable in the proposed permit for the reasons given in the comment.

Comment: The requirements of Condition 22150 (Tesoro) in tables IV-K, IV-M, IV-Y, IV-Z, and IV-AD are lacking enforceability determinations. These tables should indicate that the requirements of Condition 22150 are federally enforceable, as discussed above for Shell and Valero.

Response: The condition will be denoted as federally enforceable in the proposed permit for the reasons given in the comment

e. Regulation 6-311

Comment: Regulation 6-311 should be added to the Shell and Valero permits as a source-specific applicable requirement in tables IV-BK and IV-A3, with periodic monitoring added to tables VII-BA and VII-A3.

Response: Regulation 6-311 applies to "general operations," which excludes heat transfer operations (i.e., the CO boilers in Shell Table IV-BK and Valero Table IV-A3)

Condition 22150 in Tesoro's permit applies to Regulation 6-310 and 6-311 (see Condition 22150, Part 1). Additionally, 6-311 is listed as a source-specific applicable requirement in tables IV-K, IV-M, IV-Y, IV-Z, and IV-AD of the Tesoro permit. However, the Tesoro permit omits the monitoring requirements for Regulation 6-311 in Section VII, tables VII-M, VII-V, VII-W, and VII-AB. Monitoring for Regulation 6-311 should be added to these tables.

Response: Regulation 6-311 is included in Tables IV – K, IV- M, IV - Y, IV - Z, and IV - AD. The corresponding monitoring for Regulation 6-311 will be added to the Applicable Limits and Compliance Monitoring Requirements tables, Table VII – K, VII – M, VII – V, VII – W, and VII-AB.

f. Exceedence of Compliance Range

Comment: Part 4 of conditions 22165, 22150, and 22156 requires that the owner/operator conduct a source test within 45 days of detecting an exceedence of the established range of compliance. Please explain the District's rationale for not treating an exceedence of the established compliance range as a violation of the particulate limits of Regulation 6 as soon as that exceedence is detected.

Response: Exceedance of the established compliance range is not, standing alone, sufficient evidence to determine that a violation of Regulation 6 has occurred. An exceedence of the compliance range is an indication of a potential violation of Regulation 6's particulate emissions requirements, but the correlation between opacity and particulate emissions is not strong enough to meet the District's burden to demonstrate that a violation has occurred.