



BAY AREA  
AIR QUALITY  
MANAGEMENT  
DISTRICT

## BOARD OF DIRECTORS' REGULAR MEETING

May 21, 2003

A meeting of the Bay Area Air Quality Management District Board of Directors will be held at 9:45 a.m. in the 7<sup>th</sup> floor Board room at the Air District headquarters, 939 Ellis Street, San Francisco, California.

### Questions About an Agenda Item

The name, telephone number and e-mail of the appropriate staff person to contact for additional information or to resolve concerns is listed for each agenda item.

### Meeting Procedures

The public meeting of the Air District Board of Directors begins at 9:45 a.m. The Board of Directors generally will consider items in the order listed on the agenda. However, any item may be considered in any order.

After action on any agenda item not requiring a public hearing, the Board may reconsider or amend the item at any time during the meeting.

# BOARD OF DIRECTORS' REGULAR MEETING A G E N D A

WEDNESDAY  
MAY 21, 2003  
9:45 A.M.

BOARD ROOM  
7TH FLOOR

## CALL TO ORDER

Opening Comments  
Roll Call  
Pledge of Allegiance  
Commendations/Proclamations

Scott Haggerty, Chairperson  
Clerk of the Boards

## PUBLIC COMMENT PERIOD

**Public Comment on Non-Agenda Items, Pursuant to Government Code Section 54954.3**  
*Members of the public are afforded the opportunity to speak on any agenda item. All agendas for regular meetings are posted at District headquarters, 939 Ellis Street, San Francisco, CA, at least 72 hours in advance of a regular meeting. At the beginning of the regular meeting agenda, an opportunity is also provided for the public to speak on any subject within the Board's subject matter jurisdiction. Speakers will be limited to five (5) minutes each.*

## CONSENT CALENDAR (ITEMS 1 – 6 )

Staff/Phone (415) 749-

1. Minutes of May 7, 2003  
M. Romaidis/4965  
[mromaidis@baaqmd.gov](mailto:mromaidis@baaqmd.gov)
2. Communications  
Information only  
W. Norton/5052  
[exec@baaqmd.gov](mailto:exec@baaqmd.gov)
3. Report of the Advisory Council  
B. Hanna/4962  
[bchanna@napanet.net](mailto:bchanna@napanet.net)
4. Monthly Activity Report  
P.Hess/4951  
[phess@baaqmd.gov](mailto:phess@baaqmd.gov)  
*Division Activities for the month of April 2003*
5. Consideration and Approval of Purchase Orders in Excess of \$35,000  
J. McKay/4629  
[jmckay@baaqmd.gov](mailto:jmckay@baaqmd.gov)  
*Pursuant to the District's Administrative Code Division II, Section 4.3, Fiscal Policies and Procedures; the Board is hereby requested to authorize the Executive Officer/APCO to enter into the following contracts:*
  - *Purchase order not to exceed \$320,000 to J.D. Edwards for the purchase of the J.D. Edwards Enterprise Resource Planning (ERP) product with 40 concurrent user licenses. This application will replace the existing Mitchell Humphreys system.*

- *Purchase order not to exceed \$360,000 to AMX Inc., for the purchase of 2181 hours of J.D. Edwards Professional Services to cover the first phase of the implementation work, with further implementation services to follow.*
- *Purchase order not to exceed \$89,000 to Mythics, Inc., for the purchase of a two processor Oracle database license with 25 named users and twenty days of database administrator training.*
- *Purchase order not to exceed \$93,000 to IBM for the purchase of two p-series servers with associated racks and power conditioning. These servers will run the J.D. Edwards Application and the associated Oracle Database.*

6. Authorize the Executive Officer/APCO to continue participating in the Congestion Mitigation and Air Quality Improvement Program (CMAQ) including providing local matching funds and obligating the next round of funding by September 30, 2003. **T. Lee/4905**  
[tlee@baaqmd.gov](mailto:tlee@baaqmd.gov)

*The Board will consider a resolution authorizing the Executive Officer/APCO to continue participation in the CMAQ program to include matching funds.*

### **COMMITTEE REPORTS AND RECOMMENDATIONS**

7. Report of the **Budget and Finance Committee** Meeting of May 7, 2003

**CHAIR: J. MILLER**

**W. Norton/5052**

**Action:** *The Committee recommends referral of the Fiscal Year 2003/2004 Proposed Budget to the June 4, 2003, meeting for the first of two public hearings. Final action will be taken at the conclusion of the second public hearing on this matter scheduled for June 18, 2003.*

### **PUBLIC HEARING**

8. Public Hearing Regarding Proposed Amendments to District Regulation 3: Fees

**W. deBoisblanc/4704**

[wdeboisblanc@baaqmd.gov](mailto:wdeboisblanc@baaqmd.gov)

*The purpose of these amendments is to increase BAAQMD permit fees by 1.6%, equal to the increase in the Consumer Price Index (CPI) for the California Bay Area (San Francisco, Oakland, San Jose) for 2002, as reported by the California Department of Industrial Relations, Division of Labor Statistics and Research.*

9. Public Hearing on Proposed Regulation 12: Miscellaneous Standards of Performance; Rule 11: Flare Monitoring at Petroleum Refineries and approval of a Negative Declaration Pursuant to the California Environmental Quality Act **G. Kendall/4932**  
[gkendall@baaqmd.gov](mailto:gkendall@baaqmd.gov)

*This new rule would require refineries to monitor the volume and composition of gases burned in refinery flares, to determine the reasons for flaring, and to report all of this information to the District.*

## **OTHER BUSINESS**

10. Report of the Executive Officer/APCO
11. Chairperson's Report

## **CLOSED SESSION**

12. Conference with Legal Counsel

### **Existing Litigation:**

*Pursuant to Government Code Section 54956.9(a), a need exists to meet in closed session with legal counsel to consider the following cases:*

**Communities for a Better Environment and Transportation Defense and Education Fund v. Bay Area AQMD, Metropolitan Transportation Commission, Association of Bay Area Governments, and California Air Resources Board, San Francisco Superior Court, Case No. 323849**

**Communities for a Better Environment, and Our Children's Earth Foundation v. Bay Area Air Quality Management District, Valero Refining Company – California, et al., San Francisco Superior Court, Case No. CPF03502678**

## **OPEN SESSION**

13. Board Members' Comments

*Any member of the Board, or its staff, on his or her own initiative or in response to questions posed by the public, may: ask a question for clarification, make a brief announcement or report on his or her own activities, provide a reference to staff regarding factual information, request staff to report back at a subsequent meeting concerning any matter or take action to direct staff to place a matter of business on a future agenda. (Gov't Code § 54954.2)*

14. Place of Next Meeting - 9:45 a.m., Wednesday, June 4, 2003 -939 Ellis Street, San Francisco, CA 94109
15. Adjournment

WCN:mag

**CONTACT CLERK OF THE BOARD - 939 ELLIS STREET SF, CA 94109**

**(415) 749-4965**  
**FAX: (415) 928-8560**  
**BAAQMD homepage:**  
[www.baaqmd.gov](http://www.baaqmd.gov)

- To submit written comments on an agenda item in advance of the meeting.
- To request, in advance of the meeting, to be placed on the list to testify on an agenda item.
- To request special accommodations for those persons with disabilities (notification to the Clerk's Office should be given at least 3 working days prior to the date of the meeting, so that arrangements can be made accordingly).

BAY AREA AIR QUALITY MANAGEMENT DISTRICT  
Memorandum

To: Chairperson Haggerty and Members  
of the Board of Directors

From: William C. Norton  
Executive Officer/APCO

Date: May 14, 2003

Re: Board of Directors' Meeting Minutes

RECOMMENDED ACTION:

Approve attached minutes of the Board of Directors meeting of May 7, 2003.

DISCUSSION

Attached for your review and approval are the minutes of the May 7, 2003, Board of Directors' meeting.

Respectfully submitted,

William C. Norton  
Executive Officer/APCO

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**  
939 ELLIS STREET - SAN FRANCISCO, CALIFORNIA 94109

Draft Minutes: Board of Directors Regular Meeting – May 7, 2003

**Call To Order**

Opening Comments: Chairperson Haggerty called the meeting to order at 9:47 a.m.

Roll Call: Present: Scott Haggerty, Chair, Harold Brown, Maria Ayerdi, Roberta Cooper, Chris Daly (9:53 a.m.), Mark DeSaulnier, Jerry Hill, Liz Kniss (10:02 a.m.), Jake McGoldrick (10:00 a.m.), Nate Miley, Julia Miller, Dena Mossar, Mark Ross, Tim Smith, Pam Torliatt (9:52 a.m.), Marland Townsend, Brad Wagenknecht, Shelia Young.

Absent: John Silva, Gayle Uilkema.

Pledge of Allegiance: Director Brad Wagenknecht led the Board in the Pledge of Allegiance.

**Commendation/Proclamations:** There were none.

**Public Comment Period: Speakers:**

Suma Peesapati, Staff Attorney  
Communities for a Better Environment  
Oakland, CA 94612

Tina Cosentino, Community Organizer  
Communities for a Better Environment  
Oakland, CA 94612

Ms. Peesapati and Ms. Cosentino made comments on the 2001 Clean Air Plan, the Flare Monitoring rule, and the toxic tours.

**Consent Calendar (Items 1 - 7)**

1. Minutes of April 16, 2003
2. Communications. *Correspondence addressed to the Board of Directors.*
3. Report of the Advisory Council.
4. Quarterly Report of the Air Resources Board Representative.
5. Consider Approval of Purchase Orders in Excess of \$35,000 and Notification of a Purchase Order in Excess of \$20,000

*In accordance with the provisions of Division II, Section 4.3 of the Administrative Code, the Laboratory Services Section requested the Board authorize the Executive Officer/APCO to execute Purchase Order #41621 and Purchase Order #14003 to Sievers Analytical Instruments for a Sulfur Chemiluminescence Analyzer System at a cost of \$44,685 and to*

*Thermo Environmental Instruments (TEI) for 9 Ozone Analyzers in the amount of \$64,082. The Laboratory also notified the Board of Directors of Purchase Order #41620 that was issued to Shimadzu Scientific Instruments for a GC-2010 Gas Chromatograph at a cost of \$33,906.95.*

6. Consider Modifications to the Existing Class Specification for the Meteorology and Data Analysis Manager Position.

*The Board considered modifying the existing class specification for the Meteorology and Data Analysis Manager classification.*

7. Report of Personnel Transfer in Accordance with Division II Fiscal Policies and Procedures Section 3.3(b) of the Administrative Code.

*In accordance with Division II Fiscal Policies and Procedures Section 3.3(b) the Board was notified of the transfer of an Air Quality Specialist position from Program 203 to Program 401 and that the transfer of funds for salary and benefits in connection with this position has also been implemented.*

**Board Action:** Director Townsend moved approval of the above Consent Calendar items, seconded by Director Miller; carried unanimously without objection.

#### Committee Reports and Recommendations

8. Report of the Stationary Source Committee Meeting of April 16, 2003

*Action: The Committee recommended approval of the District's position regarding proposed amendments by the Air Resources Board to the Ozone Transport Mitigation Regulations and comments that are intended to improve the program.*

Director DeSaulnier presented the report and stated that the Committee met on Wednesday, April 16, 2003 and received a presentation on the proposed amendments by the Air Resources Board (ARB) to the Ozone Transport Mitigation Regulations. The ARB will hear the rule changes on May 29<sup>th</sup>. The staff presentation reviewed the following:

- The staff proposal.
- Existing ARB transport mitigation requirements
- Implementation of Best Available Retrofit Control Technology (BARCT)
- Mitigating State ozone excesses in four geographical areas.
- ARB concepts under consideration.
- "No net increase" thresholds.
- Concepts for all feasible measures.
- Suggestions to improve transport mitigation;
  - Use best scientific tools to assess transport and determine mitigation requirements;
  - Develop particulate matter transport mitigation requirements;
  - Plans need to mitigate transportation and land use impacts; and
  - ARB should continue to mitigate emissions from motor vehicles and consumer products.



The Committee recommends approval by the Board of the District's position on amendments proposed by the ARB regarding ozone transport mitigation regulations.

Staff provided a report to the Committee on the development of a flare monitoring regulation at petroleum refineries and highlighted the following:

- The District's accomplishments.
- A review of concepts and intent.
- Discussed existing flow monitoring
- Discussed composition analysis.
- The benefits.
- The current status.

Three members of the public spoke on this item.

The next meeting of the Committee is scheduled for Wednesday, May 21, 2003 immediately following the Regular Board meeting and staff will discuss Title V.

**Board Action:** Director DeSaulnier moved the Board approve the recommendation of the Stationary Source Committee; seconded by Director Townsend; carried unanimously without objection.

9. Report of the Regional Agency Coordinating Committee Meeting of April 18, 2003

Director DeSaulnier presented the report and stated that the Committee met on Friday, April 18, 2003 at MetroCenter in Oakland. Air District staff provided an update on the status of the 2001 Ozone Attainment Plan. The Environmental Protection Agency has not yet taken action on the 2001 Ozone Plan, which was submitted to EPA on November 30, 2001. Because EPA has not proposed approval of the Plan, a sanction requiring 2 to 1 offsets for new or modified major stationary sources went into effect in the Bay Area on April 22, 2003. Staff do not foresee significant adverse effects if the duration of the sanction is short. EPA staff have indicated that they expect to take action on the 2001 Ozone Plan in the near term.

Air District staff also provided an update on the current round of ozone planning. The ozone modeling is underway. Three high ozone episodes from 1999 and 2000 will be analyzed. Preliminary modeling results are expected this coming summer. The public involvement process is also underway. The first meeting of the Ozone Working Group was held on March 27, 2003. Based on discussion at that meeting, two public involvement forums are needed. The Ozone Working Group will meet approximately every other month for intensive discussion. In addition, staff will develop a community outreach strategy for the ozone planning process with the assistance of Community Focus and the Air District's Resource Teams. Director DeSaulnier asked that county health directors or medical doctors attend these meetings and requested that inter-district transport of air pollution be included on a future RACC agenda.

MTC staff presented information about a funding application MTC submitted to Caltrans for a carsharing project in the Bay Area. Caltrans has subsequently indicated that the funding for the program is not available this year. Committee members asked staff to investigate other sources of funding for a pilot project. MTC staff also presented information about the financial condition of the Santa Clara Valley Transportation Authority.

ABAG staff presented information about the work plan to advance the Smart Growth strategy and the role of the staff working group. ABAG staff also noted that the Bay Area Smart Growth Project received an award from the Congress for New Urbanism. Committee members commented that many “smart” development projects were completed and underway throughout the region. The next meeting of the Committee will be at the Call of the Chair.

**Board Action:** None. This report provided for information only.

In response to a question from Director Mossar, Mr. Norton stated that the Air District has not seen the Aviation Plan that was discussed at the Regional Airport Planning Committee, but will get a copy.

10. Report of the Public Outreach Committee Meeting of April 21, 2003.

Director Ross presented the report and stated that the Committee met on Monday, April 21, 2003 and staff presented a report on the six lawn mower buy-back events for 2003. Staff stated that the Alameda County Waste Management Authority is doing an event on their own. The first two events were held on April 12<sup>th</sup> in Marin and Sonoma counties. Because of the rain, there were a lower number of lawn mowers being exchanged than anticipated. Three events were held on April 19<sup>th</sup> in Contra Costa County, Sonoma and Sunnyvale. The City of Sunnyvale is contacting the 30-35 people who did not receive a lawn mower last year and inviting them to this year’s event.

Staff provided an overview of the 2003 summertime program and the consultant, Swirl, reviewed the components of the campaign, which includes radio, television, outdoors, youth, Spanish and Chinese language campaigns. On July 1, 2003, the outdoor and radio campaigns will be launched with a new spot, which will focus on asthma.

Godbe Research and Analysis presented a report on the results of telephone surveys of the 2002 Spare the Air Campaign and the 2003 Wintertime Spare the Air Tonight woodsmoke campaign.

There was extensive discussion on whether the Air District should produce a 2004 Clean Air Calendar. The Committee determined to continue the item to its June meeting and requested staff to research alternatives/options and to address the cost issue. The next meeting of the Public Outreach Committee will be at 9:45 a.m., Monday, June 16, 2003.

**Board Action: Director Ross moved the Board approve the Public Outreach Committee Report; seconded by Director Cooper; carried unanimously without objection.**

11. Report of the Budget and Finance Committee Meeting of April 23, 2003.

Director Miller presented the report and stated that the Committee met on Wednesday, April 23, 2003. The Committee was presented with the District Financial Audit Report for Fiscal Year 2001/2002. A comprehensive A-133 audit was conducted, and the auditors expressed unqualified opinion. Staff was requested to report back at the next Committee meeting on actions that were recommended from the audit of two years ago. The staff was also requested to report on how the audit can be more comprehensive and how to respond to the fact that there may be material weaknesses.

Staff presented a report on the crash ratings on the Toyota Hybrid vehicles as determined by the National Highway Traffic Safety Administration and reviewed the emissions ratings of the vehicles. Staff presented information on the cost effectiveness of the vehicle lease program vs. purchasing.

Staff presented the proposed Fiscal Year 2003/2004 Budget and noted that the County revenue has not been adjusted because the District, at this time, does not know if the state will make adjustments that would affect the budget. Staff will come back to the Committee with recommended reductions as soon as it is known if there will be less money coming from this funding source. It was noted that the increase of 4.4% includes about a half million dollars to the program for bio-watch. The federal government has requested the District do monitoring at certain existing monitoring stations in the Bay Area. The District anticipates being reimbursed for this work. The Committee will discuss the budget further at its next meeting. The next meeting of the Budget and Finance Committee is scheduled for 11:00 a.m., or immediately following the Regular Board meeting of today.

**Board Action:** Director Miller moved the Board approve the report of the Budget and Finance Committee; seconded by Director Townsend; carried unanimously without objection.

12. Report of the Executive Committee Meeting of April 30, 2003.

*Action: The Committee recommended approval of the following:*

- A) Advisory Council recommendation regarding the Sonoma County Climate Protection Campaign attached; and*
- B) Appointment of (3) three New Advisory Council members and re-assignment of one Advisory Council member.*

**Chairperson Haggerty presented the report and stated that the Committee met on Wednesday, April 30, 2003, and received and filed the Quarterly Report of the Hearing Board and the Report of the Advisory Council. Advisory Council Chairperson Bill Hanna presented the recommendations of the Advisory Council on the following items.**

- 1. Sonoma County Climate Protection Campaign;**
  - a) District staff work with the Campaign to identify TFCA projects containing funding that could be used as seed money to leverage further contributions to the Campaign**
  - b) The District not allocate the requested \$25,000, but instead provide staff assistance**
- 2. Particulate matter abatement; and**
- 3. Improvements to Enhanced Inspection and Maintenance Program.**

**The Committee recommends the Board approve the Advisory Council recommendation regarding the Sonoma County Climate Protection Campaign.**

**Stan Hayes, Chairperson, Advisory Council Applicant Selection Working Group presented the Working Group's recommendations for the appointment of three Advisory Council members and re-assigning one Advisory Council member from the Public-at-Large category to the Registered Professional Engineer category. The**

**Committee approved the recommendations. Staff was requested to send letters, signed by the Chairperson, to each of the three members leaving the Advisory Council to thank them for their service on the Council.**

**Staff presented a report on the status of the U.S. EPA's action on the 2001 Ozone Attainment Plan. Staff reported that sanctions are now in effect because, although the District has fixed the deficiencies in the 1999 Ozone Attainment Plan, EPA has not approved them. If they are not approved within 6 additional months (by October 22, 2003), additional sanctions are imposed whereby federal transportation funding will be withheld. There was discussion on the TRANSDEF case and the ruling made by the Judge on the additional 26 tons of emission reductions. This matter will be discussed today during the Closed Session.**

**Staff presented a status report on the 2003-04 Ozone Planning and noted that it is also time to update the State Clean Air Plan. ENVIRON Corp. has been hired to conduct the modeling for the Bay Area using the information from the Central California Ozone Study (CCOS). The Modeling Advisory Committee (MAC) has been meeting and includes representatives from this Air District, MTC, EPA, ARB, downwind air districts, industry, environmental groups, community groups, and transportation groups. Staff reviewed the public involvement process and noted that work is being done on other forms of outreach. Staff is working with the Resource Teams to hold meetings about the ozone planning effort in communities around the region. The Committee requested staff compile a fact sheet listing "What the District did in the past and what the District is doing now." In addition, the Committee recommended the county health departments be invited to the meetings. The next meeting of the Executive Committee is scheduled for Wednesday, July 30, 2003.**

**Board Action: Chairperson Haggerty moved that the Board approve the recommendations of the Executive Committee; seconded by Director Townsend.**

There was discussion on the following: 1) the Sonoma Climate Protection Campaign recommendation and the need for clarification on the staff assistance to be provided by the District; 2) the District taking a higher profile role because there would be benefits for the Campaign and the Air District; and 3) the District staff coming back to the Board on how to pursue a model ordinance following Sonoma's leadership in the Bay Area around climate control and CO2 control.

Director Torliatt offered a friendly amendment to the motion to allocate the \$25,000 as requested and to include pursuing a model ordinance; Chairperson Haggerty and Director Townsend accepted the friendly amendment.

There was further discussion on: 1) the value of the staff time and how does this change the allocation of staff time on other projects; 2) the \$25,000 is not a budgeted item and the money would be taken from the Reserves; 3) the difficulty in quantifying the amount of staff time that would be needed for the Campaign; 4) the District being able to monitor what the \$25,000 would be used for; 5) funding sources; and 6) the Sonoma County Climate Protection Campaign making another presentation to the Board.

**Board Action:** A substitute motion was made by Director Miller to pull the Sonoma Climate Protection Campaign item for discussion and that it be put on a future agenda when staff has an opportunity to find out where the money will come from and to prepare a draft ordinance; and the Sonoma County Climate Protection Campaign makes another presentation to the Board; seconded by Director McGoldrick.

During discussion, Director Kniss requested information on if the District has allocated money for studies like this in the past and report back to the Board. The motion then carried on the following roll call:

AYES: Ayerdi, Cooper, Daly, DeSaulnier, Hill, Kniss, McGoldrick, Miller, Mossar, Ross, Smith, Torliatt, Townsend, Wagenknecht, Young, Haggerty.

NOES: H. Brown.

ABSENTIONS: Miley.

ABSENT: Silva, Uilkema.

**Board Action:** Director Townsend moved acceptance of the Executive Committee Report, including the change as requested on the Sonoma County Climate Protection Campaign recommendation; seconded by Director Miller; carried unanimously without objection.

13. Consider Authorizing the Executive Officer/APCO to enter into an agreement with Livermore Amador Valley Transit Authority for a no fare pilot program on Spare the Air days.

*The Livermore Amador Valley Transit Authority (LAVTA) would like to undertake a demonstration project and offer no fare transit on up to eight Spare the Air days during the 2003 summertime season. The proposal includes using \$55,605 in the Air District's CMAQ funding, with a \$32,670 match by LAVTA.*

Teresa Lee, Director of Public Information and Outreach, presented the report and stated that WHEELS has proposed to do a pilot demonstration project this summer to provide up to eight days of no-fare transit on high ozone, or Spare the Air days. Ms. Lee reviewed the outreach, advertising, partnerships and monitoring requirements. Ms. Lee stated that it is felt this project would reduce vehicle traffic in the Tri-Valley corridor. Staff is requesting the Board approve the recommended action.

There was discussion on the following: 1) data that shows these programs do not change behavior; 2) the effectiveness of the program needs to be monitored; 3) there is information that goes back to 1977 which indicates there is an increase in ridership; and 4) LAVTA has done this before, they have a modern fleet and have assured the District they will monitor the project. Ms. Lee stated that this is a demonstration and staff will bring back the information that is collected.

**Board Action:** Director H. Brown moved the Board approve authorizing the Executive Officer/APCO to enter into an agreement with Livermore Amador Valley Transit Authority

for a no fare pilot program on up to eight Spare the Air days; seconded by Director Wagenknecht.

During discussion, Mr. Norton noted that LAVTA is putting up some of the funding for this project and that if the project is expanded to other areas, the District will look at funding sources. The Board noted that the information obtained from the pilot project should be given to the rest of the counties. The motion then carried on the following roll call:

AYES: H. Brown, Ayerdi, Cooper, Daly, DeSualnier, Hill, McGoldrick, Miley, Miller, Ross, Smith, Torliatt, Townsend, Wagenknecht, Young, Haggerty.

NOES: Kniss, Mossar.

ABSENT: Silva, Uilkema.

### **Other Business**

14. Report of the Executive Officer/APCO – Mr. Norton stated he had no report.
15. Chairperson's Report - Chairperson Haggerty announced the following: 1) Director Hill has been appointed to the Regional Airport Planning Committee (RAPC); and 2) Ellen Garvey was hired by Alameda County to look at voluntary programs to reduce air pollution in the Tri-Valley area.

### **Closed Session** (The Board adjourned to Closed Session at 10:46 a.m.)

16. Conference with Legal Counsel

#### **A) Existing Litigation**

**Pursuant to Government Code Section 54956.9(a), a need existed to meet in closed session with legal counsel to consider the following case:**

*Communities for a Better Environment and Transportation Defense and Education v. Bay Area AQMD, Metropolitan Transportation Commission, Association of Bay Area Governments, and California Air Resources Board, San Francisco Superior Court, Case No. 323849*

### **Open Session** (The Board reconvened to Open Session at 11:02 a.m.)

Mr. Bunger reported that the Board met in Closed Session to discuss the case listed in 16A on the agenda and general direction was given to Counsel by the Board.

17. Board Members' Comments: Director Young thanked the staff for sending Ms. Lee to San Leandro to make a presentation on the woodsmoke ordinance and requested that Ms. Lee make the same presentation to the Alameda County Mayor's Conference.

Chairperson Haggerty noted that the Air District had a booth at the Honey and Wine Festival in Livermore last weekend.

18. Time and Place of Next Meeting - 9:45 a.m., Wednesday, May 21, 2003, 939 Ellis Street, San Francisco, California.
19. Adjournment: The meeting was adjourned at 11:03 a.m.

**Mary Romaidis**  
**Clerk of the Boards**

**mr**

BAY AREA AIR QUALITY MANAGEMENT DISTRICT  
Memorandum

To: Chairperson Haggerty and Members  
of the Board of Directors

From: William C. Norton  
Executive Officer/APCO

Date: May 6, 2003

Re: Report of the Advisory Council

RECOMMENDED ACTION:

Receive and file.

DISCUSSION

Attached for your review are draft minutes of the Advisory Council Public Health Committee meeting of April 14, 2003.

Respectfully submitted,

William C. Norton  
Executive Officer/APCO



**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

**Memorandum**

**To:** Chairperson Haggerty and  
Members of the Board

**From:** William C. Norton  
Executive Officer/APCO

**Date:** May 21, 2003

**Re:** Report of Division Activities for the month of April 2003

**RECOMMENDED ACTION:**

Receive and file.

Reviewed by: Peter Hess

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**ADMINISTRATIVE SERVICES DIVISION – W. TANAKA, DIRECTOR**

The proposed budget for fiscal year 2003/2004 was presented to the Board of Directors at the April 9, 2003 meeting. At the meeting, the budget was referred to the Budget and Finance Committee, that met on April 23, 2003. The committee reviewed the budget and will discuss the budget further at a May 7, 2003 meeting.

Mr. Robert Izabal, a partner from the CPA firm of Izabal, Bernaciak and Company, presented an informational report on the fiscal year 2001/2002 audit at the same Budget and Finance meeting. It was reported that the District was issued an unqualified audit report. The report on compliance with OMB circular A-133 states “In our opinion, Bay Area Air Quality Management District complied, in all material respects, with the requirements referred to above that are applicable to each of its federal programs for the year ended June 30, 2002.”

Phase I of the HVAC upgrades was completed during the month. Included in this first phase were installations of: 2 Back-draft dampers, 2 new louver openings, 2 new carbon monoxide sensors, 7 new variable frequency drive fans to replace 4 constant speed fans, and cleaning selected locations in the ductwork and balance existing fans in the HVAC mechanical penthouse.

Received during the month were 20 Toyota Prius Hybrid (gas/electric) vehicles. The vehicles, as part of the vehicle replacement program, will replace older, high mileage vehicles. The Hybrid’s are EPA and ARB rated to be Super Low Emissions Vehicles (SULEV) and are rated at 52/45 MPG.

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**COMPLIANCE & ENFORCEMENT DIVISION – C. SCHAUFELBERGER,  
ACTING DIRECTOR**

Staff completed a draft proposal to change the District's Complaint Program to better address the concerns expressed by community members. Staff implemented an over-the-phone foreign language translation service. A meeting was held between the Enforcement and Legal Divisions to discuss potential legal actions on expired permit violations. Staff presented the flare study results to the Board of Directors, Stationary Source Committee and the Advisory Council, Technical Committee. Staff gave a presentation on AB2650 (regarding trucks idling at the Port of Oakland) to the Advisory Council, Public Health Committee.

(See Attachment for Activities by County)

**INFORMATION SYSTEMS DIVISION – J. McKAY, DIRECTOR**

**Enterprise Resource Planning (ERP) Project for Air District Financial Systems**

The Air District's Financial System Project Team was identified and team member time commitments were determined. The capabilities of JD Edwards were verified in April by ongoing work of the Air District and JD Edwards project teams. This work includes high-level functional design that clarifies the future roles and interactions of the Districts' Financial Systems (potentially JD Edwards) and the Districts' Engineering/Production Systems (currently Databank/IRIS). Scope and contract negotiations continued through April. Next steps include finalization of project timeline and costs, and the authorization for purchase. Determination of appropriate tool sets and functional design for the Districts' future Engineering/Production Systems continues as a separate, but linked, process.

**Toolsets for Permits/Enforcement/Legal**

Target dates for this process will be determined in conjunction with the development of the ERP project plan to ensure successful implementation of both efforts with existing resources.

**Web Site Development**

Static page conversion continues and will allow for initial release of non-interactive components by September of this year.

**LEGAL DIVISION – B. BUNGER, DISTRICT COUNSEL**

The District Counsel's Office received 101 Violations reflected in Notices of Violation ("NOVs") for processing.

Mutual Settlement Program staff initiated settlement discussions regarding civil penalties for 73 Violations reflected in NOVs. Settlement negotiations by Mutual Settlement Program staff resulted in collection of \$82,301 in civil penalties for 74 Violations reflected in NOVs.

Settlement negotiations by counsel in the District Counsel's Office resulted in collection of \$104,500 in civil penalties for 49 Violations. In addition, the District Counsel's Office referred 8 Violations reflected in NOVs to District Attorneys for possible filing of criminal actions.

Counsel in the District Counsel's Office represented the District in two variance proceedings concluded by the District's Hearing Board during the month of April 2003.

**PERMIT SERVICES DIVISION – W. DE BOISBLANC, DIRECTOR**

**Permit Evaluation Activity**

Monthly Title V Activity

No draft Title V permits were circulated for final internal review before public comment begins.

Three proposed Title V permits were placed on public comment.

Plant B4511	Wolfskill Energy Center	Application 5501
Plant B4512	Riverview	Application 6964
Plant A1812	Kirby Canyon Landfill	Application 2619

Two new Title V permits were issued.

Plant B2095	Delta Energy	Application 2807
Plant A1464	Acme Fill Corporation	Application 3071

Issued, still active: 70

- Post-comment process 6
- Public Comment: 5
- Under Review: 21
- Not yet submitted 2

Total: 104

**Permit Systems**

Ongoing activities during this period included data processing of permit applications for new and modified industrial sources, gasoline dispensing facilities (GDF), annual throughput updates for permit renewals, e-mail notifications on permit activities to cities and counties.

During this month we received 159 permit applications, of which 67 were for electrical generators (a 50% increase over last month).

**Toxics Program**

Forty-three risk screens were completed in April for new and modified sources of toxic air contaminants. Rule development activities continued on Regulation 2, Rule 5, which would convert the existing Risk Screening Procedure and Risk Management Policy into a District rule. Workshops on this proposed rule are scheduled for late May 30 and early June.

(See Attachment for Activities by County)

**PLANNING DIVISION - T. PERARDI, DIRECTOR**

Staff made presentations to the Regional Agency Coordinating Committee and the Board Executive Committee regarding two planning issues: (1) the status of U. S. Environmental Protection Agency action on the Bay Area 2001 Ozone Attainment Plan and (2) the status of the current (2003/04) ozone planning process, specifically ozone modeling and public involvement. Public hearings were held regarding amendments to Regulation 2, Rule 6 (Title V facilities). Public hearings were scheduled for Regulation 12, Rule 11 (flare monitoring) and Regulation 3 (fees). One workshop was held regarding Regulation 12, Rule 11. Staff

distributed the application guidance for the FY 2003/04 Transportation Fund for Clean Air Regional Fund (TFCA) funding cycle. Staff completed the FY 2002/03 TFCA report on allocations and effectiveness. The Vehicle Buy Back Program contracts were amended to increase the total number of vehicles to be purchased from 2616 to 4575. A total of 300 vehicles were purchased in April 2003. Staff wrote nine comment letters regarding air quality impacts of development projects and plans in the Bay Area: Antioch General Plan Update, Calistoga General Plan Update, Livermore General Plan Update, El Sobrante Redevelopment Project (Contra Costa County), Downtown Mixed-Use Project (Santa Rosa), Gasser Foundation Master Plan (Napa), Glen Loma Ranch Specific Plan (Gilroy), Mission-Garin Annexation (Hayward) and Oaks Business Park (Livermore).

### **PUBLIC INFORMATION & OUTREACH – T. GALVIN LEE, DIRECTOR**

Highlights for April in the Public Information Division included initial planning for the 2003 Spare the Air campaign, participating in numerous Earth Day and five lawn mower buy-back events, and facilitating three community workshops on flare monitoring in Contra Costa County. In addition, there was significant press interest in the flare monitoring issue, as well as the enhanced Smog Check II program and the Superior Court ruling on the 2001 Clean Air Plan.

Outreach to the employers in the Spare the Air (STA) program began for the 2003 summer season. In April, mailings went out to Bay Area public libraries and the current STA employers providing information on the new season, seeking contact updates, and providing a materials order form. Staff also held a coordination meeting with the San Joaquin and Sacramento air districts, with an exchange of information and ideas. In addition, staff contacted the five Bay Area refineries regarding potential curtailment at the refineries on STA days. Staff also reviewed and updated the summertime STA advertising strategy and presented it to the Public Outreach Committee. The 2003 campaign will include participating in large events, a partnership with Kaiser Permanente and new ways to distribute Air Alerts.

Public Information staff participated in two-dozen Earth Day events throughout the region organized by local governments and employers. The Spare the Air youth outreach program premiered the children's air quality play "Smogzilla" at the San Jose Tech Museum as part of their Earth Day event. Twenty-five additional performances were held throughout the Bay Area during the pilot phase of the program. Five lawn mower buy-back events were held, with two more planned for May.

Red Star Yeast announced that it was closing its Oakland operation on April 1.

### **TECHNICAL DIVISION – G. KENDALL, DIRECTOR**

#### **Air Monitoring**

All thirty-three of the continuous air monitoring network stations were in full operation during the month of April 2003, including the seven ozone monitoring stations that began sampling on April 1. Two of the stations, one in Oakland and one in Crockett, are operating under the Children's Environmental Health Protection Program. Toxic air contaminant data from the Filbert St. station in West Oakland and the Oakland Davie Stadium station were compared after running concurrently for more than one year. After the Toxics Section determined that the monitoring results were comparable, the toxic air contaminant monitoring station at Davie

Stadium was shut down. Particulate monitors for PM<sub>2.5</sub> and PM<sub>10</sub> were in full operation at all designated stations, including five BAM (continuous PM<sub>2.5</sub>) monitors.

### **Meteorology and Data Analysis**

Historically, April has very low pollution levels in the Bay Area and 2003 continued this trend. None of the applicable State or National ambient air quality standards were exceeded and the Air Quality Index (AQI) remained in the "Good" range (below 51 AQI) every day of the month. April was much cooler and wetter than normal. District meteorological stations in Pleasanton and San Carlos recorded average maximum monthly temperatures of 60.1 and 62.2° F, six and five degrees below normal. Frequent frontal systems moving across the region with precipitation, the absence of extended periods of light wind, and cooler temperatures aloft contributed to good atmospheric mixing throughout the month.

Analysis of the PM<sub>2.5</sub> filter samples for March showed no exceedances of the 24-hour National PM<sub>2.5</sub> standard. April filter analysis has not been completed, but no exceedances are expected.

### **Laboratory**

Analyses continued for volatile organic compounds (VOCs) in coatings and related products by gas chromatography, and for asbestos and fallout materials by microscopy. The total percentage of ammonium compounds in an alkaline etchant from South Bay Circuits in San Jose was determined. Two emulsion oil samples from Dumbarton Quarry Associates in Hayward were analyzed for sulfur content and percent petroleum solvents. Gas chromatographic analyses for trichloroethylene and vinyl chloride were performed for EPA on three air stripper outlet samples from the Middlefield Ellis Whisman (MEW) ground water remediation Site in Mountain View. The initial boiling point of a deglaze solution from Pan Glo Services in San Francisco was determined. Analyses continued for potassium, chloride, ammonia, sulfate and nitrate in PM<sub>10</sub> filters, for toxic organic compounds in ambient air samples, and speciation of hydrocarbon compounds in gasoline vapor recovery and landfill samples and permanent gases in landfill samples. One hundred and sixty (160) PM<sub>2.5</sub> filters were gravimetrically analyzed. Quality Assurance activities required for compliance with conditions for accreditation by the National Institute of Standard and Technology for asbestos continued. Approximately three thousand five hundred (3,500) analyses were performed during this period.

### **Source Test**

Ongoing Source Test activities included Continuous Emissions Monitoring (CEM) Field Accuracy Tests, source tests, and evaluations of tests conducted by outside contractors. The ConocoPhillips Refinery's open path monitor monthly report for the month of March was reviewed. Provided ongoing participation in the District's Further Studies Measures for refineries and marine vapor recovery.

## **STATISTICS**

Administrative Services:

Accounting/Purchasing/Comm.

General checks issued .....	614	Follow-up (facility, PSD, Technical) .....	112
Purchase Orders issued.....	81	<b>Notices to Comply</b>	
Checks/Credit Cards Processed .....	1,655	Issued .....	54
Pieces of mail sent.....	28,232	Follow-up.....	50
Pubic Information Requests Rec'd .....	70	<b>Complaint Activities</b>	
<b>Information Systems</b>		Investigated.....	169
New installation completed.....	7	Follow-up (facility, PSD, Technical) .....	124
PC upgrades completed.....	4	<b>(COMPLIANCE ASSURANCE PROGRAM)</b>	
Service calls completed.....	70	<b>Major Air Pollution Incidents</b>	
<b>Human Resources</b>		Investigated.....	2
Manager/Employee Consultation (Hours).....	136	Follow-up (agencies contact, etc.) .....	2
Management Projects (Hours).....	304	<b>Dry Cleaning Inspection Activities.....</b>	108
Employee/Benefit Transactions .....	41	Sources in compliance .....	76
Training Sessions Conducted .....	0	Sources not in compliance .....	4
Applications Processed .....	663	New Sources found.....	0
Exams Conducted.....	6	Follow-up.....	28
New Hires.....	2	<b>Auto Body Inspection Activities .....</b>	132
Safety Administration .....	10	Sources in compliance .....	43
Inquiries (voice/electronic/in-person) .....	1344	Sources not in compliance .....	27
<b>Vehicle/Building Maintenance</b>		New Sources found.....	4
Vehicle services completed .....	8	Follow-up.....	58
Requests for building services.....	77	<b>Asbestos Inspection Activities.....</b>	171
<b><u>Compliance and Enforcement Division:</u></b>		Pre/during/post removals in compliance .....	153
<b>(INSPECTIONS)</b>		Pre/during/post removals non-compliance .....	3
Facility Inspections .....	1179	Follow-up.....	15
Source Inspections .....	1005	<b>Open Burn Investigation Activities.....</b>	283
Sources in Compliance.....	908	Pre/during/post burns .....	118
<b>Gasoline Dispensing Facility (GDF)</b>	285	Open burn in compliance .....	95
<b>Inspection</b>		Open burn in violation .....	23
Sources in compliance.....	121	Follow-up.....	26
Sources not in compliance.....	34	Fire departments contacted .....	24
New sources found.....	6	<b>Valves/Flanges/Connector Inspections .....</b>	8002
Follow-up (agencies contacted, etc.) .....	89	In-compliance .....	7874
Tags issued.....	29	Not in-compliance.....	22
Bulk Drop inspections.....	6	Follow-up.....	106
<b>Charts/Records and Related Activities .....</b>	1078	<b>Technical Related Activities .....</b>	33
Breakdowns investigated.....	15	Laboratory samples collected/submitted.....	18
CEM/GLM/Parametric/PRV excesses .....	52	Source tests requested .....	9
Monitor chart review (1 monitor) .....	179	Source tests observed.....	6
Records review (temp, throughput) .....	687	<b>Hearing Board Activities .....</b>	4
Inoperative Monitors .....	36	Staff review/recommendations.....	3
Follow-ups .....	109	Attendance on variances, abatement order and permit related hearings .....	1
<b>Notices of Violation</b>		<b>Permit Activities .....</b>	142
Issued .....	108		

Expired permits, reminder letter, referrals.....	65	<b>Public Information &amp; Outreach</b>	
Assist A/C applications .....	77	Presentations Made.....	8
<b>Training (Conducted/Attended).....</b>	53	Responses to Media Inquiries.....	52
New Inspectors .....	15	Press Releases .....	7
Job related.....	37	General Requests for information	165
Trade Associations .....	1	Visitors .....	0
<b>Public Information Outreach .....</b>	11	<b>Technical Services:</b>	
<b>Green Business Inspection Activities .....</b>	7	<b>Air Monitoring</b>	
Pollution Prevention .....	3	Days Exceeding National 8-hour Standard.....	0
Multimedia Inspections Conducted .....	1	Days Exceeding National 1-hour Ozone Standard.....	0
Follow-up (facility, PSD) .....	3	Days Exceeding State Ozone Standard .....	0
<b>Compliance Assistance.....</b>	15	Ground Level Monitoring SO <sub>2</sub> Excesses.....	0
Rule Audits.....	0	Ground Level Monitoring H <sub>2</sub> S Excesses.....	0
Compliance Schools .....	0	<b>Meteorology &amp; Data Analysis</b>	
Facility Review.....	14	Permissive Burn Days – North .....	30
Presentations.....	1	No-Burn Days – North .....	0
<b>Rule Development Activities</b>	5	Permissive Burn Days – South .....	30
Participation at workshops .....	1	No-Burn Days – South .....	0
Inspector input.....	4	Permissive Burn Days – Coastal .....	30
<b>(COMPLIANCE AND OPERATIONS PROGRAM)</b>		No Burn Days – Coastal.....	0
Asbestos plans received.....	388	<b>Calendar Year Totals to Date</b>	
Breakdown/monitor excesses reported .....	9	Jan - Apr Permissive Burn Days – North .....	111
Coating & other petitions evaluated .....	6	Jan - Apr No-Burn Days – North.....	9
Open burn notifications received.....	824	Jan - Apr Permissive Burn Days – South .....	112
Prescribed burn plans evaluated .....	3	Jan - Apr No-Burn Days – South.....	8
Smoking vehicle complaints received .....	2993	Jan - Apr Permissive Burn Days – Coastal.....	114
Tank/soil removal notifications received.....	14	Jan - Apr No-Burn Days – Coastal.....	6
Compliance assistance inquiries received.....	53	Days Exceeding National 8-hour Ozone Standard.....	0
Courtesy site visits requested.....	0	Days Exceeding National 1-hour Ozone Standard.....	0
Speakers bureau requests received .....	0	Days Exceeding State Ozone Standard .....	0
EPA satellite courses viewed/taped .....	0	<b>PM<sub>2.5</sub> Winter Season (2002-2003) Totals</b>	
<b>Field Engineering</b>		Oct-Mar Days Exceeding Nat. 24-hr PM <sub>2.5</sub> Standard.....	7
New Hearing Board cases reviewed .....	1	<b>Laboratory</b>	
<b>Permit Services</b>		Analysis Completed .....	3500
Annual update packages started.....	319	Inter-Laboratory Analyses.....	0
Annual update packages completed.....	317	<b>Technical Library</b>	
Total update pages entered .....	717	Titles Indexed/Catalogued.....	37
New applications received	180	Periodicals Received/Routed.....	124
Authorities to Construct issued.....	48	Library use .....	80
Permits to Operate Issued .....	101	Microfiche received.....	45
Exemptions.....	6	Orders.....	2
Authorities to Construct denied .....	0	CD ROM use.....	0
ERC Transfers.....	2	Internet use (hrs).....	7
		Reference (hrs) .....	9
		BNA Searches .....	3

<b>Source Test</b>		Monthly CEM Reports Reviewed.....	41
Total Source Test .....	68	Indicated Excesses from CEM .....	2
Pending Source Tests .....	8		
Violation Notices Recommended.....	3		
Contractor Source Tests Reviewed .....	450		
<b>Continuous Emissions Monitoring (CEM)</b>			
Indicated Excess Emission Reports			
Evaluated.....	7		

**MEETINGS, CONFERENCES, PRESENTATIONS**

<b>ALAMEDA</b>	
4/3	San Pablo, tour of Air Monitoring station for UC students
4/4	Arrowhead Steering Committee-Oakland
4/4	BAYCAP Shuttle Summit – Emeryville
4/8	Staff met with EPA to discuss a pending asbestos criminal case. – District
4/8	Staff met with representative from the NUMMI Corporation regarding breakdowns of equipment and Notices of Violations. – District
4/9	Tri Valley Resource Team on Air Quality
4/9	Port of Oakland: Panel interviews for Planners-Oakland
4/10	Site Visit, 00MOY14-Emeryville
4/10	Port of Oakland Air Quality Technical Review Panel-Oakland
4/11	Staff met with terminal operators of Total Terminal, Inc. at the Port of Oakland offices.
4/12	Oakland Zoo, Earth Day Fair
4/12	Castro Valley Earth Day Fair
4/16	City of Oakland Earth Day event
4/16	MTC re: Spare the Air funding
4/16	EBMUD Earth Day event
4/17	MTC re CMAQ & TFCA-Oakland
4/17	Staff met with community members at the CBE offices in Oakland to discuss the agenda for the upcoming April 30 meeting on the District’s complaint program.
4/17	Staff met with the AB2650 appointment subgroup. Attendees included the Truckers Association, Terminal Operators and the Port Oakland at the Port of Oakland
4/19	Berkeley Earth Day Festival
4/22	Enforcement staff met with the Legal Division regarding settlement of Notices of Violation issued to LeSaffre Yeast Corporation. - Oakland.
4/23	I/M Review Committee Meeting-Emeryville
4/23	Lawrence Livermore Lab Earth Day event
4/26	Chabot Space & Science Center Earth Day event
4/30	Hayward, Moreau High School Eco Fair
<b>CONTRA COSTA</b>	
4/3	Flare Community Meeting. – Rodeo



4/9	Supervising and Senior AQ Engineers met at Steelscape in Richmond to discuss existing permit conditions, capture efficiency and destruction efficiency for afterburner.
4/10	Contra Costa Health Department Asthma Coalition (Speaker)
4/15	Supervising Air Quality Engineer, Air Quality Engineer and Enforcement office conference with Calpine-Los Medanos and Delta Energy Centers concerning variance hearing on allowing to extend startup times and change of permit conditions.
4/17	Staff met with the Contra Costa DA and the District's Legal Division regarding the flare workgroup. – District
4/22	Staff met with Permit and Technical divisions regarding Steelscape's compliance issues.
4/25	Pittsburg, Earth Day celebration.
4/25	North Richmond, Environmental Justice workshop.
4/26	Richmond, Earth Day Fair.
4/29	Staff attended the Contra Costa Emergency Response Meeting in Martinez.
4/30	North Richmond, Complaint Program Review meeting.
4/30	Staff met with members of the community to present the District's proposal to change the complaint program. The community groups approved the proposal with some additional comments and requested the District proceed with the details for implementation.
	<b>MARIN</b>
4/25	San Domenico school Earth Day event
4/28	Meeting with Marin Co. Health Officer re: Proposed Crematory at Keaton's Mortuary
	<b>SAN FRANCISCO</b>
4/15	San Francisco Bicycle Plan Tech Committee-SFCTA
4/18	Mayor's Earth Day breakfast-SF City Hall
4/22	PG&E healthy planet fair
4/23	Principal Air Quality Engineer and Supervising Air Quality Engineer met with Pacific Gas & Electric regarding California Environmental Quality Act (CEQA) issues related to their proposed Alternative Compliance Plan.
4/26	Ghiradelli Square Earth Day event.
	<b>SAN MATEO</b>
4/4	Earth Day Celebration @ Genentech, South San Francisco
4/9	Fire Safe San Mateo County Meeting, Woodside
4/12	Earth Day Celebration @ Central Park in Millbrae
4/16	Varian Medical Systems Earth Day Celebration in Palo Alto
4/22	NASA Ames Earth Day Fair in Moffett Field
4/24	East Palo Alto Environmental Justice Resource Team.
	<b>SANTA CLARA</b>
4/17	AQE Manager, AQ Engineer met with Santa Clara Valley Transportation Authority to discuss application for backup generator permit.
4/19	San Jose TECH museum Earth Day event.
4/22	Agilent Technologies Earth Day Fair in Santa Clara
4/23	Earth Day Fair @ San Jose State in San Jose
4/23	Santa Clara University – Earth Day event.

4/23	Staffs met with the Santa Clara County DA representatives in a pre-settlement conference about a company's Title V permit violations.
4/24	IBM/Almaden Research Center, San Jose. Earth Day event.
	<b>SOLANO</b>
4/26	City of Vallejo, Earth Day event.
	<b>SONOMA</b>
4/22	Petaluma, Cisco Systems Earth Day event.
	<b>SACRAMENTO</b>
4/24	Interagency Air & Smoke Council (IASC) Meeting, Sacramento
4/9-11	Staff attended the CAPCOA Vapor Recovery meeting in Sacramento.
	<b>REGIONAL</b>
4/1	Ozone Working Group de-briefing-Oakland, Metro Center
4/2	Site Visit: Carl Moyer Project 01MOY03-Emeryville
4/3	Smart Growth Work Group-MetroCenter
4/9	MTC re Regional Bike Plan & RTP-MetroCenter
4/15	Staff attended the Monterey Task Force Meeting. – San Jose
4/15	Regional Rideshare Program TAC Meeting-Oakland
4/15	MTC 2005 RTP Performance Measures work group-MetroCenter
4/16	City Carshare re TFCA-District
4/17	Bridge Toll Increase Expenditure Plan Press Conference-Port of Oakland
4/18	Regional Agencies Coordinating Committee-MetroCenter Oakland
4/24	Power & Motion Conference-Sunnyvale
4/24	Superior Court re CEQA litigation-San Francisco
4/29	Community Focus re ozone plan outreach-District
	<b>STATE</b>
4/1	Principal Air Quality Engineer participated in the California Air Pollution Control Officers Association 2003 Engineering Symposium held in Monterey, CA.
4/1	Cal/EPA Sustainable Silicon Valley Meetings (Energy Conference Planning and Regular)-San Jose
4/2-3	Staff attended Asbestos NESHAP Task Force Workshop. – Ventura
4/4	Meeting with CARB re: Dual-Fueled Diesel Engines
4/8	CAPCOA Toxics and Risk Managers Committee Meeting
4/9	Meeting with ARB and EPA re: Ambient Air Dioxin Monitoring
4/11	“Partnerships in Planning” A.Q. Planning Conference-Vacaville
4/16	CAPCOA Toxics and Risk Managers Committee Meeting
4/22	CARB, State and Federal Measures Workshop-Sacramento
4/24	Staff attended CARB workshop regarding aboveground storage tanks. - Modesto.
4/10-11	Staff attended CAPCOA vapor recovery subcommittee meeting. – Sacramento
	<b>DISTRICT</b>
4/10	Regional Fund Auditor-District
4/14	AQE Manager gave lecture at Stanford Law School on the development of environmental regulations.

4/18	Community meeting regarding Tanks
4/25	AQE Manager telcon with CARB regarding No Net Increase program and BACT trigger level.
<b>NATIONAL</b>	
4/7-4/9	CRC On-Road Motor Vehicle Emissions Workshop-San Diego
4/28-4/29	Emission Inventory Conference-San Diego

<b>GOALS &amp; OBJECTIVES</b>	<b>Target</b>	<b>Status</b>	<b>Comments</b>
Provide quarterly written financial reports to program managers within 30 days of period.	Quarterly	83%	Ongoing
Complete implementation of GASB 34.	06/30/2003	85%	Expected completion 6/30/03
Installation of new energy efficient roof and completion of phase one of replacement of HVAC system.	06/30/2003	15%	Started 1/6/03
Replacement of emergency generator.	01/30/2003	95%	Started 11/01/02
Replacement of lobby doors.	06/30/2003	5%	Delayed
Adoption of District Budget for FY 2003-04.	06/18/2003	90%	Process started 1/03
Approximately 600 articles on District activities.	06/30/2003	80%	On schedule
Publish four issues of Air Currents.	06/30/2003	75%	On schedule
Ten presentations before civic and service groups.	06/30/2003	100%	Complete
Ten student presentations.	05/30/2003	100%	Complete
Five issues of the "Monitor".	05/30/2003	60%	Three issues published
Host ten groups of visitors.	05/31/2003	100%	On schedule
Four editorial board visits.	06/30/2003	0%	Expect to do editorial board visits in May
100 media stories.	10/15/2002	100%	Spare the Air and other stories
Transcription of 35,000 Smoking Vehicle complaints.	06/30/2003	80%	On schedule
Mail letters to registered owners within three days of receipt.	06/30/2003	80%	On schedule
Publish Semi-annual Smoking Vehicle Report.	06/30/2003	100%	Complete
Publish Annual Smoking Vehicle Report.	06/30/2003	100%	Annual report under review
Prepare weekly District position report on all matters before the Hearing Board.	Weekly	100%	On schedule
Evaluate and process Title V (20 estimated) and synthetic minor (3 estimated) permits.	06/30/2003	50%	Two issued this month
Select and enter contract with consultant for preparation of CEQA document for 2004 Ozone Attainment Plan.	06/30/2003	15%	Reviewing statements of qualifications from CEQA consultants
Complete analysis of Bay Area field study data for ozone and particulate matter.	06/30/2003	25%	Data received; in progress
Complete corroborative analyses for ozone SIP.	06/30/2003	20%	Delay due to vacant position
Estimate the precursor emissions reductions needed for attainment of the national 1-hour ozone standard by 2006.	06/30/2003	35%	On schedule
Complete Q/A review, organization of database files, and posting on the District's Web site of all of the District's meteorological data through the end of 2002.	05/31/2003	55%	On schedule
Evaluate projects to receive incentives for school bus retrofits.	03/31/2003	60%	Worked with Laidlaw, San Jose USD, West County School District on possible projects
Revise District CEQA Guidelines for cities and counties regarding diesel particulate matter.	06/30/2004	10%	Rescheduled to FY ¾ to coordinate with other air districts
Revise Reg 3: Fees.	06/30/2003	50%	Held workshop 3/21/03

Adopt Regulation 12, Rule 11 regarding Refinery Flare Monitoring (SIP Control Measure SS15).	04/30/2003	65%	Schedule revised to accommodate comment period
Revise 8-44: Marine Vessel Loading (SIP further study measure).	06/30/2003	50%	Schedule revised; awaiting source test data
Prepare and distribute FY 2003-04 TFCA Regional Fund application guidance.	04/30/2003	100%	Complete
Install updated switching equipment on District's main network backbone.	06/15/2003	70%	On schedule
Update "firewall" for improved network security.	7/01/2003	60%	On schedule
Keep Technical Library page on the District website up to date with monthly "new additions" list, and periodical holdings.	Ongoing	90%	On schedule
Continue marketing effort to make the Technical Library more visible to staff and encourage staff use of its resources.	Ongoing	85%	On schedule
Update by replacement several books and reports, making use of used or remaindered book sites.	Ongoing	85%	On schedule
Remain active in local "Special Libraries Association" and participate in SLA sponsored dinners, lectures and seminars.	Ongoing	90%	On schedule
Work with webmaster to get library catalog on BAAQMD website in 2003	Ongoing	25%	On schedule
Provide the Enforcement Division with analytical data from 800 samples to support their enforcement action.	06/30/2003	83%	On schedule
Provide the Air Monitoring Program with analytical data for 650 toxic organic compounds in ambient air samples.	06/30/2003	83%	On schedule
Determine the concentration of asbestos fibers in 300 asbestos containing bulk insulation materials for the Enforcement Division.	06/30/2003	83%	On schedule
Provide the Air Monitoring Program with analytical data from 2,000 PM2.5 filters. Train new personnel to perform the analysis.	06/30/2003	83%	On schedule
Participate in and complete 5 interlaboratory audits for toxic compounds conducted by CARB.	06/30/2003	60%	On schedule
Submit Certified Air Quality Data to EPA's AIRS Data Base for First Calendar Quarter of 2002.	06/30/2002	98%	Delay due to EPA data system change over
Submit Certified Air Quality Data to EPA's AIRS Data Base for Second Calendar Quarter of 2002.	09/30/2002	98%	Delay due to EPA data system change over
Submit Certified Air Quality Data to EPA's AIRS Data Base for Third Calendar Quarter of 2002.	12/30/02	98%	Delay due to EPA data system change over
Submit Certified Air Quality Data to EPA's AIRS Data Base for Fourth Calendar Quarter of 2002.	03/30/03	95%	On schedule
Submit Certified Air Quality Data to EPA's AIRS Data Base for First Calendar Quarter of 2003.	06/30/2003	75%	On schedule
Prepare and submit Annual Air Monitoring Network Review Report to EPA.	09/30/2002	50%	Postponed due to limited resources
Provide air quality, meteorological, and GLM data in electronic format to support the District goal to provide access to these data through the Internet.	06/30/2003	10%	Resources shifted
Prepare updated Quality Assurance Manual for Air Monitoring and provide to EPA.	06/30/2003	50%	On schedule
Design and construct portable acids gas samplers for episodic events. Train personnel.	06/30/2003	50%	On schedule
Configure a new van for mobile surveillance and episodic monitoring.	06/30/2003	100%	Complete
Modify an Air Monitoring van for use in auditing industry Ground Level Monitoring sites.	06/30/2003	80%	On schedule

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Prepare a corrective action plan for QA and air monitoring to meet EPA requirements.	06/30/2003	100%	Complete
Maintain criteria pollutant calibration standards and calibrators to meet EPA requirements.	06/30/2003	83%	On schedule

**BAY AREA AIR QUALITY MANGEMENT DISTRICT**

Inter Office Memorandum

To: Chairperson Haggerty and Members  
of the Board of Directors

From: Teresa Lee, Director  
Public Information and Outreach

Date: May 7, 2003

Re: Authorize the Executive Officer/APCO to continue Participating in the  
Congestion Mitigation and Air Quality Improvement Program

RECOMMENDED ACTION:

Approve the attached resolution authorizing the Executive Officer/APCO to continue participating in the Congestion Mitigation and Air Quality Improvement Program including providing local matching funds and obligating the next round of funding by September 30, 2003.

BACKGROUND

As part of the Air District's overall regional responsibility for air quality planning and control, authority to participate in the Congestion Mitigation and Air Quality Improvement Program for the San Francisco Bay Area is incorporated under Health and Safety Code § 40701 and 40717.

The Air District received CMAQ funding beginning in September 1999. Funding is provided for the Spare the Air campaign in program 305. The Spare the Air campaign has expanded with the use of these funds to include television advertising, expanded public service announcements, radio campaigns, and e-mail signups along with the sponsoring of carpool and transit events.

DISCUSSION

Staff has submitted a grant application to the Metropolitan Transportation Commission, the Bay Area regional transportation planning organization, for funds from the CMAQ program. A condition for receiving the funding states that the District must authorize a resolution that clearly identifies the project and authorizes execution of the agreement.

BUDGET CONSIDERATION/FINANCIAL IMPACT

The Air District is responsible for providing the necessary local matching funds in an amount of up to \$140,000 annually. These funds have been budgeted.

Respectfully submitted,

Teresa Lee, Director  
Public Information and Outreach

Prepared by: Mary Ann Goodley

FORWARDED: \_\_\_\_\_

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

**Resolution No. 2003-**

A Resolution of the Bay Area Air Quality Management District Board of Directors Authorizing District Participation in the Congestion Mitigation and Air Quality Improvement Program (“CMAQ”) for the San Francisco Bay Area

WHEREAS, the California Health & Safety Code, including Sections 40701 and 40717, provides the Bay Area Air Quality Management District with authority to participate in the CMAQ for the San Francisco Bay Area as a part of its overall regional responsibility for air quality planning and control; and

WHEREAS, the Transportation Equity Act for the 21<sup>st</sup> Century (TEA 21) (Public Law 105-178, June 9, 1998) and the TEA 21 Restoration Act (Public Law 105-206, July 22, 1998) continue the Surface Transportation Program (STP) (23 U.S.C. § 133) and the CMAQ (23 U.S.C. § 149); and

WHEREAS, pursuant to TEA 21, and the regulations promulgated thereunder, eligible project sponsors wishing to receive STP or CMAQ grants for a project shall submit an application first with the appropriate metropolitan transportation planning organization (MPO), for review and inclusion in the MPO's Transportation Improvement Program (TIP); and

WHEREAS, the Metropolitan Transportation Commission (MTC) is the MPO for the San Francisco Bay region; and

WHEREAS, the Bay Area Air Quality Management District is an eligible project sponsor for STP or CMAQ funds; and

WHEREAS, the Bay Area Air Quality Management District wishes to submit a grant application to MTC for funds from CMAQ in fiscal years 2003-04 and 2004-05 for its Spare the Air Program (herein also “the Project”) designed to reduce driving and congestion and increase use of transit, carpooling, walking, biking and other transit alternatives through increased outreach on radio, television and other media; support for the 2100 employers in the Spare the Air Employer Program; increased e-mail sign-up for automatic notification of Spare the Air days; coordination with cities and counties to assist in outreach to residents; outreach on the 511 number; emphasis on weekend automobile use; and measurement of the effectiveness of the program including emissions reductions associated with the Spare the Air program; and

WHEREAS, there is no pending or threatened litigation that might in any way adversely affect the Project, or the ability of Bay Area Air Quality Management District to implement the Project.

WHEREAS, MTC requires, as part of the application, a resolution providing that:

- 1) The sponsor commits to provide local matching funds of at least 11.47%;
- 2) The sponsor understands that STP and CMAQ funding is fixed at the programmed amount, and therefore any cost increase cannot be expected to be funded with STP or CMAQ funds;
- 3) The sponsor intends to complete the project as described in the resolution, and if the application is approved, as programmed in MTC's TIP;
- 4) The sponsor understands that funds must be obligated by September 30 of the year that the project is programmed for in the TIP.

NOW, THEREFORE, BE IT RESOLVED, by the Board of Directors of the Bay Area Air Quality Management District that the Executive Officer/Air Pollution Control Officer is authorized to execute and file an application for funding under the STP, CMAQ, or TEA 21 programs in the amount of \$ 2,000,000 to support the Spare the Air Program.

BE IT FURTHER RESOLVED, that the Bay Area Air Quality Management District will provide the necessary local matching funds in an amount up to \$140,000 annually.

BE IT FURTHER RESOLVED, that the Bay Area Air Quality Management District understands that STP and CMAQ funding for the Project, if granted, will be fixed at the programmed amount, and that any cost increases must be funded by the Bay Area Air Quality Management District and not by STP or CMAQ funding.

BE IT FURTHER RESOLVED, the Spare the Air Program will be executed as described in this resolution and, if the application is approved, for the funding amount shown in the MTC TIP with obligation occurring within the timeframe described below.

BE IT FURTHER RESOLVED, the CMAQ funds are expected to be obligated by September 30 of the year the Spare the Air Program is programmed for in the TIP.

BE IT FURTHER RESOLVED, that a copy of this Resolution will be transmitted to the MTC in conjunction with the filing of the application.

BE IT FURTHER RESOLVED, that the MTC is requested to support the application for the project described in the Resolution and to program the Project, if approved, in MTC's TIP.

The foregoing Resolution was duly and regularly introduced, passed and adopted at a regular meeting of the Board of Directors of the Bay Area Air Quality Management District on the Motion of Director \_\_\_\_\_; seconded by Director \_\_\_\_\_, on the \_\_\_\_\_ day of \_\_\_\_\_ 2003 by the following vote of the Board of Directors:



AYES:

NOES:

ABSENT:

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Scott Haggerty  
Chairperson

ATTEST:

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MARLAND TOWNSEND  
Secretary

BAY AREA AIR QUALITY MANAGEMENT DISTRICT  
Memorandum

To: Chairperson Haggerty and Members  
of the Board of Directors

From: William C. Norton  
Executive Officer/APCO

Date: May 7, 2003

Re: Budget & Finance Committee Meeting of May 7, 2003

RECOMMENDED ACTION

The Committee recommends referral of the Proposed FY 2003/2004 budget to the Board of Directors at its June 4, 2003, meeting for the first of two public hearings. Final action will be taken at the conclusion of the second public hearing on this matter scheduled for June 18, 2003.

BACKGROUND

The Budget & Finance Committee met on May 7, 2003. The Chairperson of the Committee will give an oral report of the meeting.

DISCUSSION

The Committee met and received reports on the following:

- Third Quarter Financial Report for FY 2002/2003
- FY 1999/2000 Audit Report Recommendation to Tag Assets

Also presented for continued discussion was the Fiscal Year 2003/2004 proposed budget.

BUDGET CONSIDERATION/FINANCIAL IMPACT

No impact on current fiscal year budget. The Fiscal Year 2003/2004 proposed consolidated budget is \$47,375,345.

Respectfully submitted,

William C. Norton  
Executive Officer/APCO

Prepared by: Wayne Tanaka

**BAY AREA AIR QUALITY MANGEMENT DISTRICT**

## Inter Office Memorandum

To: Chairperson Haggerty and Members  
of the Board of Directors

From: William deBoisblanc, Director  
Permit Services Division

Date: May 7, 2003

Re: Public Hearing Regarding Proposed Amendments to District Regulation 3: Fees

**RECOMMENDED ACTION:**

Public Hearing to adopt proposed amendments to Regulation 3: Fees.

First of two public hearings to adopt amendments to schedule L : Asbestos Operations and Schedule Q: Excavation of Contaminated Soil and Removal of Underground Storage Tanks. The second hearing is scheduled for July 2, 2003.

**BACKGROUND**

Consistent with the recommendations contained in 1999 KPMG report, the District is proposing to adjust all District fees and fee schedules by 1.6 percent. This increase is equal to the 2002 Consumer Price Index (CPI) adjustment for the California Bay Area (San Francisco, Oakland and San Jose). The proposed amendments, coupled with the increases for the previous four fiscal years, will assure that District's fee revenues are sufficient to fund its permit regulatory activities at current levels while maintaining District reserve accounts.

**DISCUSSION**

The proposed revisions to Regulation 3, Fees were discussed at a Public Workshop held on March 21, 2003. Staff have considered and addressed all comments made at the Public Workshops. A workshop notice, detailing the proposed amendments, was sent to almost 7000 permit holders. One written comment was submitted as a result of the workshop.

The proposed changes are expected to maintain the District's permit revenues at or near current levels for FY 2003-04. Although annual permit renewal fees are anticipated to increase by approximately \$250,000 as a result of the 1.6 percent Consumer Price Index (CPI) adjustment, it is likely that permit fees revenues from New & Modified source will be reduced by a similar amount. As was the case last fiscal year, this projection is based on the fact that it is anticipated that fewer applications for major power plants will be submitted during the next fiscal year.

All Hearing Board Fees, of Schedule A, including Excess Emission Fees, will also be increased by 1.6 percent. Likewise, fees for non-permitted activities, such as Asbestos Operations, Excavation of Contaminated Soil and Removal of Underground Storage Tanks will also be adjusted by the 1.6 percent increase in the CPI.

The California Environmental Quality Act (CEQA), Public Resources Code Section 21000 et seq., and the CEQA Guidelines, 14 CCR 15000 et seq., require a government agency,

such as the BAAQMD, that undertakes or approves a discretionary project to prepare documentation addressing the potential impacts of that project on all environmental media. If an agency's approval action on a project is considered exempt, CEQA does not apply. The District's proposed fee increase is statutorily exempt from the requirements of the California Environmental Quality Act as stated in the CEQA Guidelines Section 15273: "CEQA does not apply to the establishment, modification, structuring, restructuring, or approval of rates, tolls, fares, and other charges by public agencies....." *See also* Public Resources Code Section 21800(b)(8).

The details of the staff proposal are contained in the staff report and in the attached copy of Regulation 3, Fees in ~~strikeout~~ and underline format.

**The effective date of the proposed fee increases is July 1, 2003, except for Schedule L: Asbestos Operations and Schedule Q: Excavation of Contaminated Soil and Removal of Underground Storage Tanks, the final public hearing is scheduled for July 2, 2003.**

**Section 41512.5 of the California Health and Safety Code requires that for "non-permitted" sources a public hearing be held at least 30 days prior to the meeting of the district at which the adoption or revision of the fee schedule is to be considered.**

#### **Attachments**

A. Staff Report, B. Revised Rule in ~~Strikeout~~/Underline format

Respectfully submitted,

William deBoisblanc, Director  
Permit Services Division

Prepared by: William deBoisblanc  
Approved by: Peter Hess

FORWARDED: \_\_\_\_\_

**DRAFT**

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

**PROPOSED AMENDMENTS TO**

**BAAQMD**

**REGULATION 3, FEES**

**STAFF REPORT**

**Prepared by**

**William de Boisblanc  
Director of Permit Services Division,**

**May 9, 2003**

**Reviewed by**

**Peter Hess  
Deputy Air Pollution Control Officer**

## EXECUTIVE SUMMARY

The Bay Area Air Quality Management District is continuing the process of realigning permit fees and other District fees on an annual basis as recommended in the Cost Recovery Study prepared by KPMG for the District in 1999. In accordance with the recommendations of this study, staff is recommending that all District fees be increased by 1.6 percent, which corresponds to the increase in the Consumer Price Index (CPI) for the California Bay Area (San Francisco, Oakland and San Jose). Since the proposed fee adjustment is so modest this year, permit revenues are expected to be relatively unchanged for FY 03-04, but could actually decline considering the sluggish economy of the Bay Area.

The recommended increases in District fees for FY 03-04 are listed below.

### 1. Permit Fee Revisions

- A 1.6% Consumer Price Index adjustment in a) the filing fee for New and Modified Sources (Reg. 3-302), b) the banking filing and withdrawal fees (Reg. 3-311), and (c) the fees for alternate compliance plans (Reg. 3-312).
- A 1.6% Consumer Price Index adjustment on Fee Schedules B, C, D, E, F, G-1, G-2, G-3, G-4, H, I, K, M, N, and P.

### 2. Asbestos Operations and Excavation of Contaminated Soil

- A 1.6% Consumer Price Index adjustment for Schedule L, Asbestos Operations and Schedule Q, Excavation of Contaminated Soil and Removal of Underground Storage Tanks. Also, minor word changes to Sections 3-105 and 3-322 and Schedule Q substituting Excavation for Aeration to clarify the intent of the rule.

### 3. Hearing Board Fees

- A 1.6% Consumer Price Index adjustment in the all Hearing Board Fees of Schedule A including the excess emission fees. Also, the \$275 fee for each application for intervention by a third party has been eliminated.

### 4. Summary of Proposed Changes

At most the proposed changes are expected to increase the District's revenues from permit renewals by an estimated \$250,000 for FY 03-04. However, as stated above, revenues from all permitting activities including: Permit renewals, New and Modified permitting, Title V permitting, and AB2588 fees are expected to be approximately the same as during FY 02-03. The primary reasons for flat permit revenue projection are: the state of the economy and the projection of fewer major permit applications for refinery modifications and large new power plants.

Specifically, the following general fees and fee schedules of Regulation 3 will be revised.

- Regulation 3, Standards: Sections 302, 307, 309, 311, 312 and 315
- Schedule A, Hearing Board (Including Excess Emissions Fees.)
- Schedule B, Combustion of Fuel
- Schedule C, Stationary Containers for the Storage of Organic Liquids
- Schedule D, Gasoline Transfer at Gasoline Dispensing Facilities, Bulk Plants and Terminals
- Schedule E, Solvent Evaporating Sources
- Schedule F, Miscellaneous Sources (including Schedules G-1, G-2 and G-3)
- Schedule H, Semiconductor and Related Operations
- Schedule I, Dry Cleaners
- Schedule K, Solid Waste Disposal Sites
- Schedule L, Asbestos Operations
- Schedule M, Major Stationary Source Fees
- Schedule P, Major Facility Review Fees
- Schedule Q, ~~Aeration~~ Excavation of Contaminated Soil and Removal of Underground Storage Tanks

#### **EFFECTIVE DATE**

The proposed effective date of the amendments above is July 1, 2003.

## **BACKGROUND**

#### **GENERAL FEE INCREASE**

For the fifth year the District is relying on recommendations of the 1999 KPMG Cost Recovery Study in order to align District fee revenues more closely with the costs of the related programs. In the past the District often skipped adjusting the fee schedules to account for inflation. This practice, in part, caused District fee revenues to fall well below the actual program costs and also contributed to the depletion of the District's reserve accounts. In keeping with the recommendations of the KPMG Cost Recovery Study the District is proposing this 1.6 percent CPI adjustment of all District fees. The fee increase proposal for FY 03-04 should continue the process of bringing fees into alignment with related permit services costs. Table 1 below shows the history of permit fee increases starting in FY 1991-1992.

**Table 1. Fee Increase History**

<b>Fiscal Year</b>	<b>CPI Increase</b>	<b>Fee Increase</b>
FY 1991-1992	4.0	10.0
FY 1992-1993	3.2	0.0
FY 1993-1994	2.6	0.0
FY 1994-1995	1.4	1.25
FY 1995-1996	2.1	0.0
FY 1996-1997	2.2	0.0
FY 1997-1998	3.1	0.0
FY 1998-1999	2.7	3.1
FY 1999-2000	3.0	15.0*
FY 2000-2001	4.3	4.3
FY 2001-2002	4.4	4.4
FY 2002-2003	5.3	5.3
FY 2003-2004	1.6	1.6**

\*Includes a 3% CPI increase plus a 12% general fee increase.

\*\*Proposed

The District's permit program activities that are eligible for revenue sources are estimated at \$21.8 million for FY 03-04. The District's projected permit fee revenue for the coming year is \$18.4 million. In addition, program activities related to the asbestos renovation/demolition program, soil excavation project evaluations and the Hearing Board activities that are eligible for revenue sources are estimated at \$1.4 million while revenue from these source are estimated at \$1.3 million.

#### **Program Activities Eligible For Revenue Source**

##### **Permit Division Programs**

- Operating Permit Fees \$12,206,000
- New & Modified Permits \$ 5,248,000
- Title V Permit Fees \$ 2,446,000
- AB 2588 Income \$ 483,000

##### **Other Programs**

- Asbestos Fees \$ 1,188,000
- Soil Excavation Fees \$ 23,000
- Hearing Board Fees \$ 172,000
- Total \$21,767,000



**Projected Fee Revenue for FY03/03****Permit Fees**

- Operating/New  
& Modified Permit Fees      \$15,296,000
- Title V Permit Fees              \$ 1,040,000
- AB 2588 Income                  \$ 750,000

**Other Fees**

- Asbestos Fees                      \$ 1,270,000
- Soil Excavation Fees            \$ 6,000
- Hearing Board Fees              \$ 35,000
- Total                                \$18,397,000

An accurate projection of permit and other revenues is very difficult because many factors including, the local economy, and normal fluctuations in major plant activities are impossible to accurately predict. Furthermore it should be noted that this analysis of projected cost of permit program activities only includes direct cost. Indirect costs of all District programs are estimated at approximately 40 percent of direct costs, and are not recovered.

**FUTURE RECOMMENDATIONS**

In order to keep District permit fee revenues from falling below the cost of carrying out the District's permit related programs, in keeping with the recommendations of the KPMG "Cost Recovery Study", the District will continue to implement the following long-term measures:

- Permit fees will be reviewed annually and adjusted every year, as necessary to account for inflation.
- The District will continue to accurately track all employee time charges against specific programs and to use this data in the future to align District fee schedule, as closely as possible, so that fee revenues will cover the cost of related program activities.

**STATUTORY AUTHORITY FOR PROPOSED PERMIT FEE INCREASES**

Health & Safety Code Section 42311(a) authorizes the assessment of permit fees by the District. These fees may not exceed the actual cost of permit programs in the preceding year with an adjustment for the increase in the Consumer Price Index (CPI) for the California Bay Area (San Francisco, Oakland and San Jose).

In addition, Health & Safety Code Section 41512.7 establishes a statutory cap on the allowable annual percentage increase in permit fees and therefore limits the statutory authority for actual cost recovery for permit-related activities set forth in Health & Safety Code Section 42311. The 15 percent cap on annual percentage increase for authority-to-construct permits or permits to operate in subdivision (b) of Section 41512.7 impacts a local air pollution control district's ability to recover its actual costs as authorized in Section 42311, subdivision (a). This statutory limitation on the recovery of the costs of

an air pollution control permit program is especially striking when an air pollution control district discovers that the difference between current permit fee revenues and the actual cost of such permit programs is greater than 15 percent. In practice, the 15 percent annual increase limitation circumscribes existing statutory authority for a local air pollution control district to recover its “actual costs for district programs for the immediately preceding fiscal year” as set forth in Health & Safety Code Section 42311.

In conclusion, Health & Safety Code § 41512.7 limits actual cost recovery pursuant to Health & Safety Code § 42311. The staff proposal for permit fee revenues of \$16.7 million for FY 03-04 complies with the limits in Health & Safety Code § 42311, and the proposed CPI adjustment of 1.6 percent complies with the 15 percent limit in Health & Safety Code Section 41512.7.

## OVERVIEW OF RULE CHANGES

The complete text of the proposed changes to District Regulation 3, Fees, is included in Appendix A of this document in strikeout (old) and underline (new) format. The proposed amendments to the regulation and each fee schedule are summarized below:

### REGULATION 3—STANDARDS

- **Section 3-302 Fees for New and Modified Source:** Increase the filing fee for permit applications from \$250 per source to \$254 per source. Increase the minimum initial fee for an Authority to Construct from \$176 to \$179 (see various fee schedules). Increase the minimum Permit to Operate fee from \$126 to \$128 (see various fee schedules).
- **Section 3-307 Transfers:** Increase the fees for transfer of permits by \$1 from \$50 per permit to \$51 per permit and increase the maximum fee per facility from \$1000 to \$1016. An applicant who qualifies as a small business shall pay one half of these fees...\$25.50 per permit up to a maximum fee per facility of \$508.
- **Section 3-309 Duplicate Permit:** An applicant for a duplicate permit to operate shall pay a fee of ~~\$50.00~~ 51.00 per permit.
- **Section 3-311 Banking:** Any applicant who wishes to bank emissions for future use, or convert an ERC into an IERC, shall pay a filing fee of ~~\$250~~254 per source plus the initial fee given in Schedules B, C, D, E, F, H, I or K. Where more than one of these schedules is applicable to a source, the fee paid shall be the highest of the applicable schedules. Any applicant for the withdrawal of banked emissions shall pay a fee of ~~\$250~~254.
- **Section 3-312 Emission Caps And Alternate Compliance Plans:** Increase fees for emission caps and alternate compliance plans from \$632 per source to \$642 per source, and raise the maximum fee from \$6320 to \$6420.

### REGULATION 3—FEE SCHEDULES

- A 1.6% Consumer Price Index adjustment on all Fee Schedules A, B, C, D, E, F, G-1, G-2, G-3, G-4, H, I, K, L, M, P and Q.

- Schedule N: Increase the variable  $F_T$  (total amount of fees to be collected) by 1.6 percent due to the Consumer Price Index increase. This change does not require any modifications to the language of Schedule N.

## **RULE DEVELOPMENT PROCESS**

The proposed revisions to Regulation 3, Fees were discussed at a Public Workshop held at the District's office on March 21, 2003. Almost 7000 notices were sent out announcing this workshop. The notices were sent to all current permit holders, all asbestos contractors and all persons on the District's Interested Parties list. Only one person, representing the Environmental Law and Justice Clinic (ELJC), attended the workshop.

## **ASSOCIATED IMPACTS**

### **EMISSIONS IMPACTS**

There will be no direct emission increases or decreases as a result of these proposed amendments.

### **ECONOMIC IMPACTS**

Health & Safety Code § 42311, subdivision (a) provides that an air pollution control district may recover, through its schedule of annual fees, the estimated reasonable costs of district programs related to permitted stationary sources. In addition, a district may adopt, by regulation, a schedule of fees to be assessed on area-wide or indirect sources of emissions which are regulated, but for which permits are not issued -- to recover the costs of district programs related to these sources. Health & Safety Code § 42311(g).

Based on this statutory authority, the District can recover its administrative and regulatory costs for programs related to stationary, area-wide and indirect sources under its jurisdiction. Therefore, the proposed amendments to Regulation 3 - Fees, by definition, are not expected to cause or create any adverse economic impacts. The fees merely represent cost recovery for important regulatory services. Finally, the proposed amended fee regulation will enable the District to continue to provide a consistent high level of service to the affected permit holders and fee payers.

Impact on small businesses is expected to be insignificant. Most small business only operate one or two sources which generally only pay the minimum permit renewal fee. The annual permit fee for each of these sources is currently \$126; under the proposal, this fee will be raised to \$128 per source. The initial fee for a new permit will increase from \$176 to \$179.

The proposal is anticipated to maintain District revenues at or near the same level as last fiscal year.

## CALIFORNIA ENVIRONMENTAL QUALITY ACT

The California Environmental Quality Act (CEQA), Public Resources Code Section 21000 et seq., and the CEQA Guidelines, 14 CCR 15000 et seq., require a government agency, such as the BAAQMD, that undertakes or approves a discretionary project to prepare documentation addressing the potential impacts of that project on all environmental media. If an agency's approval action on a project is considered exempt, CEQA does not apply. The District's proposed fee increase is statutorily exempt from the requirements of the California Environmental Quality Act as stated in the CEQA Guidelines Section 15273: "CEQA does not apply to the establishment, modification, structuring, restructuring, or approval of rates, tolls, fares, and other charges by public agencies....." *See also* Public Resources Code Section 21800(b)(8).

## CALIFORNIA HEALTH AND SAFETY CODE

Section 40728.5 of the Health and Safety Code requires districts to assess the socioeconomic impacts of amendments to regulations that, "...will significantly affect air quality or emissions limitations." This regulatory proposal has direct costs associated with the increase in permit fees, however, does not fall within the scope of an amendment that significantly affects air quality or emissions limitations. This section, therefore, does not apply.

Under Health and Safety Code Section 40920.6, the District is required to perform an incremental cost analysis for a proposed rule. This analysis is required, "Prior to adopting rules or regulations for best available retrofit control technology pursuant to Sections 40918, 40919, 40920, and 40920.5, or for a feasible measure pursuant to Section 40914...." The purpose of this section is to identify increments of technology that meet the emission reduction objectives of the proposed rule, where possible, and to calculate the cost-effectiveness of each increment. As this proposal does change regulatory standards or impose additional emission limitations, this section is not applicable.

Section 40727.2 of the Health and Safety Code imposes new requirements on the adoption, amendment, or repeal of air district regulations. It requires a district to identify existing federal and district air pollution control requirements for the equipment or source type affected by the proposed change in district rules. The district must then note any differences between these existing requirements and the requirements imposed by the proposed change. This fee proposal does not impose a new standard, make an existing standard more stringent, or impose new or more stringent administrative requirements. Therefore, Section 40727.2 does not apply.

Pursuant to Health and Safety Code, Section 40727, regulatory amendments must meet findings of necessity, authority, clarity, consistency, non-duplication, and reference. The proposed amendments to Regulation are:

- Necessary to fund the District's efforts to attain federal and state air quality standards;
- Authorized by Health and Safety Code Sections 42311, 42311.2, 41512.7, 42364 and 40 CFR Part 70.9;
- Clear, in that the amendments are written so that the meaning can be understood by

the affected parties;

- Consistent with other District rules, and not in conflict with any state or federal law;
- Not duplicative of other statutes, rules or regulation; and
- Implements and references Health and Safety Code Sections 42311, 42311.2, 41512.7, 42364 and 40 CFR Part 70.9.

The proposed amendments have met all legal noticing requirements and have been discussed with interested parties. Staff recommends adoption of the proposed amendments.

**REGULATION 3  
FEES  
INDEX**

**3-100 GENERAL**

- 3-101 Description
- 3-102 Deleted July 12, 1989
- 3-103 Exemption, Abatement Devices
- 3-104 Deleted August 2, 1995
- 3-105 Exemption, ~~Aeration~~ Excavation of Contaminated Soil and Removal of Underground Storage Tank Operation Fees
- 3-106 Deleted December 2, 1998
- 3-107 Exemption, Sources Exempt from Permit Requirements

**3-200 DEFINITIONS**

- 3-201 Cancelled Application
- 3-202 Gasoline Dispensing Facility
- 3-203 Filing Fee
- 3-204 Initial Fee
- 3-205 Authority to Construct
- 3-206 Modification
- 3-207 Permit to Operate Fee
- 3-208 Deleted June 4, 1986
- 3-209 Small Business
- 3-210 Solvent Evaporating Source
- 3-211 Source
- 3-212 Deleted August 2, 1995
- 3-213 Major Stationary Source
- 3-214 Deleted effective March 1, 2000
- 3-215 Deleted effective March 1, 2000
- 3-216 Deleted effective March 1, 2000
- 3-217 Deleted effective March 1, 2000
- 3-218 Deleted effective March 1, 2000
- 3-219 Deleted effective March 1, 2000
- 3-220 Deleted effective March 1, 2000
- 3-321 Deleted effective March 1, 2000
- 3-222 Deleted effective March 1, 2000
- 3-223 Start-up Date
- 3-224 Permit to Operate
- 3-225 Minor Modification
- 3-226 Air Toxics "Hot Spots" Information and Assessment Act of 1987
- 3-227 Toxic Air Pollutant
- 3-228 Deleted December 2, 1998
- 3-229 Deleted December 2, 1998
- 3-230 Deleted December 2, 1998
- 3-231 Deleted December 2, 1998
- 3-232 Deleted December 2, 1998
- 3-233 Deleted December 2, 1998
- 3-234 Deleted December 2, 1998
- 3-235 Deleted December 2, 1998
- 3-236 Deleted December 2, 1998
- 3-237 PM<sub>10</sub>

### **3-300 STANDARDS**

- 3-301 Hearing Board Fees
- 3-302 Fees for New and Modified Sources
- 3-303 Back Fees
- 3-304 Replacement
- 3-305 Cancellation or Withdrawal
- 3-306 Change in Conditions
- 3-307 Transfers
- 3-308 Change of Location
- 3-309 Duplicate Permit
- 3-310 Fee for Constructing Without a Permit
- 3-311 Banking
- 3-312 Emission Caps and Alternative Compliance Plans
- 3-313 Deleted May 19, 1999
- 3-314 Deleted August 2, 1995
- 3-315 Costs of Environmental Documentation
- 3-316 Deleted June 6, 1990
- 3-317 Asbestos Operation Fee
- 3-318 Public Notice Fee, Schools
- 3-319 Major Stationary Source Fees
- 3-320 Toxic Inventory Fees
- 3-321 Deleted December 2, 1998
- 3-322 ~~Aeration~~ Excavation of Contaminated Soil and Removal of Underground Storage Tank Operation Fees
- 3-323 Pre-Certification Fees
- 3-324 Deleted June 7, 2000
- 3-325 Deleted December 2, 1998
- 3-326 Deleted December 2, 1998
- 3-327 Permit to Operate, Renewal Fees
- 3-328 Fee for OEHHA Risk Assessment Reviews

### **3-400 ADMINISTRATIVE REQUIREMENTS**

- 3-401 Permits
- 3-402 Single Anniversary Date
- 3-403 Change in Operating Parameters
- 3-404 Deleted June 7, 2000
- 3-405 Fees Not Paid
- 3-406 Deleted June 4, 1986
- 3-407 Deleted August 2, 1995
- 3-408 Permit to Operate Valid for 12 Months
- 3-409 Deleted June 7, 2000
- 3-410 Deleted August 2, 1995
- 3-411 Advance Deposit of Funds
- 3-412 Deleted December 2, 1998
- 3-413 Toxic "Hot Spots" Information and Assessment Act Revenues
- 3-414 Deleted December 2, 1998
- 3-415 Failure to Pay - Further Actions
- 3-416 Adjustment of Fees

### **3-500 MONITORING AND RECORDS (None Included)**

### **3-600 MANUAL OF PROCEDURES (None Included)**

### **FEE SCHEDULES**

#### SCHEDULE A HEARING BOARD FEES

Bay Area Air Quality Management District

June 5, 2002

SCHEDULE B COMBUSTION OF FUEL  
SCHEDULE C STATIONARY CONTAINERS FOR THE STORAGE OF ORGANIC LIQUIDS  
SCHEDULE D GASOLINE TRANSFER AT GASOLINE DISPENSING FACILITIES, BULK  
PLANTS AND TERMINALS  
SCHEDULE E SOLVENT EVAPORATING SOURCES  
SCHEDULE F MISCELLANEOUS SOURCES  
SCHEDULE H SEMICONDUCTOR AND RELATED OPERATIONS  
SCHEDULE I DRY CLEANERS  
SCHEDULE J DELETED February 19, 1992  
SCHEDULE K SOLID WASTE DISPOSAL SITES  
SCHEDULE L ASBESTOS OPERATIONS  
SCHEDULE M MAJOR STATIONARY SOURCE FEES  
SCHEDULE N TOXIC INVENTORY FEES  
SCHEDULE O DELETED May 19, 1999  
SCHEDULE P MAJOR FACILITY REVIEW FEES  
SCHEDULE Q ~~AERATION~~ EXCAVATION OF CONTAMINATED SOIL AND REMOVAL OF  
UNDERGROUND STORAGE TANKS



## REGULATION 3 FEES

(Adopted June 18, 1980)

### 3-100 GENERAL

**3-101 Description:** This regulation establishes fees to be charged for Hearing Board filings, for permits, banking, experimental exemptions, renewal of permits, costs of environmental documentation, asbestos operations, air toxics inventories, and soil ~~aeration~~ excavation and underground tank removals.

*(Amended 7/6/83; 11/2/83; 2/21/90; 12/16/92; 8/2/95; 12/2/98)*

**3-102 Deleted July 12, 1989**

**3-103 Exemption, Abatement Devices:** Installation, modification, or replacement of abatement devices on existing sources are subject to fees pursuant to Section 3-302.3. All abatement devices are exempt from annual permit renewal fees. However, emissions from abatement devices, including any secondary emissions, shall be included in facility-wide emissions calculations when determining the applicability of and the fees associated with Schedules M, N, and P.

*(Amended 6/4/86; 7/1/98; 6/7/00)*

**3-104 Deleted August 2, 1995**

**3-105 Exemption, ~~Aeration~~ Excavation of Contaminated Soil and Removal of Underground Storage Tank Operation Fees:** Fees shall not be required, pursuant to Section 3-322, for operations associated with the ~~aeration~~ excavation of contaminated soil and the removal of underground storage tanks if one of the following is met:

105.1 The tank removal operation is being conducted within a jurisdiction where the APCO has determined that a public authority has a program equivalent to the District program and persons conducting the operations have met all the requirements of the public authority.

105.2 Persons submitting a written notification for a given site have obtained an Authority to Construct or Permit to Operate in accordance with Regulation 2, Rule 1, Section 301 or 302. Evidence of the Authority to Construct or the Permit to Operate must be provided with any notification ~~as~~ required by Regulation 8, Rule 40, ~~Section 401 or 402.~~

*(Adopted January 5, 1994)*

**3-106 Deleted December 2, 1998**

**3-107 Exemption, Sources Exempt from Permit Requirements:** Any source that is exempt from permit requirements pursuant to Regulation 2, Rule 1, Sections 103 through 128 is exempt from permit fees. However, emissions from exempt sources shall be included in facility-wide emissions calculations when determining the applicability of and the fees associated with Schedules M, N, and P.

*(Adopted June 7, 2000)*

### 3-200 DEFINITIONS

**3-201 Cancelled Application:** Any application which has been withdrawn by the applicant or cancelled by the APCO for failure to pay fees or to provide the information requested to make an application complete.

*(Amended 6/4/86; 4/6/88)*

**3-202 Gasoline Dispensing Facility:** Any stationary facility which dispenses gasoline directly into the fuel tanks of vehicles, such as motor vehicles, aircraft or boats. The facility shall be treated as a single source which includes all necessary equipment for the exclusive use of the facility, such as nozzles, dispensers, pumps, vapor return lines, plumbing and storage tanks.

*(Amended February 20, 1985)*

**3-203 Filing Fee:** A fixed fee for each source in an authority to construct.

- (Amended June 4, 1986)*
- 3-204 Initial Fee:** The fee required for each new or modified source based on the type and size of the source. The fee is applicable to new and modified sources seeking to obtain an authority to construct. Operation of a new or modified source is not allowed until the permit to operate fee is paid.
- (Amended June 4, 1986)*
- 3-205 Authority to Construct:** Written authorization from the APCO, pursuant to Section 2-1-301, for a source to be constructed or modified or for a source whose emissions will be reduced by the construction or modification of an abatement device.
- (Amended June 4, 1986)*
- 3-206 Modification:** See Section 1-217 of Regulation 1.
- 3-207 Permit to Operate Fee:** The fee required for the annual renewal of a permit to operate or for the first year of operation (or prorated portion thereof) of a new or modified source which received an authority to construct.
- (Amended 6/4/86; 7/15/87; 12/2/98; 6/7/00)*
- 3-208 Deleted June 4, 1986**
- 3-209 Small Business:** A business with no more than 10 employees and gross annual income of no more than \$500,000 that is not an affiliate of a non-small business.
- (Amended 6/4/86; 6/6/90; 6/7/00)*
- 3-210 Solvent Evaporating Source:** Any source utilizing organic solvent, as part of a process in which evaporation of the solvent is a necessary step. Such processes include, but are not limited to, solvent cleaning operations, painting and surface coating, rotogravure coating and printing, flexographic printing, adhesive laminating, etc. Manufacture or mixing of solvents or surface coatings is not included.
- (Amended July 3, 1991)*
- 3-211 Source:** See Section 1-227 of Regulation 1.
- 3-212 Deleted August 2, 1995**
- 3-213 Major Stationary Source:** For the purpose of Schedule M, a major stationary source shall be any District permitted plant, building, structure, stationary facility or group of facilities under the same ownership, leasehold, or operator which, in the base calendar year, emitted to the atmosphere organic compounds, oxides of nitrogen (expressed as nitrogen dioxide), oxides of sulfur (expressed as sulfur dioxide), or PM<sub>10</sub> in an amount calculated by the APCO equal to or exceeding 50 tons per year.
- (Adopted 11/2/83; Amended 2/21/90; 6/6/90; 8/2/95; 6/7/00)*
- 3-214 Deleted effective March 1, 2000** *(Amended 10/20/99)*
- 3-215 Deleted effective March 1, 2000** *(Amended 10/20/99)*
- 3-216 Deleted effective March 1, 2000** *(Amended 10/20/99)*
- 3-217 Deleted effective March 1, 2000** *(Amended 10/20/99)*
- 3-218 Deleted effective March 1, 2000** *(Amended 10/20/99)*
- 3-219 Deleted effective March 1, 2000** *(Amended 10/20/99)*
- 3-220 Deleted effective March 1, 2000** *(Amended 10/20/99)*
- 3-221 Deleted effective March 1, 2000** *(Amended 10/20/99)*
- 3-222 Deleted effective March 1, 2000** *(Amended 10/20/99)*
- 3-223 Start-up Date:** Date when new or modified equipment under an authority to construct begins operating. The holder of an authority to construct is required to notify the APCO of this date at least 3 days in advance. For new sources, or modified sources whose authorities to construct have expired, operating fees are charged from the startup date.
- (Adopted 6/4/86; Amended 6/6/90)*
- 3-224 Permit to Operate:** Written authorization from the APCO pursuant to Section 2-1-302.
- (Adopted 6/4/86; Amended 6/7/00)*
- 3-225 Minor Modification:** Any physical change or alteration to a source listed on Schedules G-3 or G-4 that will not increase emissions of any air contaminant. Such modifications may include alterations to improve energy and operational efficiency and those that reduce emissions. Alterations to increase actual or maximum

production capacity shall not be considered minor modifications. Final determination of the applicability of this section shall be made by the APCO.

*(Adopted June 6, 1990)*

- 3-226 Air Toxics "Hot Spots" Information and Assessment Act of 1987:** The Air Toxics "Hot Spots" Information and Assessment Act of 1987 directs the California Air Resources Board and the Air Quality Management Districts to collect information from industry on emissions of potentially toxic air pollutants and to inform the public about such emissions and their impact on public health. It also directs the Air Quality Management District to collect fees sufficient to cover the necessary state and District costs of implementing the program.

*(Adopted October 21, 1992)*

- 3-227 Toxic Air Pollutant:** For the purpose of this fee regulation, a "toxic air pollutant" is any air pollutant that is included in the District's list of Toxic Air Pollutants and Emission Weighting Factors (Schedule N).

*(Adopted October 21, 1992)*

**3-228 Deleted December 2, 1998**

**3-229 Deleted December 2, 1998**

**3-230 Deleted December 2, 1998**

**3-231 Deleted December 2, 1998**

**3-232 Deleted December 2, 1998**

**3-233 Deleted December 2, 1998**

**3-234 Deleted December 2, 1998**

**3-235 Deleted December 2, 1998**

**3-236 Deleted December 2, 1998**

**3-237 PM<sub>10</sub>:** See Section 2-1-229 of Regulation 2, Rule 1.

*(Adopted June 7, 2000)*

### **3-300 STANDARDS**

- 3-301 Hearing Board Fees:** Applicants for variances or appeals or those seeking to revoke or modify variances or abatement orders or to rehear a Hearing Board decision shall pay the applicable fees, including excess emission fees, set forth in Schedule A.

*(Amended June 7, 2000)*

- 3-302 Fees for New and Modified Sources:** Applicants for authorities to construct and permits to operate new sources shall pay a filing fee of ~~\$250~~254 per source plus the initial fee and the permit to operate fee given in Schedules B, C, D, E, F, H, I or K. Applicants for authorities to construct and permits to operate modified sources shall pay a filing fee of ~~\$250~~254 per source plus the initial fee and any incremental increase in permit to operate fees given in Schedules B, C, D, E, F, H, I or K. Where more than one of the schedules is applicable to a source, the fee paid shall be the highest of the applicable schedules. Except for sources covered by Schedules D.1. and H, the size to be used for a source when applying the schedules shall be the maximum size the source will have after the construction or modification.

302.1 An applicant who qualifies as a small business shall pay one half of the filing fee and, if the source falls under schedules B, C, D.3, E, F, H, I or K, one half of the initial fee and the full permit to operate fee. If the source falls under schedule D.1, the applicant shall pay the full filing fee, the full initial fee and the permit to operate fee.

302.2 Deleted July 3, 1991

302.3 Applicants for an authority to construct and permit to operate abatement devices where there is no other modification to the source shall pay a ~~\$250~~254 filing fee and an initial fee equivalent to 50% of the initial fee for the source being abated. For abatement devices abating more than one source, the initial fee shall be 50% of the initial fee for the source having the highest initial fee.

302.4 Applicants for a Permit to Operate reactivated, previously permitted equipment shall pay the full filing, initial, and permit fees.

302.5 Applicants for minor modifications to permitted sources subject to Schedules G-3 or G-4 shall pay filing fees and the initial and permit to operate fees specified under Schedule G-2. Permit renewal fees will continue to be charged under Schedules G-3 and G-4.

*(Amended 5/19/82; 7/6/83; 6/4/86; 7/15/87; 6/6/90; 7/3/91; 6/15/94; 10/8/97; 7/1/98; 5/19/99; 6/7/00; 6/6/01, 5/1/02)*

**3-303 Back Fees:** An applicant required to obtain a permit to operate existing equipment in accordance with District regulations shall pay back fees equal to the permit to operate fees given in the appropriate Schedule (B, C, D, E, F, H, I or K) prorated from the effective date of permit requirements. Where more than one of these schedules is applicable to a source, the fee paid shall be the highest of the applicable schedules. The maximum back fee shall not exceed five years' permit fees.

*(Amended 5/19/82; 7/6/83; 6/4/86; 7/15/87, 6/6/90; 7/3/91; 10/8/97)*

**3-304 Replacement:** Applicants who are replacing sources with identical equipment shall pay only the filing fee. An application for replacement of components with non-identical components shall pay fees for a change in conditions. Applicants who are replacing sources or equipment with non-identical equipment will pay the filing fee plus the initial fee and the permit to operate fee.

*(Amended 6/4/86; 11/15/00)*

**3-305 Cancellation or Withdrawal:** There will be no refund of initial and filing fees if an application is cancelled or withdrawn. However, if an application for identical equipment is submitted within six months of the date of cancellation or withdrawal, the initial fee will be credited in full against the fee for the new application.

*(Amended 7/6/83; 4/6/88; 10/8/97)*

**3-306 Change in Conditions:** If an applicant applies to change the conditions on an existing authority to construct or permit to operate, the applicant will pay the following fees. There will be no change in anniversary date.

306.1 Administrative Condition Changes: An applicant applying for an administrative change in permit conditions shall pay a fee equal to the filing fee for a single source, provided the following criteria are met:

- 1.1 The condition change applies to a single source or a group of sources with shared permit conditions.
- 1.2 The condition change does not subject the source(s) to any District Regulations or requirements that were not previously applicable.
- 1.3 The condition change does not result in any increase in emissions of POC, NPOC, NO<sub>x</sub>, CO, SO<sub>2</sub>, or PM<sub>10</sub> at any source or the emission of a toxic air contaminant above the trigger levels identified in Regulation 2, Rule 1, Table 2-1-316.
- 1.4 The condition change does not require a public notice.

306.2 Other Condition Changes: Applicant shall pay the filing and initial fees required for new and modified equipment under Section 3-302. If the condition change will result in higher permit to operate fees, the applicant shall also pay any incremental increases in permit to operate fees.

*(Amended 7/6/83; 6/4/86; 6/6/90; 10/8/97; 6/7/00)*

**3-307 Transfers:** The owner/operator of record is the person to whom a permit is issued or, if no permit has yet been issued to a facility, the person who applied for a permit. Permits are valid only for the owner/operator of record. Permits are re-issued to the new owner/operator of record with no change in expiration dates. An applicant for a transfer of a permit to operate shall pay a fee of ~~\$50.00~~\$51 per permit up to a maximum of ~~\$4000~~1016 for a facility. An applicant who qualifies as a small business shall pay a fee of ~~\$25.00~~25.50 per permit up to a maximum of ~~\$500~~508 for a facility.

*(Amended 2/20/85; 6/4/86; 11/5/86; 4/6/88; 10/8/97, 5/1/02)*

**3-308 Change of Location:** An applicant who wishes to move an existing source which has a permit to operate shall pay no fee if the move is on the same facility. The applicant shall pay the filing fee, the initial fee and permit to operate fee if the move is not on the same facility.

*(Amended 7/6/83; 6/4/86)*

**3-309 Duplicate Permit:** An applicant for a duplicate permit to operate shall pay a fee of

\$50-0051 per permit.

*(Amended 5/19/99, 5/1/02)*

**3-310 Fee for Constructing Without a Permit:** An applicant for an authority to construct and a permit to operate a source which has been constructed without an authority to construct shall pay the following fees:

310.1 Sources subject to permit requirements on the date of initial operation shall pay fees for new construction pursuant to Section 3-302, any back fees pursuant to Section 3-303 and a late fee equal to 100% of the initial fee. A source falling under Schedule D.1 that is not required to pay an initial fee shall pay a fee equal to 100% of the filing fee.

310.2 Sources previously exempt from permit requirements which lose their exemption due to changes in District, state, or federal regulations shall pay a permit to operate fee for the coming year and any back fees pursuant to Section 3-303.

310.3 Sources previously exempt from permit requirements which lose their exemption due to a change in the manner or mode of operation, such as an increased throughput, shall pay fees for new construction pursuant to Section 3-302. In addition, sources applying for permits after commencing operation in a non-exempt mode shall also pay a late fee equal to 100% of the initial fee and any back fees pursuant to Section 3-303.

*(Amended 7/6/83; 4/18/84; 6/4/86; 6/6/90; 7/3/91; 8/2/95; 10/8/97)*

**3-311 Banking:** Any applicant who wishes to bank emissions for future use, or convert an ERC into an IERC, shall pay a filing fee of ~~\$250~~254 per source plus the initial fee given in Schedules B, C, D, E, F, H, I or K. Where more than one of these schedules is applicable to a source, the fee paid shall be the highest of the applicable schedules. Any applicant for the withdrawal of banked emissions shall pay a fee of ~~\$250~~254.

*(Amended 7/6/83; 6/4/86; 7/15/87; 7/3/91; 6/15/94; 7/1/98; 5/19/99; 6/7/00; 6/6/01, 5/1/02)*

**3-312 Emission Caps and Alternative Compliance Plans:** Any facility which elects to use an alternative compliance plan contained in:

312.1 Regulation 8 ("bubble") to comply with a District emission limitation or to use an annual or monthly emission limit to acquire a permit in accordance with the provisions of Regulation 2, Rule 2, shall pay an additional annual fee equal to fifteen percent of the total plant permit to operate fee.

312.2 Regulation 2, Rule 9 shall pay an annual fee of ~~\$63264~~2642 for each source included in the alternative compliance plan, not to exceed ~~\$632064~~206420.

*(Adopted 5/19/82; Amended 6/4/86; 5/19/99; 6/7/00; 6/6/01, 5/1/02)*

**3-313 Deleted May 19, 1999**

**3-314 Deleted August 2, 1995**

**3-315 Costs of Environmental Documentation:** An applicant for an Authority to Construct a project which is subject to review under the California Environmental Quality Act (Public Resources Code, Section 21000, et seq.) shall pay, in addition to the fees required under Section 3-302 and in any applicable schedule, the District's costs of performing all environmental evaluation required pursuant to the California Environmental Quality Act, the District's costs in preparing any environmental study or Environmental Impact Report (including the costs of any outside consulting assistance which the District may employ in connection with the preparation of any such study or report), as well as the District's reasonable internal costs (including overhead) of processing and reviewing the required environmental documentation.

*(Adopted 12/18/85; Amended 5/1/02)*

**3-316 Deleted June 6, 1990**

**3-317 Asbestos Operation Fees:** After July 1, 1988, persons submitting a written plan, as required by Regulation 11, Rule 2, Section 401, to conduct an asbestos operation shall pay the fee given in Schedule L.

*(Adopted 7/6/88; Renumbered 9/7/88; Amended 8/2/95)*

**3-318 Public Notice Fee, Schools:** Pursuant to Section 42301.6(b) of the Health and Safety Code, an applicant for an authority to construct or permit to operate subject to

the public notice requirements of Regulation 2-1-412 shall pay, in addition to the fees required under Section 3-302 and in any applicable schedule;

318.1 A minimum fee of ~~\$900~~\$14 per application, and

318.2 The District's cost exceeding ~~\$900~~\$14 of preparing and distributing the public notice to the affected persons specified in Regulation 2-1-412.

*(Adopted 11/1/89; Amended 10/8/97; 7/1/98; 5/19/99; 6/7/00)*

**3-319 Major Stationary Source Fees:** Any major stationary source emitting 50 tons per year of organic compounds, sulfur oxides, nitrogen oxides, or PM<sub>10</sub> shall pay a fee based on Schedule M. This fee is in addition to permit and other fees otherwise authorized to be collected from such facilities and shall be included as part of the annual permit renewal fees.

*(Adopted 6/6/90; Amended 8/2/95; 6/7/00)*

**3-320 Toxic Inventory Fees:** Any stationary source that emits one or more potentially toxic air pollutants (listed in Schedule N) in quantities above a minimum threshold level shall pay an annual fee based on Schedule N. This fee will be in addition to permit to operate and other fees otherwise authorized to be collected from such facilities.

320.1 An applicant who qualifies as a small business under Regulation 3-209 shall pay a Toxic Inventory Fee as set out in Schedule N up to a maximum fee of ~~\$5,750~~\$,842 per year.

*(Adopted 10/21/92; Amended 5/19/99)*

**3-321 Deleted December 2, 1998**

**3-322 ~~Aeration Excavation~~ of Contaminated Soil and Removal of Underground Storage Tank Operation Fees:** Persons submitting a written notification for a given site to conduct either ~~aeration excavation~~ of contaminated soil or removal of underground storage tanks as required by Regulation 8, Rule 40, Section 401, ~~or 402, 403 or 405~~ shall pay a fee based on Schedule Q.

*(Adopted 1/5/94; Amended 8/2/95)*

**3-323 Pre-Certification Fees:** An applicant seeking to pre-certify a source, in accordance with Regulation 2, Rule 1, Section 415, shall pay the filing fee, initial fee and permit to operate fee given in the appropriate schedule.

*(Adopted June 7, 1995)*

**3-324 Deleted June 7, 2000**

**3-325 Deleted December 2, 1998**

**3-326 Deleted December 2, 1998**

**3-327 Permit to Operate, Renewal Fees:** After the expiration of the initial permit to operate, the permit to operate shall be renewed on an annual basis. The fee required for the annual renewal of a permit to operate is the permit to operate fee listed in Schedules B, C, D, E, F, H, I and K. Where more than one of the schedules is applicable to a source, the fee paid shall be the highest of the applicable schedules. This annual renewal fee is applicable to all sources required to obtain permits to operate in accordance with District regulations.

*(Adopted June 7, 2000)*

**3-328 Fee for OEHHA Risk Assessment Reviews:** Any facility that submits a health risk assessment to the District in accordance with Section 44361 of the California Health and Safety Code shall pay any fee requested by the State Office of Environmental Health Hazard Assessment (OEHHA) for reimbursement of that agency's costs incurred in reviewing the risk assessment.

*(Adopted June 7, 2000)*

### **3-400 ADMINISTRATIVE REQUIREMENTS**

**3-401 Permits:** Definitions, standards, and conditions contained in Regulation 2, Permits, are applicable to this regulation.

**3-402 Single Anniversary Date:** The APCO may assign a single anniversary date to a facility on which all its renewable permits to operate expire and will require renewal. Fees will be prorated to compensate for different time periods resulting from change in anniversary date.

- 3-403**      **Change in Operating Parameters:** See Section 2-1-404 of Regulation 2, Rule 1.  
**3-404**      **Deleted June 7, 2000**  
**3-405**      **Fees Not Paid:** If an applicant or owner/operator fails to pay the fees specified on the invoice by the due date, the following procedure(s) shall apply:
- 405.1 Authority to Construct: The application will be cancelled, but can be reactivated upon payment of fees.
- 405.2 New Permit to Operate: The Permit to Operate shall not be issued, and the facility will be notified that operation, including startup, is not authorized.
- 2.1 Fees received during the first 30 days following the due date must include an additional late fee equal to 50 percent of an annual Permit to Operate Fee.
- 2.2 Fees received more than 30 days after the due date must include an additional late fee equal to 100 percent of an annual Permit to Operate Fee.
- 405.3 Renewal of Permit to Operate: The facility will be notified that the permit has lapsed and that further operation is no longer authorized. Reinstatement of lapsed Permits to Operate will require the payment of reinstatement fees in addition to the Permit to Operate Fee. Permit to Operate Fees shall be calculated using fee schedules in effect at either the time of reinstatement or at the time additional fees are assessed under subsection 3-405.2.
- 3.1 Fees received during the first 30 days following the due date must include the Permit to Operate Fee for the period covered on the invoice plus a reinstatement fee equal to 50 percent of the annual Permit to Operate Fee.
- 3.2 Fees received more than 30 days after the due date, but less than one year after the due date, must include the Permit to Operate Fee for the period covered by the invoice plus a reinstatement fee equal to 100 percent of the annual Permit to Operate Fee.
- 3.3 Fees received more than one year after the due date must include the Permit to Operate Fee, prorated from the date the permit expired to the current permit anniversary date, plus a reinstatement fee equal to 150 percent of the annual Permit to Operate Fee.
- 405.4 Other Fees: Persons who have not paid the fee by the invoice due date, shall pay a late fee in addition to the original invoiced fee. Fees shall be calculated using fee schedules in effect at the time of the fees' original determination.
- 4.1 Fees received more than 30 days after the invoice due date must include a late fee of 10 percent of the original invoiced fee.
- (Amended 7/6/83; 6/4/86; 11/5/86; 2/15/89; 6/6/90; 7/3/91; 8/2/95; 12/2/98)*
- 3-406**      **Deleted June 4, 1986**  
**3-407**      **Deleted August 2, 1995**  
**3-408**      **Permit to Operate Valid for 12 Months:** A Permit to Operate is valid for 12 months from the date of issuance or other time period as approved by the APCO.
- (Amended 6/4/86; Amended 6/7/00)*
- 3-409**      **Deleted June 7, 2000**  
**3-410**      **Deleted August 2, 1995**  
**3-411**      **Advance Deposit of Funds:** The APCO may require that at the time of the filing of an application for an Authority to Construct for a project for which the District is a lead agency under the California Environmental Quality Act (Public Resources Code, Section 21000, et seq.), the applicant shall make an advance deposit of funds, in an amount to be specified by the APCO, to cover the costs which the District estimates to incur in connection with the District's performance of its environmental evaluation and the preparation of any required environmental documentation. In the event the APCO requires such an estimated advance payment to be made, the applicant will be provided with a full accounting of the costs actually incurred by the District in connection with the District's performance of its environmental evaluation and the preparation of any required environmental documentation.
- (Adopted 12/18/85; Amended 8/2/95)*

**3-412 Deleted December 2, 1998**

**3-413 Toxic "Hot Spots" Information and Assessment Act Revenues:** No later than 120 days after the adoption of this regulation, the APCO shall transmit to the California Air Resources Board, for deposit into the Air Toxics "Hot Spots" Information and Assessment Fund, the revenues determined by the ARB to be the District's share of statewide Air Toxics "Hot Spot" Information and Assessment Act expenses.

*(Adopted October 21, 1992)*

**3-414 Deleted December 2, 1998**

**3-415 Failure to Pay - Further Actions:** When an applicant or owner/operator fails to pay the fees specified on the invoice by the due date, the APCO may take the following actions against the applicant or owner/operator:

415.1 Issuance of a Notice to Comply.

415.2 Issuance of a Notice of Violation.

415.3 Revocation of an existing Permit to Operate. The APCO shall initiate proceedings to revoke permits to operate for any person whose for more than one month. The revocation process shall continue until payment in full is made or until permits are revoked.

415.4 The withholding of any other District services as deemed appropriate until payment in full is made.

*(Adopted 8/2/95; Amended 12/2/98)*

**3-416 Adjustment of Fees:** The APCO or designees may, upon finding administrative error by District staff in the calculation, imposition, noticing, invoicing, and/or collection of any fee set forth in this rule, rescind, reduce, increase, or modify the fee. A request for such relief from an administrative error, accompanied by a statement of why such relief should be granted, must be received within two years from the date of payment.

*(Adopted October 8, 1997)*





**SCHEDULE A  
HEARING BOARD FEES<sup>1</sup>**

Established by the Board of Directors December 7, 1977 Resolution No. 1046  
(Code section references are to the California Health & Safety Code, unless otherwise indicated)

		<b>Large Companies</b>	<b>Small Business</b>	<b>Third Party</b>
1.	For each application for variance exceeding 90 days, in accordance with §42350, including applications on behalf of a class of applicants, which meet the requirements of the Hearing Board Rules for a valid and proper class action for variance ..... Plus, for each hearing in addition to the first hearing necessary to dispose of said variance application in accordance with §42350, the additional sum of .....	\$1100 <u>118</u> \$550 <u>59</u>	\$164 <u>167</u> \$5556	
2.	For each application for variance not exceeding 90 days, in accordance with §42350, including applications on behalf of a class of applicants, which meet the requirements of the Hearing Board Rules for a valid and proper class action for variance ..... Plus, for each hearing in addition to the first hearing necessary to dispose of said variance application, in accordance with §42350, the additional sum of .....	\$660 671 \$330 <u>335</u>	\$164 <u>167</u> \$5556	
3.	For each application to modify a variance in accordance with §42356 ... Plus, for each hearing in addition to the first hearing on said application to modify a variance, in accordance with §42345, necessary to dispose of the application, the additional sum of.....	\$440 <u>447</u> \$330 <u>335</u>	\$5556 \$5556	
4.	For each application to extend a variance, in accordance with §42357 .. Plus, for each hearing in addition to the first hearing on an application to extend a variance, in accordance with §42357, necessary to dispose of the application, the additional sum of.....	\$440 <u>447</u> \$330 <u>335</u>	\$5556 \$5556	
5.	For each application to revoke a variance .....	\$660 <u>671</u>	\$5556	
6.	For each application for approval of a Schedule of Increments of Progress in accordance with §41703.....	\$440 <u>447</u>	\$5556	
7.	For each application for variance in accordance with §41703, which exceeds 90 days ..... Plus, for each hearing in addition to the first hearing on said application for variance in accordance with §41703, the additional sum of .....	\$1100 <u>118</u> \$550 <u>569</u>	\$164 <u>167</u> \$5556	
8.	For each application for variance in accordance with §41703, not to exceed 90 days ..... Plus, for each hearing in addition to the hearing on said application for a variance in accordance with §41703, the additional sum of .....	\$660 671 \$330 <u>335</u>	\$164 <u>167</u> \$5556	

		<b>Large Companies</b>	<b>Small Business</b>	<b>Third Party</b>
9.	For each Appeal (Permit, Banking, Title V).....	\$ <u>1100</u> <u>118</u> per hearing day	\$ <u>550</u> <u>559</u> per hearing day	\$ <u>550</u> <u>559</u> for entire appeal period
10.	For each application for intervention in accordance with Hearing Board Rules §§2.3, 3.46 & 4.6.....	\$ <u>550</u> <u>559</u> per hearing day	\$ <u>110</u> <u>112</u>	\$ <u>275</u> for entire period
11.	For each application to Modify or Terminate an abatement order .....	\$ <u>1100</u> <u>118</u> per hearing day	\$ <u>550</u> <u>559</u> per hearing day	
12.	For each application for an interim variance in accordance with §42351	\$ <u>550</u> <u>559</u>	\$ <u>110</u> <u>112</u>	
13.	For each application for an emergency variance in accordance with §42359.5.....	\$ <u>275</u> <u>279</u>	\$ <u>5556</u>	
14.	For each application to rehear a Hearing Board decision in accordance with §40861 .....	100% of previous fee charged	100% of previous fee charged	
15.	Excess emission fees.....	See Attachment I	See Attachment I	
16.	Miscellaneous filing fee for any hearing not covered above	\$ <u>550</u> <u>559</u>	\$ <u>164</u> <u>167</u>	\$ <u>164</u> <u>167</u>
17.	For each published Notice of Public Hearing .....	Cost of Publication	\$0	\$0
18.	Court Reporter Fee ( <u>to be paid only if Court Reporter required for hearing</u> ) .....	\$ <u>110</u> <u>112</u> or cost per day if hearing solely dedicated to one Docket	\$0	\$0

NOTE 1 Any person who certifies under penalty of perjury that payment of the foregoing fees will cause an unreasonable hardship, may be excused from the payment of fees by order of the Hearing Board on that account.

(Amended 10/8/97; 5/19/99; 6/7/00; 6/6/01, 5/1/02)

**SCHEDULE A  
ATTACHMENT I  
EXCESS EMISSION FEE**

**A. General**

- (1) Each applicant or petitioner for a variance from these Rules and Regulations shall pay to the Clerk or Deputy Clerk of the Hearing Board, in addition to the other filing fees required in Schedule A, an emission fee based on the total weight of emissions discharged, per source or product, other than those described in division (B) below, during the variance period in excess of that allowed by these rules in accordance with the schedule set forth in Table I.
- (2) Where the total weight of emission discharged cannot be easily calculated, the petitioner shall work in concert with District staff to establish the amount of excess emissions to be paid.
- (3) In the event that more than one rule limiting the discharge of the same contaminant is violated, the excess emission fee shall consist of the fee for violation which will result in the payment of the greatest sum. For the purposes of this subdivision, opacity rules and particulate mass emissions shall not be considered rules limiting the discharge of the same contaminant.

**B. Excess Visible Emission Fee**

Each applicant or petitioner for a variance from Regulation 6 or Health and Safety Code Section 41701 shall pay to the Clerk or Deputy Clerk of the Hearing Board, in addition to the filing fees required in Schedule A and the excess emission fees required in (A) above (if any), an emission fee based on the difference between the percent opacity allowed by Regulation 6 and the percent opacity of the emissions allowed from the source or sources operating under the variance, in accordance with the schedule set forth in Table II.

In the event that an applicant or petitioner is exempt from the provisions of Regulation 6, the applicant or petitioner shall pay a fee calculated as described herein above, but such fee shall be calculated based upon the difference between the opacity allowed under the variance and the opacity allowed under the provisions of Health and Safety Code Section 41701, in accordance with the schedule set forth in Table II.

**C. Applicability**

The provisions of subdivision (A) shall apply ~~only to those rules or permit conditions that specify quantitative emission limits~~ to all variances that generate excess emissions.

**D. Fee Determination**

- (1) The excess emission fees shall be calculated by the petitioner based upon the requested number of days of operation under variance multiplied by the expected excess emissions as set forth in subdivisions (A) and (B) above. The calculations and proposed fees shall be set forth in the petition.
- (2) The Hearing Board may adjust the excess emission fee required by subdivisions (A) and (B) of this rule based on evidence regarding emissions presented at the time of the hearing.

#### **E. Small Businesses**

- (1) A small business shall be assessed twenty percent (20%) of the fees required by subdivisions (A) and (B), whichever is applicable. "Small business" is defined in the Fee Regulation.
- (2) Request for exception as a small business shall be made by the petitioner under penalty of perjury on a declaration form provided by the Executive Officer which shall be submitted to the Clerk or Deputy Clerk of the Hearing Board at the time of filing a petition for variance.

#### **F. Group, Class and Product Variance Fees**

Each petitioner included in a petition for a group, class or product variance shall pay the filing fee specified in Schedule A, and the excess emission fees specified in subdivisions (A) and (B), whichever is applicable.

#### **G. Adjustment of Fees**

If after the term of a variance for which emission fees have been paid, petitioner can establish, to the satisfaction of the Executive Officer/APCO, that emissions were actually less than those upon which the fee was based, a pro rata refund shall be made.

#### **H. Fee Payment/Variance Invalidation**

- (1) Excess emission fees required by subdivisions (A) and (B), based on an estimate provided during the variance Hearing, are due and payable within fifteen (15) days of the granting of the variance. The petitioner shall be notified in writing of any adjustment to the amount of excess emission fees due, following District staff's verification of the estimated emissions. Fee payments to be made as a result of an adjustment are due and payable within fifteen (15) days of notification of the amount due.
- (2) Failure to pay the excess emission fees required by subdivisions (A) and (B) within fifteen (15) days of notification that a fee is due shall automatically invalidate the variance. Such notification may be given by personal service or by deposit, postpaid, in the United States mail and shall be due fifteen (15) days from the date of personal service or mailing. For the purpose of this rule, the fee payment shall be considered to be received by the District if it is postmarked by the United States Postal Service on or before the expiration date stated on the billing notice. If the expiration date falls on a Saturday, Sunday, or a state holiday, the fee payment may be postmarked on the next business day following the Saturday, Sunday, or the state holiday with the same effect as if it had been postmarked on the expiration date.

**TABLE I  
SCHEDULE OF EXCESS EMISSIONS FEES**

Air Contaminants	All at <del>\$4.05</del> <u>1.07</u> Per Pound
Organic gases, except methane and those containing sulfur Carbon Monoxide Oxides of nitrogen (expressed as nitrogen dioxide) Gaseous sulfur compounds (expressed as sulfur dioxide) Particulate matter	
Toxic Air Contaminants	All at <del>\$5.25</del> <u>5.33</u> Per Pound
Asbestos Benzene Cadmium Carbon tetrachloride Chlorinated dioxins and dibenzofurans (15 species) Ethylene dibromide Ethylene dichloride Ethylene oxide Formaldehyde Hexavalent chromium Methylene chloride Nickel Perchloroethylene 1,3-Butadiene Inorganic arsenic Beryllium Polynuclear aromatic hydrocarbons (PAH) Vinyl chloride Lead 1,4-Dioxane Trichloroethylene	

**TABLE II  
SCHEDULE OF EXCESS VISIBLE EMISSION FEE**

For each source with opacity emissions in excess of twenty percent (20%), but less than forty percent (40%) (where the source is in violation of Regulation 6, the fee is calculated as follows:

$$\text{Fee} = (\text{Opacity}^* \text{ equivalent} - 20) \times \text{number of days allowed in variance} \times \text{\$} ~~1.48~~ 1.20$$

For each source with opacity emissions in excess of forty percent (40%) (where the source is in violation of Regulation 6 and California Health and Safety Code Section 41701), the fee is calculated as follows:

$$\text{Fee} = (\text{Opacity}^* \text{ equivalent} - 40) \times \text{number of days allowed by variance} \times \text{\$} ~~1.48~~ 1.20$$

- \* Where "Opacity" equals maximum opacity of emissions in percent (not decimal equivalent) allowed by the variance. Where the emissions are darker than the degree of darkness equivalent to the allowed Ringelmann number, the percentage equivalent of the excess degree of darkness shall be used as "opacity."

*(Adopted 6/7/00; Amended 5/1/02)*

**SCHEDULE B  
COMBUSTION OF FUEL  
(Adopted June 18, 1980)**

For each source that burns fuel, which is not a flare, and which is not exempted by Regulation 2, Rule 1, the fee shall be computed based on the maximum gross combustion capacity of the source.

1. INITIAL FEE: \$~~33.00~~33.52 per MM BTU/HOUR
  - a. All ratings rounded to the nearest MM BTU/Hr
  - b. The minimum fee per source is: \$176,179
  - c. The maximum fee per source is: \$~~1,560,600~~62,545
  
2. PERMIT TO OPERATE FEE: \$~~16.50~~16.76 per MM BTU/HOUR
  - a. All ratings rounded to the nearest MM BTU/HR
  - b. The minimum fee per source is: \$126,128
  - c. The maximum fee per source is: \$~~30,780,000~~31,272
  
3. Fees for each source will be rounded to the nearest dollar. The fee for sources will be rounded up to the nearest dollar for 51 cents and above, and amounts 50 cents and lower will be rounded down to the nearest dollar.
  
4. Toxic Surcharge Fee: The initial fee shall be doubled and the permit to operate fee shall be raised by ten percent, for sources which emit one or more toxic air contaminant (TAC), identified by the Air Resources Board, at a rate which exceeds the trigger levels listed in Table 2-1-316 of Regulation 2, Rule 1. This fee shall not be assessed for TACs not listed in Table 2-1-316.
  
5. Applicants for an authority to construct and permit to operate a project, which burns municipal waste or refuse-derived fuel, shall pay in addition to all required fees, an additional fee to cover the costs incurred by the State Department of Health Services, and/or a qualified contractor designated by the State Department of Health Services, in reviewing a risk assessment as required under H&S Code Section 42315. The fee shall be transmitted by the District to the Department of Health Services and/or the qualified contractor upon completion of the review and submission of comments in writing to the District.
  
6. A surcharge equal to 100% of all required initial and permit to operate fees shall be charged for sources permitted to burn one or more of the following fuels: coke, coal, wood, tires, black liquor, and municipal solid waste.

NOTE: MM BTU is million BTU  
 One MM BTU/HR = 1.06 gigajoules/HR  
*(Amended 6/5/85; 6/4/86; 3/4/87; 6/6/90; 7/3/91; 6/15/94; 10/8/97; 7/1/98; 5/19/99; 6/7/00; 6/6/01, 5/1/02)*

**SCHEDULE C**  
**STATIONARY CONTAINERS FOR THE STORAGE OF**  
**ORGANIC LIQUIDS**  
(Adopted June 18, 1980)

For each stationary container of organic liquids which is not exempted from permits by Regulation 2 and which is not part of a gasoline dispensing facility, the fee shall be computed based on the container volume, as follows:

1. INITIAL FEE: 0.160 cents per gallon
  - a. The minimum fee per source is: \$176179
  - b. The maximum fee per source is: \$23,96024,343
  
2. PERMIT TO OPERATE FEE: ~~0.080~~0.081 cents per gallon
  - a. The minimum fee per source is: \$126128
  - b. The maximum fee per source is: \$11,98012,172
  
3. Fees for each source will be rounded to the nearest dollar. The fee for sources will be rounded up to the nearest dollar for 51 cents and above, and amounts 50 cents and lower will be rounded down to the nearest dollar.
  
4. Toxic Surcharge Fee: The initial fee shall be doubled and the permit to operate fee shall be raised by ten percent, for sources which emit one or more toxic air contaminant (TAC), identified by the Air Resources Board, at a rate which exceeds the trigger levels listed in Table 2-1-316 of Regulation 2, Rule 1. This fee shall not be assessed for TACs not listed in Table 2-1-316.

*(Amended 2/20/85; 6/5/85; 6/4/86; 7/3/91; 6/15/94; 7/1/98; 5/19/99; 6/7/00; 6/6/01, 5/1/02)*



**SCHEDULE D**  
**GASOLINE TRANSFER AT GASOLINE DISPENSING**  
**FACILITIES,**  
**BULK PLANTS AND TERMINALS**  
(Adopted June 18, 1980)

1. All gasoline dispensing facilities shall pay the following fees:
  - a. INITIAL FEE: ~~\$80.00~~\$81.00 per single product nozzle (spn)  
~~\$80.00~~\$81.00 per product for each multi-product nozzle  
(mpn)
  - b. PERMIT TO OPERATE FEE: ~~\$30.50~~\$31.00 per single product nozzle (spn)  
~~\$30.50~~\$31.00 per product for each multi-product nozzle  
(mpn)

Modifications at a currently permitted gasoline dispensing facility shall pay the following fees with no change to the facilities' expiration date:

- c. MODIFICATION FEE:  

$$\$140.50$$
\$112.25 ×  $\{[(mpn_{proposed})(products\ per\ nozzle) + spn_{proposed}] - [(mpn_{existing})(products\ per\ nozzle) + spn_{existing}]\}$   
*mpn* = multi-product nozzles  
*spn* = single product nozzles

If the above formula yields zero or negative results, no modification fee shall be charged. These projects shall pay a filing fee only.

For the purposes of calculating the above fees, a fuel blended from two or more different grades shall be considered a separate product.

Other modifications to facilities' equipment, including but not limited to tank addition/replacement/conversion, vapor recovery piping replacement, moving or extending pump islands, will pay a filing fee only.

2. Nozzles used exclusively for the delivery of diesel fuel or other fuels exempt from permits shall pay no fee. Multi-product nozzles used to deliver both exempt and non-exempt fuels shall pay fees for the non-exempt products only.
3. All bulk plants, terminals or other facilities using loading racks to transfer gasoline or gasohol into trucks, railcars or ships shall pay the following fees:
  - a. INITIAL FEE: ~~\$1,047~~\$1,064 per single product loading arm  
~~\$1,047~~\$1,064 per product for multi-product arms
  - b. PERMIT TO OPERATE FEE: ~~\$292~~\$297 per single product loading arm  
~~\$292~~\$297 per product for multi-product arms
4. Fees in (1) above are in lieu of tank fees. Fees in (3) above are in addition to tank fees.
5. Fees for each source will be rounded to the nearest dollar. The fee for sources will be rounded up to the nearest dollar for ~~545~~52 cents and above, and amounts ~~505~~1 cents and lower will be rounded down to the nearest dollar.
6. The initial fee and the permit to operate fee have been raised for the above sources that emit benzene, a toxic air contaminant identified by the Air Resources Board.

*(Amended 2/20/85; 6/5/85; 6/4/86; 7/3/91; 6/15/94; 10/8/97; 7/1/98; 5/19/99; 6/7/00; 6/6/01, 5/1/02)*

**SCHEDULE E**  
**SOLVENT EVAPORATING SOURCES**  
(Adopted June 18, 1980)

For each solvent evaporating source, as defined in Section 3-210 except for dry cleaners, the fee shall be computed based on the net amount of organic solvent processed through the sources on an annual basis (or anticipated to be processed, for new sources) including solvent used for the cleaning of the sources.

1. INITIAL FEE:
  - a. The minimum fee per source is: \$176,179
  - b. If usage is not more than 1,000 gallons/year: \$176,179
  - c. If usage is more than 1,000 gallons/year: ~~\$352,358~~ per 1,000 gallons
  - d. The maximum fee per source is: \$14,016,240
  
2. PERMIT TO OPERATE FEE:
  - a. The minimum fee per source is: \$126,128
  - b. If usage is not more than 1,000 gallons/year: \$126,128
  - c. If usage is more than 1,000 gallons/year: \$176,179 per 1,000 gallons
  - d. The maximum fee per source is: \$7,008,120
  
3. Fees for each source will be rounded to the nearest dollar. The fee for sources will be rounded up to the nearest dollar for ~~5452~~ cents and above, and amounts ~~5051~~ cents and lower will be rounded down to the nearest dollar.
  
4. Toxic Surcharge Fee: The initial fee shall be doubled and the permit to operate fee shall be raised by ten percent, for sources which emit one or more toxic air contaminant (TAC), identified by the Air Resources Board, at a rate which exceeds the trigger levels listed in Table 2-1-316 of Regulation 2, Rule 1. This fee shall not be assessed for TACs not listed in Table 2-1-316.

*(Amended 5/19/82; 10/17/84; 6/5/85; 6/4/86; 10/8/87;  
7/3/91; 6/15/94; 7/1/98; 5/19/99; 6/7/00; 6/6/01, 5/1/02)*

**SCHEDULE F**  
**MISCELLANEOUS SOURCES**  
(Adopted June 18, 1980)

For each source not governed by Schedules B, C, D, E, H or I, the initial fee is ~~\$176~~179 and the permit to operate fee is ~~\$126~~128, except for those sources in the special classification lists below:

List of special classifications requiring graduated fees is shown in Schedules G-1, G-2, G-3, and G-4.

1. FEE FOR SCHEDULE G-1
  - a. The initial fee is: \$1,0501,067
  - b. The permit to operate fee is: \$525533
2. FEE FOR SCHEDULE G-2
  - a. The initial fee is: \$2,1002,134
  - b. The permit to operate fee is: \$1,0501,067
3. FEE FOR SCHEDULE G-3
  - a. The initial fee is: \$16,00016,256
  - b. The permit to operate fee is: \$8,0008,128
4. FEE FOR SCHEDULE G-4
  - a. The initial fee is: \$45,72046,452
  - b. The permit to operate fee is: \$22,86023,226
5. Fees for each source will be rounded to the nearest dollar. The fee for sources will be rounded up to the nearest dollar for ~~54~~52 cents and above, and amounts ~~50~~51 cents and lower will be rounded down to the nearest dollar.
6. Toxic Surcharge Fee: The initial fee shall be doubled and the permit to operate fee shall be raised by ten percent, for sources which emit one or more toxic air contaminant (TAC), identified by the Air Resources Board, at a rate which exceeds the trigger levels listed in Table 2-1-316 of Regulation 2, Rule 1. This fee shall not be assessed for TACs not listed in Table 2-1-316.

*(Amended 5/19/82; 6/5/85; 6/4/86; 6/6/90; 7/3/91; 6/15/94; 10/8/97; 7/1/98; 5/19/99; 6/7/00; 6/6/01, 5/1/02)*

**SCHEDULE G-1**  
(Adopted June 18, 1980)

<b>Equipment or Process Description</b>	<b>Materials Processed or Produced</b>
Asphalt Roofing Manufacturing – Asphalt Dipping	Asphalt Roofing or Related Materials
Calcining Kilns, excluding those processing cement, lime, or coke (see G-4 for cement, lime, or coke Calcining Kilns)	Any Materials except cement, lime, or coke
Chemical Manufacturing, Inorganic – Processing Units with a Capacity of 1000 Gallons/Hour or more	Any Inorganic Materials
Chemical Manufacturing, Inorganic – Processing Units with a Capacity of 5 Tons/Hour or more	Any Inorganic Materials
Chemical Manufacturing, Inorganic – Reactors with a Capacity of 1000 Gallons or more	Any Inorganic Materials
Chemical Manufacturing, Organic - Latex Dipping	Any latex materials
Chemical Manufacturing, Organic – Processing Units with a Capacity of 1000 Gallons/Hour or more	Any Organic Materials
Chemical Manufacturing, Organic – Processing Units with a Capacity of 5 Tons/Hour or more	Any Organic Materials
Chemical Manufacturing, Organic – Reactors with a Capacity of 1000 Gallons or more	Any Organic Materials
Crushers	Any minerals or mineral products such as rock, aggregate, cement, concrete, or glass; waste products such as building or road construction debris; and any wood, wood waste, green waste; or similar materials
Electroplating Equipment	Decorative or Hard Chrome only
Foil Manufacturing – Any Converting or Rolling Lines	Any Metal or Alloy Foils
Galvanizing Equipment	Any
Glass Manufacturing – Batching Processes including storage and weigh hoppers or bins, conveyors, and elevators	Any Dry Materials
Glass Manufacturing – Mixers	Any Dry Materials
Glass Manufacturing – Molten Glass Holding Tanks	Any molten glass
Grinders	Any minerals or mineral products such

Equipment or Process Description	Materials Processed or Produced
	as rock, aggregate, cement, concrete, or glass; waste products such as building or road construction debris; and any wood, wood waste, green waste; or similar materials
Incinerators – Crematory	Human and/or animal remains
Incinerators – Flares	Any waste gases
Incinerators – Other (see G-2 for hazardous or municipal solid waste incinerators, see G-3 for medical or infectious waste incinerators)	Any Materials except hazardous wastes, municipal solid waste, medical or infectious waste
Incinerators – Pathological Waste (see G-3 for medical or infectious waste incinerators)	Pathological waste only
Loading and/or Unloading Operations – Bulk Plants and Bulk Terminals, excluding those loading gasoline or gasohol (see Schedule D for Bulk Plants and Terminals loading gasoline or gasohol)	Any Organic Materials except gasoline or gasohol
Petroleum Refining – Alkylation Units	Any Hydrocarbons
Petroleum Refining – Asphalt Oxidizers	Any Hydrocarbons
Petroleum Refining – Benzene Saturation Units/Plants	Any Hydrocarbons
Petroleum Refining – Catalytic Reforming Units	Any Hydrocarbons
Petroleum Refining – Chemical Treating Units including alkane, naphthenic acid, and naptha merox treating, or similar processes	Any Hydrocarbons
Petroleum Refining – Converting Units including Dimersol Plants, Hydrocarbon Splitters, or similar processes	Any Hydrocarbons
Petroleum Refining – Distillation Units, excluding crude oil units with capacity > 1000 barrels/hour (see G-3 for > 1000 barrels/hour crude distillation units)	Any Hydrocarbons
Petroleum Refining – Hydrogen Manufacturing	Hydrogen or Any Hydrocarbons
Petroleum Refining – Hydrotreating or Hydrofining	Any Hydrocarbons
Petroleum Refining – Isomerization	Any Hydrocarbons
Petroleum Refining – MTBE Process Units/Plants	Any Hydrocarbons
Petroleum Refining – Sludge Converter	Any Petroleum Waste Materials
Petroleum Refining – Solvent Extraction	Any Hydrocarbons

<b>Equipment or Process Description</b>	<b>Materials Processed or Produced</b>
Petroleum Refining – Sour Water Stripping	Any Petroleum Process or Waste Water
Petroleum Refining – Storage (enclosed)	Petroleum Coke or Coke Products
Petroleum Refining – Waste Gas Flares	Any Petroleum Refining Gases
Petroleum Refining – Miscellaneous Other Process Units	Any Hydrocarbons
Remediation Operations, Groundwater – Strippers	Contaminated Groundwater
Remediation Operations, Soil - Any Equipment	Contaminated Soil
Spray Dryers	Any Materials
Sterilization Equipment	Ethylene Oxide
Wastewater Treatment, Industrial – Oil-Water Separators, excluding oil-water separators at petroleum refineries (see G-2 for Petroleum Refining - Oil-Water Separators)	Wastewater from any industrial facilities except petroleum refineries
Wastewater Treatment, Industrial – Strippers including air strippers, nitrogen strippers, dissolved air flotation units, or similar equipment and excluding strippers at petroleum refineries (see G-2 for Petroleum Refining – Strippers)	Wastewater from any industrial facilities except petroleum refineries
Wastewater Treatment, Industrial - Storage Ponds, excluding storage ponds at petroleum refineries (see G-2 for Petroleum Refining – Storage Ponds)	Wastewater from any industrial facilities except petroleum refineries
Wastewater Treatment, Municipal – Preliminary Treatment	Municipal Wastewater
Wastewater Treatment, Municipal – Primary Treatment	Municipal Wastewater
Wastewater Treatment, Municipal – Digesters	Municipal Wastewater
Wastewater Treatment, Municipal – Sludge Handling Processes, excluding sludge incinerators (see G-2 for sludge incinerators)	Sewage Sludge

*(Amended 6/4/86; 6/6/90; 5/19/99; 6/7/00)*

**SCHEDULE G-2**  
(Adopted June 6, 1990)

<b>Equipment or Process Description</b>	<b>Materials Processed or Produced</b>
Asphalt Roofing Manufacturing – Asphalt Blowing	Asphalt Roofing or Related Materials
Asphaltic Concrete Manufacturing – Aggregate Dryers	Any Dry Materials
Asphaltic Concrete Manufacturing – Batch Mixers	Any Asphaltic Concrete Products
Asphaltic Concrete Manufacturing – Drum Mixers	Any Asphaltic Concrete Products
Asphaltic Concrete Manufacturing – Other Mixers and/or Dryers	Any Dry Materials or Asphaltic Concrete Products
Concrete or Cement Batching Operations – Mixers	Any cement, concrete, or stone products or similar materials
Furnaces – Electric	Any Mineral or Mineral Product
Furnaces – Electric Induction	Any Mineral or Mineral Product
Furnaces – Glass Manufacturing	Soda Lime only
Furnaces – Reverberatory	Any Ores, Minerals, Metals, Alloys, or Related Materials
Incinerators – Hazardous Waste including any unit required to have a RCRA permit	Any Liquid or Solid Hazardous Wastes
Incinerators – Solid Waste, excluding units burning human/animal remains or pathological waste exclusively (see G-1 for Crematory and Pathological Waste Incinerators)	Any Solid Waste including Sewage Sludge (except human/animal remains or pathological waste)
Metal Rolling Lines, excluding foil rolling lines (see G-1 for Foil Rolling Lines)	Any Metals or Alloys
Petroleum Refining – Stockpiles (open)	Petroleum Coke or coke products only
Petroleum Refining, Wastewater Treatment – Oil-Water Separators	Wastewater from petroleum refineries only
Petroleum Refining, Wastewater Treatment – Strippers including air strippers, nitrogen strippers, dissolved air flotation units, or similar equipment	Wastewater from petroleum refineries only
Petroleum Refining, Wastewater Treatment – Storage Ponds	Wastewater from petroleum refineries only
Pickling Lines or Tanks	Any Metals or Alloys
Sulfate Pulping Operations – All Units	Any
Sulfite Pulping Operations – All Units	Any

*(Amended June 7, 2000)*

**SCHEDULE G-3**  
(Adopted June 18, 1980)

<b>Equipment or Process Description</b>	<b>Materials Processed or Produced</b>
Furnaces – Electric Arc	Any Metals or Alloys
Furnaces – Electric Induction	Any Metals or Alloys
Incinerators – Medical Waste, excluding units burning pathological waste exclusively (see G-1 for Pathological Waste Incinerators)	Any Medical or Infectious Wastes
Loading and/or Unloading Operations – Marine Berths	Any Organic Materials
Petroleum Refining – Cracking Units including hydrocrackers and excluding thermal or fluid catalytic crackers (see G-4 for Thermal Crackers and Catalytic Crackers)	Any Hydrocarbons
Petroleum Refining – Distillation Units (crude oils) including any unit with a capacity greater than 1000 barrels/hour (see G-1 for other distillation units)	Any Petroleum Crude Oils
Phosphoric Acid Manufacturing – All Units (by any process)	Phosphoric Acid

*(Amended 5/19/82; Amended and renumbered 6/6/90; Amended 6/7/00)*



**SCHEDULE G-4**  
(Adopted June 6, 1990)

<b>Equipment or Process Description</b>	<b>Materials Processed or Produced</b>
Acid Regeneration Units	Sulfuric or Hydrochloric Acid only
Annealing Lines (continuous only)	Metals and Alloys
Calcining Kilns (see G-1 for Calcining Kilns processing other materials)	Cement, Lime, or Coke only
Fluidized Bed Combustors	Solid Fuels only
Nitric Acid Manufacturing – Any Ammonia Oxidation Processes	Ammonia or Ammonia Compounds
Petroleum Refining - Coking Units including fluid cokers, delayed cokers, flexicokers, and coke kilns	Petroleum Coke and Coke Products
Petroleum Refining - Cracking Units including fluid catalytic crackers and thermal crackers and excluding hydrocrackers (see G-3 for Hydrocracking Units)	Any Hydrocarbons
Petroleum Refining - Sulfur Removal including any Claus process or any other process requiring caustic reactants	Any Petroleum Refining Gas
Sulfuric Acid Manufacturing – Any Chamber or Contact Process	Any Solid, Liquid or Gaseous Fuels Containing Sulfur

*(Amended June 7, 2000)*

**SCHEDULE H**  
**SEMICONDUCTOR AND RELATED OPERATIONS**  
(Adopted May 19, 1982)

All of the equipment within a semiconductor fabrication area will be grouped together and considered one source. The fee shall be as indicated:

1. INITIAL FEE:

- a. The minimum fee per source is: \$476179
- b. The maximum fee per source is: \$14,04614,240

The initial fee shall include the fees for each type of operation listed below, which is performed at the fabrication area:

- c. SOLVENT CLEANING OPERATIONS, such as usage of:  
Solvent Sinks (as defined in Regulation 8-30-214);  
Solvent Spray Stations (as defined in Regulation 8-30-221);  
Solvent Vapor Stations (as defined in Regulation 8-30-222); and  
Wipe Cleaning Operation (as defined in Regulation 8-30-225).  
The fee is based on the gross throughput of organic solvent processed through the solvent cleaning operations on an annual basis (or anticipated to be processed, for new sources):
  - i. If gross throughput is not more than 3,000 gal/yr:\$476179
  - ii. If gross throughput is more than 3,000 gallons/year:\$449121 per 1,000 gallon
- d. COATING OPERATIONS, such as application of:  
Photoresist (as defined in Regulation 8-30-215); other wafer coating;  
Solvent-Based Photoresist Developer (as defined in Regulation 8-30-219);  
and other miscellaneous solvent usage.  
The fee is based on the gross throughput of organic solvent processed through the coating operations on an annual basis (or anticipated to be processed, for new sources):
  - i. If gross throughput is not more than 1,000 gal/yr:\$476179
  - ii. If gross throughput is more than 1,000 gallons/year:\$352358 per 1,000 gallon

2. PERMIT TO OPERATE FEE:

- a. The minimum fee per source is: \$426128
- b. The maximum fee per source is: \$7,0087,120

The permit to operate fee shall include the fees for each type of operation listed below, which is performed at the fabrication area:

- c. SOLVENT CLEANING OPERATIONS, such as usage of:  
Solvent Sinks (as defined in Regulation 8-30-214);  
Solvent Spray Stations (as defined in Regulation 8-30-221);  
Solvent Vapor Stations (as defined in Regulation 8-30-222); and  
Wipe Cleaning Operation (as defined in Regulation 8-30-225).  
The fee is based on the gross throughput of organic solvent processed through the solvent cleaning operations on an annual basis (or anticipated to be processed, for new sources):
  - i. If gross throughput is not more than 3,000 gal/yr:\$426128
  - ii. If gross throughput is more than 3,000 gallons/year:\$5960 per 1,000 gallon
- d. COATING OPERATIONS, such as application of:  
Photoresist (as defined in Regulation 8-30-215); other wafer coating;  
Solvent-Based Photoresist Developer (as defined in Regulation 8-30-219);  
and other miscellaneous solvent usage.  
The fee is based on the gross throughput of organic solvent processed through the coating operations on an annual basis (or anticipated to be

processed, for new sources):

- i. If gross throughput is not more than 1,000 gal/yr: ~~\$126~~128
  - ii. If gross throughput is more than 1,000 gallons/year: ~~\$176~~179 per 1,000 gallon
3. The fee for each source will be rounded to the whole dollar. Fees for sources will be rounded up to the nearest dollar for ~~545~~542 cents and above, and amounts ~~505~~51 cents and lower will be rounded down to the nearest dollar.
  4. Toxic Surcharge Fee: The initial fee shall be doubled and the permit to operate fee shall be raised by ten percent, for sources which emit one or more toxic air contaminant (TAC), identified by the Air Resources Board, at a rate which exceeds the trigger levels listed in Table 2-1-316 of Regulation 2, Rule 1. This fee shall not be assessed for TACs not listed in Table 2-1-316.

*(Amended 1/9/85; 6/5/85; 6/4/86; 7/3/91; 6/15/94; 10/8/97; 7/1/98; 5/19/99; 10/20/99; 6/7/00; 6/6/01, 5/1/02)*

**SCHEDULE I  
DRY CLEANERS**  
(Adopted July 6, 1983)

For dry cleaners, the fee shall be computed based on each cleaning machine, except that machines with more than one drum shall be charged based on each drum, regardless of the type or quantity of solvent, as follows:

1. INITIAL FEE FOR A DRY CLEANING MACHINE (per drum):
  - a. If the washing or drying capacity is no more than 100 pounds: ~~\$176~~179
  - b. If the washing or drying capacity exceeds 100 pounds: ~~\$176~~179 plus  
For that portion of the capacity exceeding 100 pounds: ~~\$5.24~~5.32 per  
pound
2. PERMIT TO OPERATE FEE FOR A DRY CLEANING MACHINE (per drum):
  - a. If the washing or drying capacity is no more than 100 pounds: ~~\$126~~128
  - b. If the washing or drying capacity exceeds 100 pounds: ~~\$126~~128 plus  
For that portion of the capacity exceeding 100 pounds: ~~\$2.62~~2.66 per  
pound
3. Fees for each source will be rounded to the nearest dollar. The fee for sources will be rounded up to the nearest dollar for ~~54~~52 cents and above, and amounts ~~50~~51 cents and lower will be rounded down to the nearest dollar.
4. Toxic Surcharge Fee: The initial fee shall be doubled and the permit to operate fee shall be raised by ten percent, for sources which emit one or more toxic air contaminant (TAC), identified by the Air Resources Board, at a rate which exceeds the trigger levels listed in Table 2-1-316 of Regulation 2, Rule 1. This fee shall not be assessed for TACs not listed in Table 2-1-316.

*(Amended 10/17/84; 6/5/85; 6/4/86; 7/3/91; 6/15/94; 10/8/97; 7/1/98; 5/19/99; 6/7/00; 6/6/01, 5/1/02)*

**SCHEDULE K**  
**SOLID WASTE DISPOSAL SITES**  
(Adopted July 15, 1987)

1. INITIAL FEE:
  - a. Inactive or Closed Solid Waste Disposal Sites \$1,0501,067
  - b. Active Solid Waste Disposal Sites \$2,1002,134
  - c. For applications involving only new or modified gas collection system equipment, the initial fee shall be 50% of the appropriate initial fee determined by a. or b. above.
2. PERMIT TO OPERATE FEE:
  - a. Inactive or Closed Solid Waste Disposal Sites \$525533
  - b. Active Solid Waste Disposal Sites \$1,0501,067
3. Evaluation of Reports and Questionnaires:
  - a. Evaluation of Solid Waste Air Assessment Test Report as required by Health & Safety Code Section 41805.5(g) \$835848
  - b. Inactive Site Questionnaire evaluation as required by Health & Safety Code Section 41805.5(b) \$418425
  - c. Evaluation of Solid Waste Air Assessment Test report in conjunction with evaluation of Inactive Site Questionnaire as required by Health & Safety Code Section 41805.5(b) \$418425
  - d. Evaluation of Initial or Amended Design Capacity Reports as required by Regulation 8, Rule 34, Section 405 \$307312
  - e. Evaluation of Initial or Periodic NMOC Emission Rate Reports as required by Regulation 8, Rule 34, Sections 406 or 407 \$880894
  - f. Evaluation of Closure Report as required by Regulation 8, Rule 34, Section 409 \$307312
  - g. Evaluation of Annual Report as required by Regulation 8, Rule 34, Section 411 \$770782
4. Fees for each source will be rounded off to the nearest dollar. The fee for sources will be rounded up or down to the nearest dollar.
5. Toxic Surcharge Fee: The initial fee shall be doubled and the permit to operate fee shall be raised by ten percent, for sources which emit one or more toxic air contaminant (TAC), identified by the Air Resources Board, at a rate which exceeds the trigger levels listed in Table 2-1-316 of Regulation 2, Rule 1. This fee shall not be assessed for TACs not listed in Table 2-1-316.
6. For the purposes of this fee schedule, a solid waste disposal site shall be considered active, if it has accepted solid waste for disposal at any time during the previous 12 months or has plans to accept solid waste for disposal during the next 12 months.

*(Amended 7/3/91; 6/15/94; 10/8/97; 7/1/98; 5/19/99; 10/6/99; 6/7/00; 6/6/01, 5/1/02)*

**SCHEDULE L**  
**ASBESTOS OPERATIONS**  
(Adopted July 6, 1988)

1. Asbestos Operations conducted at single family dwellings are subject to the following fees:
  - a. OPERATION FEE: ~~\$8687~~ for amounts 100 to 500 square feet or linear feet.  
\$346321 for amounts 501 square feet or linear feet to 1000 square feet or linear feet.  
\$459466 for amounts 1001 square feet or liner feet to 2000 square feet or linear feet.  
\$631641 for amounts greater than 2000 square feet or linear feet.
  - b. Cancellation: \$4142 of above amounts non-refundable, for notification processing.
  
2. Asbestos Operations, other than those conducted at single family dwellings, are subject to the following fees:
  - a. OPERATION FEE: ~~\$242246~~ for amounts 100 to 159 square feet or 100 to 259 linear feet or 35 cubic feet  
\$351357 for amounts 160 square feet or 260 linear feet to 500 square or linear feet or greater than 35 cubic feet.  
\$511519 for amounts 501 square feet or linear feet to 1000 square feet or linear feet.  
\$752764 for amounts 1001 square feet or liner feet to 2500 square feet or linear feet.  
\$10731090 for amounts 2501 square feet or linear feet to 5000 square feet or linear feet.  
\$14741498 for amounts 5001 square feet or linear feet to 10000 square feet or linear feet.  
\$18751905 for amounts greater than 10001 square feet or linear feet.
  - b. Cancellation: ~~\$416118~~ of above amounts non-refundable for notification processing.
  
3. Demolitions (including zero asbestos demolitions) conducted at a single-family dwelling are subject to the following fee:
  - a. OPERATION FEE: \$4142
  - b. Cancellation: \$4142 (100% of fee) non-refundable, for notification processing.
  
4. Demolitions (including zero asbestos demolitions) other than those conducted at a single family dwelling are subject to the following fee:
  - a. OPERATION FEE: ~~\$473176~~
  - b. Cancellation: ~~\$116118~~ of above amount non-refundable for notification processing.
  
5. Asbestos operations with less than 10 days prior notice (excluding emergencies) are subject to the following additional fee:
  - a. OPERATION FEE: ~~\$286291~~
  
6. Asbestos demolition operations for the purpose of fire training are exempt from fees.  
*(Amended 9/5/90; 1/5/94; 8/20/97; 10/7/98; 7/19/00; 8/1/01, 6/5/02)*

**SCHEDULE M**  
**MAJOR STATIONARY SOURCE FEES**  
(Adopted June 6, 1990)

For each major stationary source emitting 50 tons per year or more of Organic Compounds, Sulfur Oxides, Nitrogen Oxides, and/or PM<sub>10</sub>, the fee shall be based on the following:

- |    |                   |   |
|----|-------------------|---|
| 1. | Organic Compounds | <del>\$52.50</del> <u>53.35</u> per ton |
| 2. | Sulfur Oxides     | <del>\$52.50</del> <u>53.35</u> per ton |
| 3. | Nitrogen Oxides   | <del>\$52.50</del> <u>53.35</u> per ton |
| 4. | PM <sub>10</sub>  | <del>\$52.50</del> <u>53.35</u> per ton |

Emissions calculated by the APCO shall be based on the data reported for the most recent 12-month period prior to billing. In calculating the fee amount, emissions of Organic Compounds, Sulfur Oxides, Nitrogen Oxides, or PM<sub>10</sub>, if occurring in an amount less than 50 tons per year, shall not be counted.

*(Amended 7/3/91; 6/15/94; 7/1/98; 5/9/99; 6/7/00; 6/6/01, 5/1/02)*

**SCHEDULE N**  
**TOXIC INVENTORY FEES**  
(Adopted October 21, 1992)

For each stationary source emitting substances covered by California Health and Safety Code Section 44300 *et seq.*, the Air Toxics "Hot Spots" Information and Assessment Act of 1987, a fee based on the weighted emissions of the facility shall be assessed based on the following formulas:

1. A fee of \$5 for each gasoline product dispensing nozzle in the facility, if the facility is a Gasoline Dispensing Facility; or
2. A fee of \$125 if the facility has emissions in the current Toxic Emissions Inventory which are greater than or equal to 50 weighted pounds per year and less than 1000 weighted pounds per year; or
3. A fee of \$125 +  $S_L \times (w_j - 1000)$  if the facility has emissions in the current Toxic Emissions Inventory which are greater than or equal to 1000 weighted pounds per year;

where the following relationships hold:

$w_i$  = facility weighted emissions for facility j; where the weighted emission for the facility shall be calculated as a sum of the individual emissions of the facility multiplied by either the Unit Risk Value for the substance times one hundred thousand (in cubic meters/microgram) if the emission is a carcinogen, or by the reciprocal of the acceptable exposure level (AEL) for the substance (in cubic meters/microgram) if the emission is not a carcinogen:

$w_j$  = Facility Weighted Emission =  $\sum_{i=1}^n E_i * Q_i$  where

$n$  = number of toxic substances emitted by facility

$E_j$  = amount of substance i emitted by facility in lbs/year

$Q_j$  = Unit Risk Value \*  $10^5$  if i is a carcinogen; or

$Q_j$  = [Acceptable Exposure Level]<sup>-1</sup> if i is not a carcinogen

$F_T$  = Total amount of fees to be collected by the District to cover District and State of California AB 2588 costs as most recently adopted by the Board of Directors of the California Environmental Protection Agency, Air Resources Board, and set out in the most recently published "Amendments to the Air Toxics "Hot Spots" Fee Regulation," published by that agency.

$N_L$  = Number of facilities with emissions in current District Toxic Emissions Inventory greater than 1000 weighted pounds per year.

$N_S$  = Number of facilities with emissions in current District Toxic Emissions Inventory greater than 50 weighted pounds per year and less than 1000 weighted pounds per year.

$N_{NOZ}$  = Number of gasoline-product-dispensing nozzles in currently permitted Gasoline Dispensing Facilities.

$S_L$  = Surcharge per pound of weighted emissions for each pound in excess of 1000 weighted pounds per year, where  $s_L$  is given by the following formula:

$$S_L = \frac{F_T - (125 \times N_S) - (125 \times N_L) - 5 \times N_{NOZ}}{\sum_{j=1}^{N_L} (w_j - 1000)}$$

(Amended December 15, 1993)



**SCHEDULE P**  
**MAJOR FACILITY REVIEW FEES**  
(Adopted November 3, 1993)

1. Each facility which is required to undergo major facility review in accordance with the requirements of Regulation 2-6, shall pay the following annual fee for each source holding a District Permit to Operate. These fees shall be in addition to and shall be paid in conjunction with the annual renewal fees paid by the facility. However, these MFR permit fees shall not be included in the basis to calculate Alternative Emission Control Plan (bubble) or toxic air contaminant surcharges.  
If a major facility applies for and obtains a synthetic minor operating permit, the requirement to pay this fee shall terminate as of the date the APCO issues the synthetic minor operating permit.  
MFR ANNUAL FEE .. ~~\$453~~155 per source and ~~\$6.00~~6.10 per ton of regulated air pollutants emitted
  
2. Effective July 1, 1999, each MFR facility and each synthetic minor facility shall pay an annual monitoring fee for each pollutant measured by a District-approved continuous emission monitor or District-approved parametric emission monitoring system.  
MONITORING FEE ..... ~~\$1500~~1548 per monitor per pollutant
  
3. Effective July 1, 1995, each facility that applies for a permit shield under the provisions of Regulation 2-6 shall pay the following application fee for each source covered by the shield.  
PERMIT SHIELD FEE..... ~~\$380~~386 per shielded source or group of identical sources
  
4. Each facility that applies for a permit, or a permit modification in accordance with the requirements of Regulation 2-6 shall pay the following fee upon receipt of a District invoice.  
PUBLIC NOTICE FEE..... Cost of Publication
  
5. Each facility that applies for a synthetic minor operating permit in accordance with the requirements of Regulation 2-6 shall pay (up to a maximum of ~~\$10,430~~10,597) the following application fee for each source holding a District Permit to Operate. If a major facility applies for a synthetic minor operating permit prior to the date on which it would become subject to the annual major facility review fee described above, the facility shall pay, in addition to the application fee, the equivalent of one year of annual fees for each source holding a District Permit to Operate.  
SYNTHETIC MINOR APPLICATION FEE ..... ~~\$150~~152 per source
  
6. Each facility that applies for a significant permit revision a minor permit revision, or a revision to a synthetic minor operating permit in accordance with the requirements of Regulation 2-6 shall pay, with the application and in addition to any other fee required by this regulation, the following fee for any permitted source affected by the revision.  
PERMIT REVISION FEE ..... ~~\$150~~152 per source modified

*(Amended 6/15/94; 10/8/97; 7/1/98; 5/19/99; 6/7/00; 6/6/01, 5/1/02)*

**SCHEDULE Q**  
**AERATION EXCAVATION OF CONTAMINATED SOIL AND**  
**REMOVAL OF UNDERGROUND STORAGE TANKS**  
(Adopted January 5, 1994)

1. Persons ~~aerating~~ excavating contaminated soil or removing underground storage tanks subject to the provisions of Regulation 8, Rule 40, Section 401, 402, 403 or 405 are subject to the following fee:
  - a. OPERATION FEE:       \$146118

*(Amended 7/19/00; 8/1/01, 6/5/02)*

BAY AREA AIR QUALITY MANAGEMENT DISTRICT  
Memorandum

To: Chairperson Haggerty and Members  
of the Board of Directors

From: William C. Norton  
Executive Officer/APCO

Date: May 14, 2003

Re: Public Hearing to Consider Proposed New Regulation 12, Rule 11 ("Flare  
Monitoring at Petroleum Refineries") and Approval of a Negative Declaration  
pursuant to the California Environmental Quality Act

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RECOMMENDED ACTION:

Staff recommends that the Board of Directors take the following actions:

- A) Hold a public hearing on the proposed rule;
- B) Continue the hearing until June 4, 2003.

At the June 4 hearing, staff will recommend that the Board take the following actions:

- C) Adopt proposed new Regulation 12, Rule 11, Flare Monitoring at Petroleum Refineries;
- D) Approve a Negative Declaration pursuant to the California Environmental Quality Act (CEQA) for this rule-making activity.

BACKGROUND

Proposed District Regulation 12, Rule 11: Flare Monitoring at Petroleum Refineries is intended to implement control measure SS-15 from the Bay Area 2001 Ozone Attainment Plan. This new rule will require refineries to monitor the volume and composition of gases burned in refinery flares, to calculate flare emissions based on this data, to determine the reasons for flaring, to provide video monitoring of flares, and to report all of this information to the District. The rule will lead to much more accurate estimates of flare emissions, will allow the District to refine its emission inventory for flaring, and will provide information that is likely to lead to reductions in flaring.

For monitoring of the volume of gas directed to flares, the rule establishes range and accuracy requirements that, at present, can be met only by ultrasonic flow monitors. These monitors are called time-of-flight (TOF) ultrasonic monitors. This technology is the best available technology for measuring gas flow for flares.

For monitoring of flare gas composition, the rule allows two primary options: (1) collection of samples for subsequent lab analysis, or (2) use of continuous analyzers that sample gas and analyze it automatically. For the first option, samples can be collected manually or with

an auto-sampler. Samples may also be integrated samples (samples collected over time to pick up variation in composition). For the second option, several continuous analyzer technologies are available: flame ionization detectors (FID), non-dispersive infrared (NDIR) spectrophotometry, and gas chromatography (GC). These methods are widely used by industry and by regulators, but have never been used on flare headers. The rule establishes appropriate methods and procedures for each technology.

The rule allows the two options for composition monitoring, sampling and continuous analyzers, for a number of reasons:

- Each has advantages and disadvantages that may dictate one over the other for the specific flare in question.
- Continuous analyzers, though desirable because of the continuous data they can provide, have not yet been used to monitor flare vent gas. They will require complex and costly sample conditioning systems that may require considerable maintenance due to the variability of materials vented to the flare and the potential for contamination and interference.
- Many flares within the District are rarely used (some have not had any flaring in several years). It would not make sense to impose complex monitoring on these flares when manual sampling should suffice if there is ever a release.

The rule represents a compromise, allowing a method that is known to work (sampling) while encouraging a method that the District would like to see proven in practice (continuous analyzers). This ensures that the rule will work and avoids the risk of rule failure that would come from mandating only continuous analyzers and the missed opportunity that might come from mandating only sampling. District staff expect that the result will be the use of continuous analyzers on some flares and various types of sampling on others.

The proposed rule requires monitoring data, including video images, to be submitted to the District in a monthly report that is due within 30 days after the end of each month. The rule also requires a semi-annual report comparing flow monitoring data for a period of time with a set of data for the same period derived by other methods. This is intended only as a rough check on the meters to catch major calibration or other errors: ultrasonic flow meters are far more accurate than any method proposed to check them.

The rule requirements would be imposed in steps. All refineries would have to start taking daily composition samples within 3 months (some are already doing so). Within 6 months, each refinery will have to have continuous flow monitors in place. In 9 months, each refinery will be required to monitor composition at more frequent intervals using sampling or continuous analyzers.

The proposed rule would apply to the 25 flares located at the five Bay Area refineries: ChevronTexaco in Richmond (9 flares), ConocoPhillips in Rodeo (2 flares), Valero in Benicia (3 flares), Tesoro in Avon (6 flares), and Shell in Martinez (5 flares). Two of the twenty-five are not in service. The cost of the monitoring equipment for a single flare is roughly \$200,000. The District has estimated the annual cost per flare, with equipment costs amortized over ten years and including operating and maintenance costs, to be \$50,000 per flare per year.

At the direction of the APCO/Executive Officer the staff put the development of this rule on a fast track. In developing this rule, the District relied on information and data gathered during the District's flare further study effort. In August 2002, District staff held a workshop in Martinez to discuss basic rule concepts. It began developing a draft rule in late 2002, and in March of this year we shared preliminary drafts of the rule with representatives from the five Bay Area refineries, the Western States Petroleum Association (WSPA), and Communities for a Better Environment (CBE).

In late March and early April, District staff held three community meetings to discuss rule concepts (these meetings were not intended to be workshops). The meetings were held in Richmond, Martinez, and Rodeo. Rule drafts have also been shared with ARB and EPA. After the meetings, the District revised the draft rule and allowed a written comment period from April 7-17, 2003. On April 18th, the District held a flare workgroup meeting involving refiners, WSPA, CBE, representatives of refinery trade unions, vendors of monitoring equipment, ARB staff, and District staff. The publicly noticed version of the rule was then prepared and sent to ARB on April 21st. On May 8th, the District conducted a second workgroup meeting with the same parties. After the second meeting, changes were proposed to the publicly noticed rule and were circulated among meeting participants.

Pursuant to the California Environmental Quality Act (CEQA), the District prepared an initial study to determine the potential environmental impacts of proposed Regulation 12, Rule 11. The study concluded that the proposed rule would not result in any significant environmental impacts.

#### CHANGES TO PROPOSED RULE AFTER PUBLICATION

Changes are proposed to the publicly noticed rule. These changes are a result of a large volume of written comments the District has received at the end of the comment period. (see Comments and Responses in the staff report).

The primary changes to the proposed rule are:

- A limited exemption from hydrocarbon composition monitoring is added for flares that exclusively burn flexi-coker gas (which has a very low hydrocarbon content and little variability).
- Rather than simply require reporting of raw data, a provision is added requiring the monthly report to include emission estimates based on specified flare efficiencies.
- The specifications for flow monitors are expanded to include accuracy requirements.
- The sampling trigger is modified to be identical to the South Coast AQMD trigger.
- Monitor downtime provisions have been modified to allow a grace period for new monitoring technologies that have not been used on flare headers.

#### CONCLUSIONS

The proposed rule represents a reasonable compromise that will provide the District with data in an arena where there is great concern, limited data, and significant speculation. Staff recommends that the Board conduct a hearing on May 21st but continue the hearing to June 4th to allow time for comments on the proposed changes to the rule. Because this is a new rule, because it contains a number of options, and because it encourages new applications of monitoring technologies, we expect that new issues will arise as we work to implement the

rule. Staff therefore recommends that we report to the Board within eighteen months of rule adoption about progress on implementation and on any necessary modifications to the rule.

Respectfully submitted,

William C. Norton  
Chief Executive Officer

Prepared by: Bill Guy and Alex Ezersky  
Reviewed by: Peter Hess

Attachments:

1. Revised Rule Showing Changes from Publicly-Noticed Rule (Dated 5/15/03)
2. Proposed Publicly-Noticed Rule (Dated 4/21/03)
3. Staff Report
4. CEQA Negative Declaration and Initial Study

**REGULATION 12  
MISCELLANEOUS STANDARDS OF PERFORMANCE  
RULE 11  
FLARE MONITORING AT PETROLEUM REFINERIES**

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**REGULATION 12  
MISCELLANEOUS STANDARDS OF PERFORMANCE  
RULE 11  
FLARE MONITORING AT PETROLEUM REFINERIES**

**12-11-100 GENERAL**

**12-11-101 Description:** The purpose of this rule is to require monitoring and recording of emission data for flares at petroleum refineries.

**12-11-110 Exemption, Organic Liquid Storage and Distribution:** The provisions of this rule shall not apply to flares or thermal oxidizers used to control emissions exclusively from organic liquid storage vessels subject to Regulation 8, Rule 5 or exclusively from loading racks subject to Regulation 8 Rules 6, 33, or 39.

**12-11-111 Exemption, Marine Vessel Loading Terminals:** The provisions of this rule shall not apply to flares or thermal oxidizers used to control emissions exclusively from marine vessel loading terminals subject to Regulation 8, Rule 44.

**12-11-112 Exemption, Wastewater Treatment Systems:** The provisions of this rule shall not apply to thermal oxidizers used to control emissions exclusively from wastewater treatment systems subject to Regulation 8, Rule 8.

**12-11-113 Exemption, Pumps:** The provisions of this rule shall not apply to thermal oxidizers used to control emissions exclusively from pump seals subject to Regulation 8, Rule 18. This exemption does not apply when emissions from a pump are routed to a flare header.

**12-11-114 Limited Exemption, Total Hydrocarbon and Methane Composition Monitoring and Reporting:** The provisions of Sections 12-11-401.2, 401.3, 401.5, 502.2 and 502.3 that require monitoring and reporting of total hydrocarbon and methane composition shall not apply to a flare that exclusively burns flexicoker gas with or without supplemental natural gas, provided that the owner or operator demonstrates by weekly sampling and analysis, verified by the APCO, that the methane content and the non-methane content of the vent gas flared are less than 2 percent and 1 percent by volume, respectively.

**12-11-200 DEFINITIONS**

**12-11-201 Flare:** A combustion device that uses an open flame to burn combustible gases with combustion air provided by uncontrolled ambient air around the flame. Flares may be either continuous or intermittent and are not equipped with devices for fuel-air mix control or for temperature control. This term includes both ground and elevated flares.

**12-11-202 Flare Monitoring System:** All sample systems, transducers, transmitters, data acquisition equipment, data recording equipment, video monitoring equipment, and video recording equipment involved in flare monitoring.

**12-11-203 Flaring:** A high-temperature combustion process used to burn vent gases.

**12-11-204 Gas:** The state of matter that has neither independent shape nor volume, but tends to expand indefinitely. For the purposes of this rule, "gas" includes aerosols and the terms "gas" and "gases" are interchangeable.

**12-11-205 Petroleum Refinery:** A facility that processes petroleum, as defined in the North American Industrial Classification Standard No. 32411, and including any associated sulfur recovery plant.

**12-11-206 Pilot Gas:** The gas used to maintain the presence of a flame for ignition of vent gases.

**12-11-207 Purge Gas:** The gas used ~~to maintain a minimum positive pressure~~ to prevent air backflow in the flare system when there is no vent gas.

**12-11-208 Sulfur Recovery Plant:** A process unit that processes sulfur and ammonia containing material and produces a final product of elemental sulfur.



**12-11-209 Thermal Oxidizer:** An enclosed or partially enclosed combustion device that is used to oxidize combustible gases, that generally comes equipped with controls for combustion chamber temperature and often with controls for air/fuel mixture, and that exhausts all combustion products through a vent, duct, or stack so that emissions can be measured directly.

**12-11-210 Vent Gas:** Any gas directed to a flare excluding assisting air or steam, flare pilot gas, and any continuous purge gases.

#### **12-11-400 ADMINISTRATIVE REQUIREMENTS**

**12-11-401 Flare Data Reporting Requirements:** The owner or operator of a flare shall submit a monthly report to the APCO on or before 30 days after the end of each month for each flare subject to this rule. Only one report is required for a staged or cascading flare system if all flares in the system serve the same header or headers. The report shall be in an electronic format approved by the APCO. Each monthly report shall include all of the following:

401.1 The total volumetric flow of vent gas in standard cubic feet for each day and for the month, and, effective for the first full month after the commencement of the monitoring required by Section 12-11-501, for each hour of the month.

401.2 If vent gas composition is monitored using sampling or integrated sampling, total hydrocarbon content as propane by volume, methane content by volume, and, hydrogen sulfide content by volume, for each sample or integrated sample required by Section 12-11-502. If the content of any additional compound or compounds is determined by the analysis of a sample or integrated sample, the content by volume of each additional compound.

401.3 If vent gas composition is monitored by a continuous analyzers or analyzers pursuant to Section 12-11-502, average total hydrocarbon content as propane by volume, average methane content by volume, and, depending upon the analytical method used pursuant to Section 12-11-601, total reduced sulfur content by volume or hydrogen sulfide content by volume of vent gas flared for each hour of the month. If the content of any additional compound or compounds is determined by the continuous analyzer or analyzers, the average content of by volume for each additional compound for each hour of the month.

401.4 If the ~~the~~ flow monitor installed pursuant to Section 12-11-501 measures molecular weight, the average molecular weight for each hour of the month.

401.5 For any pilot and purge gas used, the type of gas used, the volumetric flow for each day and for the month, and the means used to determine flow.

401.6 For any 24-hour period during which more than 1 million standard cubic feet of vent gas was flared, a description of the flaring including the cause, time of occurrence and duration, the source or equipment from which the vent gas originated, and any measures taken to reduce or eliminate flaring.

401.7 Flare monitoring system downtime periods ~~greater than 24 hours~~, including dates and times, ~~and an explanation for each period of inoperation.~~

401.8 The archive of images recorded for the month pursuant to Section 12-11-507.

401.9 For each day and for the month provide calculated methane, non-methane and sulfur dioxide emissions. For the purposes of emission calculations only, a flare control efficiency of 98 percent shall be used for hydrocarbon flares, and a flare control efficiency of 93 percent shall be used for flexi-gas flares.

**12-11-402 Flow Verification Report:** Effective ~~nine~~ twelve months after adoption of this rule and every six months thereafter, the owner or operator of a flare shall submit a flow verification report to the APCO for each flare subject to the rule. The flow verification report shall be included in the corresponding monthly report required by Section 401. Only one report is required for a staged or cascading flare system if all flares in the

system serve the same header or headers. The report shall compare flow as measured by the flow monitoring equipment required by Section 12-11-501 and a flow verification pursuant to Section 12-11-602 for the same period or periods of time. The owner or operator shall demonstrate that the flow verification was performed using good engineering practices. If there are no flaring events as described in Section 12-11-401.6 during the preceding six-month period, a flow verification report is not required for that period.

## 12-11-500 MONITORING AND RECORDS

**12-11-501 Vent Gas Flow Monitoring:** Effective 180 days after adoption of this rule, the owner or operator of a petroleum refinery shall not operate a flare unless vent gas to the flare is continuously monitored for volumetric flow by a device that meets the following requirements:

501.1 The minimum detectable velocity shall be 0.1 foot per second.

501.2 The device shall continuously measure the range of flow rates corresponding to velocities from 0.5 to 275 feet per second in the header in which the device is installed.

501.3 The device shall have a manufacturer's specified accuracy of  $\pm 5\%$  over the range of 1 to 275 feet per second.

~~501.34~~ The device shall be installed at a location where measured volumetric flow is representative of flow to the flare or to the flare system in the case of a staged or cascading flare system consisting of more than one flare.

501.5 Effective 180 days after adoption of this rule, the owner or operator shall provide access for the APCO to verify proper installation and operation of the flare monitoring system.

501.6 Effective 18 months after adoption of this rule, the flow monitoring system shall be maintained to be accurate to within  $\pm 20\%$  as demonstrated by the flow verification report specified in Section 12-11-402.

**12-11-502 Vent Gas Composition Monitoring:** The owner or operator of a petroleum refinery shall not operate a flare unless the following requirements are met:

502.1 Requirements applicable to all vent gas composition monitoring:

1.1 Vent gas monitored for composition, whether by sampling, integrated sampling or continuous monitoring, shall be taken from a location at which samples are representative of vent gas composition. If flares share a common header, a sample from the header will be deemed representative of vent gas composition for all flares served by the header.

1.2 Effective 90 days after the adoption of this rule, the monitoring system shall provide access for the APCO to collect vent gas samples to verify the analyses required by this Section 12-11-502.

502.2 Effective 90 days after adoption of this rule and until the requirements of Section 12-11-502.3 are met, the owner or operator shall monitor vent gas composition through sampling that meets the following requirements:

2.1 For each day on which flaring occurs, a one sample shall be taken during flaring within 30 minutes of the commencement of flaring.

2.2 Samples may be taken from the flare header or from an alternate location at which samples are representative of vent gas composition.

2.3 Samples shall be analyzed pursuant to Section 12-11-601.

502.3 Effective 270 days after adoption of this rule, the owner or operator shall monitor vent gas composition using one of the following three four methods:

3.1 Sampling that meets the following requirements:

a. If the volume flow rate of vent gas flared in any consecutive 15-minute period continuously exceeds 6,000 standard cubic feet 330 standard cubic feet per minute (SCFM), integrated a sample shall be taken sampling shall begin within 15 minutes, except

that, for flares exclusively serving sulfur plant feed streams, a sample shall be taken within 1 hour. The sampling frequency thereafter shall be one sample every three hours and shall continue until the volume flow rate of vent gas flared in any consecutive 15-minute period is continuously 330 SCFM-6,000 standard cubic feet or less. In no case shall a sample be required more frequently than once every 3 hours.

~~b. Integrated sampling shall consist of a minimum of one aliquot for each 15-minute period until the sample container is full. If sampling is still required pursuant to Section 12-11-502.3.1.a, a new sample container shall be placed in service within one hour after the previous container was filled.~~

~~eb. Samples shall be analyzed pursuant to Section 12-11-601.~~

3.2 Integrated sampling that meets the following requirements:

a. If the flow rate of vent gas flared in any consecutive 15 minute period continuously exceeds 330 standard cubic feet per minute (SCFM), integrated sampling shall begin within 15 minutes and shall continue until the flow rate of vent gas flared in any consecutive 15 minute period is continuously 330 SCFM or less.

b. Integrated sampling shall consist of a minimum of one aliquot for each 15-minute period until the sample container is full. If sampling is still required pursuant to Section 12-11-502.3.2a, a new sample container shall be placed in service within one hour after the previous container was filled. A sample container shall not be used for a sampling period that exceeds 24 hours.

c. Samples shall be analyzed pursuant to Section 12-11-601.

3.23 Continuous analyzers that meet the following requirements:

a. The analyzers shall continuously monitor for total hydrocarbon, methane, and, depending upon the analytical method used pursuant to Section 12-11-601, hydrogen sulfide or total reduced sulfur.

b. The hydrocarbon analyzer shall have a full-scale range of 100% total hydrocarbon.

c. Each analyzer shall be maintained to be accurate to within ~~twenty percent~~ 20% when compared to any field accuracy tests or to within 5% of full scale.

3.34 A continuous analyzer employing gas chromatography that meets the following requirements:

a. The gas chromatography system shall monitor for total hydrocarbon, methane, and hydrogen sulfide.

b. The gas chromatography system shall be maintained to be accurate to within 5% of full scale.

**12-11-503 Pilot Monitoring:** Any flare subject to this rule must be equipped and operated with an automatic igniter or a continuous burning pilot, which must be maintained in good working order. If a pilot flame is employed, the flame shall be monitored with a device to detect the presence of the pilot flame. If an electric arc ignition system is employed, the system shall pulse on detection of loss of pilot flame and until the pilot flame is reestablished.

**12-11-504 Pilot and Purge Gas Monitoring:** The owner or operator of a petroleum refinery shall not operate a flare unless (1) volumetric flows of purge and pilot gases are monitored by flow measuring devices, or (2) other parameters are monitored so that volumetric flows of pilot and purge gas may be calculated based on pilot design and the parameters monitored.

**12-11-505 Recordkeeping Requirements:** Except as provided in Section 12-11-507, the owner or operator of a flare shall maintain records for all the information required to

be monitored for a period of five years and make such records available to the APCO upon request.

**12-11-506 General Monitoring Requirements:** Persons responsible for monitoring subject to this rule shall comply with the following:

- 506.1 Periods of flare monitoring system inoperation greater than 24 continuous hours shall be reported by the following working day, followed by notification of resumption of monitoring. Adequate proof of expeditious repair shall be furnished to the APCO for downtime in excess of fifteen consecutive days. ~~Periods of monitor inoperation shall not exceed 30 days per calendar year.~~ Periods of inoperation of the vent gas flow monitoring required by Section 12-11-501 shall not exceed 30 days per calendar year. Periods of inoperation of the vent gas composition monitoring specified in Section 12-11-502.3.1 (grab sampling) shall not exceed 30 days per calendar year. Effective 450 days after the adoption of this rule, periods of inoperation of vent gas composition monitoring specified in Sections 12-11-502.3.2 (integrated sampling) and 12-11-502.3.4 (gas chromatography) shall not exceed 30 days per calendar year. Effective 450 days after the adoption of this rule, periods of inoperation of the vent gas composition monitoring specified in Section 12-11-503.3.3 (continuous analyzers) shall not exceed 30 days per calendar year per analyzer. Periods of inoperation of video monitoring specified in Section 12-11-507 shall not exceed 30 days per calendar year.
- 506.2 During periods of inoperation of continuous analyzers or auto-samplers installed pursuant to Section 12-11-502, persons responsible for monitoring shall take samples as required by Section 12-11-502.2.1. During periods of inoperation of flow monitors required by Section 12-11-501, flow shall be calculated using good engineering practices.
- 506.3 The person(s) responsible for monitors subject to this rule shall maintain and calibrate all required monitors and recording devices in accordance with the applicable manufacturer's specifications. In order to claim that a manufacturer's specification is not applicable, the person responsible for emissions must have, and follow, a written maintenance policy that was developed for the device in question. The written policy must explain and justify the difference between the written procedure and the manufacturer's procedure.
- 506.4 Data Recording System: All in-line continuous analyzer and flow monitoring data must be continuously recorded by an electronic data acquisition system capable of one-minute averages. Flow monitoring data shall be recorded as one-minute averages.

**12-11-507 Video Monitoring:** For each flare equipped with video monitoring capability as of January 1, 2003, the owner or operator of a flare subject to this rule shall, effective 90 days after adoption of this rule, install and maintain equipment that records a real-time digital image of the flare and flame at a frame rate of no less than 1 frame per minute. The recorded image of the flare shall be of sufficient size, contrast, and resolution to be readily apparent in the overall image or frame. The image shall include an embedded date and time stamp. The equipment shall archive the images for each 24-hour period. Effective 180 days after adoption of this rule, for any flare for which the report required by Section 12-11-401 shows that more than 1.2 million standard cubic feet of vent gas was flared in any 24-hour period, the owner or operator of the flare shall, within 90 days after the end of the month covered by the report, meet the same requirements as those imposed by this Section for flares with existing video monitoring capability.

**12-11-600 MANUAL OF PROCEDURES**

**12-11-601 Testing, Sampling, and Analytical Methods:**

- 601.1 Samples and integrated samples shall be analyzed using the following test methods, or latest revision, where applicable:
- 1.1 Total hydrocarbon content and methane content of vent gas shall be determined using ASTM Method D1945-96, ASTM Method UOP 539-97, or EPA Method 18.
  - 1.2 Hydrogen sulfide content of vent gas shall be determined using ASTM Method D1945-96 or ASTM Method UOP 539-97.
  - 1.3 Any alternative method to the above methods if approved by the APCO and EPA.
- 601.2 Except as provided in Section 12-11-601.3, if vent gas composition is monitored using continuous analyzers, the analyzers shall employ the following methods, or latest revision, where applicable:
- 2.1 Total hydrocarbon content and methane content of vent gas shall be determined using EPA Method 25A or 25B.
  - 2.2 Total reduced sulfur content of vent gas shall be determined using ASTM Method D4468-85.
  - 2.3 Hydrogen sulfide content shall be determined using ASTM Method D4084-94.
  - 2.4 Any alternative method to the above methods if approved by the APCO and EPA.
- 601.3 If vent gas composition is monitored with a continuous analyzer employing gas chromatography, the following requirements shall be met:
- 3.1 ASTM Method D1945-96 or latest revision, or ASTM Method UOP 539-97 or latest revision shall be used.
  - 3.2 The system shall analyze samples for total hydrocarbon content, methane content, and hydrogen sulfide content.
  - 3.3 The minimum sampling frequency shall be one sample every 30 minutes.
  - 3.4 Any alternative method to the above methods if approved by the APCO and EPA.

**12-11-602 Flow Verification Test Methods:** For purposes of the semi-annual verification required by Section 12-11-402, vent gas flow shall be determined using one or more of the following methods:

- 602.1 District Manual of Procedures, Volume IV, ST-17 and ST-18;
- 602.2 EPA Methods 1 and 2;
- 602.3 Other flow monitoring devices or process monitors.
- 602.4 Any verification method recommended by the manufacturer of the flow monitoring equipment installed pursuant to Section 12-11-501.
- 602.5 Tracer gas dilution or velocity.
- 602.6 Any alternative method approved by the APCO and EPA.

**REGULATION 12  
MISCELLANEOUS STANDARDS OF PERFORMANCE  
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**REGULATION 12  
MISCELLANEOUS STANDARDS OF PERFORMANCE  
RULE 11  
FLARE MONITORING AT PETROLEUM REFINERIES**

**12-11-100 GENERAL**

- 12-11-101 Description:** The purpose of this rule is to require monitoring and recording of emission data for flares at petroleum refineries.
- 12-11-110 Exemption, Organic Liquid Storage and Distribution:** The provisions of this rule shall not apply to flares or thermal oxidizers used to control emissions exclusively from organic liquid storage vessels subject to Regulation 8, Rule 5 or exclusively from loading racks subject to Regulation 8 Rules 6, 33, or 39.
- 12-11-111 Exemption, Marine Vessel Loading Terminals:** The provisions of this rule shall not apply to flares or thermal oxidizers used to control emissions exclusively from marine vessel loading terminals subject to Regulation 8, Rule 44.
- 12-11-112 Exemption, Wastewater Treatment Systems:** The provisions of this rule shall not apply to thermal oxidizers used to control emissions exclusively from wastewater treatment systems subject to Regulation 8, Rule 8.
- 12-11-113 Exemption, Pumps:** The provisions of this rule shall not apply to thermal oxidizers used to control emissions exclusively from pump seals subject to Regulation 8, Rule 18. This exemption does not apply when emissions from a pump are routed to a flare header.

**12-11-200 DEFINITIONS**

- 12-11-201 Flare:** A combustion device that uses an open flame to burn combustible gases with combustion air provided by uncontrolled ambient air around the flame. Flares may be either continuous or intermittent and are not equipped with devices for fuel-air mix control or for temperature control. This term includes both ground and elevated flares.
- 12-11-202 Flare Monitoring System:** All sample systems, transducers, transmitters, data acquisition equipment, data recording equipment, video monitoring equipment, and video recording equipment involved in flare monitoring.
- 12-11-203 Flaring:** A high-temperature combustion process used to burn vent gases.
- 12-11-204 Gas:** The state of matter that has neither independent shape nor volume, but tends to expand indefinitely. For the purposes of this rule, "gas" includes aerosols and the terms "gas" and "gases" are interchangeable.
- 12-11-205 Petroleum Refinery:** A facility that processes petroleum, as defined in the North American Industrial Classification Standard No. 32411, and including any associated sulfur recovery plant.
- 12-11-206 Pilot Gas:** The gas used to maintain the presence of a flame for ignition of vent gases.
- 12-11-207 Purge Gas:** The gas used to maintain a minimum positive pressure to prevent air backflow in the flare system when there is no vent gas.
- 12-11-208 Sulfur Recovery Plant:** A process unit that processes sulfur and ammonia containing material and produces a final product of elemental sulfur.
- 12-11-209 Thermal Oxidizer:** An enclosed or partially enclosed combustion device that is used to oxidize combustible gases, that generally comes equipped with controls for combustion chamber temperature and often with controls for air/fuel mixture, and that exhausts all combustion products through a vent, duct, or stack so that emissions can be measured directly.
- 12-11-210 Vent Gas:** Any gas directed to a flare excluding assisting air or steam, flare pilot gas, and any continuous purge gases.

**12-11-400 ADMINISTRATIVE REQUIREMENTS**

**12-11-401 Flare Data Reporting Requirements:** The owner or operator of a flare shall submit a monthly report to the APCO on or before 30 days after the end of each month for each flare subject to this rule. Only one report is required for a staged or cascading flare system if all flares in the system serve the same header or headers. The report shall be in an electronic format approved by the APCO. Each monthly report shall include all of the following:

- 401.1 The total volumetric flow of vent gas in standard cubic feet for each day and for the month, and, effective for the first full month after the commencement of the monitoring required by Section 12-11-501, for each hour of the month.
- 401.2 If vent gas composition is monitored using integrated sampling, total hydrocarbon content as propane, methane content, and, hydrogen sulfide content for each sample required by Section 12-11-502.
- 401.3 If vent gas composition is monitored by continuous analyzers pursuant to Section 12-11-502, average total hydrocarbon content as propane, average methane content, and, depending upon the analytical method used pursuant to Section 12-11-601, total reduced sulfur content or hydrogen sulfide content of vent gas flared for each hour of the month.
- 401.4 If the the flow monitor installed pursuant to Section 12-11-501 measures molecular weight, the average molecular weight for each hour of the month.
- 401.5 For any pilot and purge gas used, the type of gas used, the volumetric flow for each day and for the month, and the means used to determine flow.
- 401.6 For any 24-hour period during which more than 1 million standard cubic feet of vent gas was flared, a description of the flaring including the cause, time of occurrence and duration, the source or equipment from which the vent gas originated, and any measures taken to reduce or eliminate flaring.
- 401.7 Flare monitoring system downtime periods greater than 24 hours, including dates and times, and an explanation for each period of inoperation.
- 401.8 The archive of images recorded for the month pursuant to Section 12-11-507.

**12-11-402 Flow Verification Report:** Effective nine months after adoption of this rule and every six months thereafter, the owner or operator of a flare shall submit a report to the APCO for each flare subject to the rule. Only one report is required for a staged or cascading flare system if all flares in the system serve the same header or headers. The report shall compare flow as measured by the flow monitoring equipment required by Section 12-11-501 and a flow verification pursuant to Section 12-11-602 for the same period or periods of time.

**12-11-500 MONITORING AND RECORDS**

**12-11-501 Vent Gas Flow Monitoring:** Effective 180 days after adoption of this rule, the owner or operator of a petroleum refinery shall not operate a flare unless vent gas to the flare is continuously monitored for volumetric flow by a device that meets the following requirements:

- 501.1 The minimum detectible velocity shall be 0.1 foot per second.
- 501.2 The device shall continuously measure the range of flow rates corresponding to velocities from 0.5 to 275 feet per second in the header in which the device is installed.
- 501.3 The device shall be installed at a location where measured volumetric flow is representative of flow to the flare or to the flare system in the case of a staged or cascading flare system consisting of more than one flare.

**12-11-502 Vent Gas Composition Monitoring:** The owner or operator of a petroleum refinery shall not operate a flare unless the following requirements are met:

- 502.1 Requirements applicable to all vent gas composition monitoring:



- 1.1 Vent gas monitored for composition, whether by sampling or continuous monitoring, shall be taken from a location at which samples are representative of vent gas composition. If flares share a common header, a sample from the header will be deemed representative of vent gas composition for all flares served by the header.
  - 1.2 The monitoring system shall provide access for the APCO to collect vent gas samples to verify the analysis required by this Section.
- 502.2 Effective 90 days after adoption of this rule and until the requirements of Section 12-11-502.3 are met, the owner or operator shall monitor vent gas composition through sampling that meets the following requirements:
- 2.1 For each day on which flaring occurs, a sample shall be taken during flaring.
  - 2.2 Samples may be taken from the flare header or from an alternate location at which samples are representative of vent gas composition.
  - 2.3 Samples shall be analyzed pursuant to Section 12-11-601.
- 502.3 Effective 270 days after adoption of this rule, the owner or operator shall monitor vent gas composition using one of the following three methods:
- 3.1 Sampling that meets the following requirements:
    - a. If the volume of vent gas flared in any consecutive 15-minute period exceeds 6,000 standard cubic feet, integrated sampling shall begin within 15 minutes and shall continue until the volume of vent gas in any consecutive 15-minute period is 6,000 standard cubic feet or less.
    - b. Integrated sampling shall consist of a minimum of one aliquot for each 15-minute period until the sample container is full. If sampling is still required pursuant to Section 12-11-502.3.1.a, a new sample container shall be placed in service within one hour after the previous container was filled.
    - c. Samples shall be analyzed pursuant to Section 12-11-601.
  - 3.2 Continuous analyzers that meet the following requirements:
    - a. The analyzers shall continuously monitor for total hydrocarbon, methane, and, depending upon the analytical method used pursuant to Section 12-11-601, hydrogen sulfide or total reduced sulfur.
    - b. The hydrocarbon analyzer shall have a full-scale range of 100% total hydrocarbon.
    - c. Each analyzer shall be maintained to be accurate to within twenty percent when compared to any field accuracy tests or to within 5% of full scale.
  - 3.3 Gas chromatography that meets the following requirements:
    - a. The gas chromatography system shall monitor for total hydrocarbon, methane, and hydrogen sulfide.
    - b. The gas chromatography system shall be maintained to be accurate to within 5% of full scale.
- 12-11-503 Pilot Monitoring:** Any flare subject to this rule must be equipped and operated with an automatic igniter or a continuous burning pilot, which must be maintained in good working order. If a pilot flame is employed, the flame shall be monitored with a device to detect the presence of the pilot flame. If an electric arc ignition system is employed, the system shall pulse on detection of loss of pilot flame and until the pilot flame is reestablished.
- 12-11-504 Pilot and Purge Gas Monitoring:** The owner or operator of a petroleum refinery shall not operate a flare unless (1) volumetric flows of purge and pilot gases are monitored by flow measuring devices, or (2) other parameters are monitored so that volumetric flows of pilot and purge gas may be calculated based on pilot design and the parameters monitored.

**12-11-505 Recordkeeping Requirements:** Except as provided in Section 12-11-507, the owner or operator of a flare shall maintain records for all the information required to be monitored for a period of five years and make such records available to the APCO upon request.

**12-11-506 General Monitoring Requirements:** Persons responsible for monitoring subject to this rule shall comply with the following:

- 506.1 Periods of flare monitoring system inoperation greater than 24 continuous hours shall be reported by the following working day, followed by notification of resumption of monitoring. Adequate proof of expeditious repair shall be furnished to the APCO for downtime in excess of fifteen consecutive days. Periods of monitor inoperation shall not exceed 30 days per calendar year.
- 506.2 During periods of inoperation of continuous analyzers installed pursuant to Section 12-11-502, persons responsible for monitoring shall take samples as required by Section 12-11-502.2.1. During periods of inoperation of flow monitors required by Section 12-11-501, flow shall be calculated using good engineering practices.
- 506.3 The person(s) responsible for monitors subject to this rule shall maintain and calibrate all required monitors and recording devices in accordance with the applicable manufacturer's specifications. In order to claim that a manufacturer's specification is not applicable, the person responsible for emissions must have, and follow, a written maintenance policy that was developed for the device in question. The written policy must explain and justify the difference between the written procedure and the manufacturer's procedure.
- 506.4 Data Recording System: All in-line continuous analyzer and flow monitoring data must be continuously recorded by an electronic data acquisition system capable of one-minute averages. Flow monitoring data shall be recorded as one-minute averages.

**12-11-507 Video Monitoring:** For each flare equipped with video monitoring capability as of January 1, 2003, the owner or operator of a flare subject to this rule shall, effective 90 days after adoption of this rule, install and maintain equipment that records a real-time image of the flare and flame at a frame rate of no less than 1 frame per minute. The recorded image of the flare shall be of sufficient size, contrast, and resolution to be readily apparent in the overall image or frame. The image shall include an embedded date and time stamp. The equipment shall archive the images for each 24-hour period. Effective 180 days after adoption of this rule, for any flare for which the report required by Section 12-11-401 shows that more than 1.2 million standard cubic feet of vent gas was flared in any 24-hour period, the owner or operator of the flare shall, within 90 days after the end of the month covered by the report, meet the same requirements as those imposed by this Section for flares with existing video monitoring capability.

## **12-11-600 MANUAL OF PROCEDURES**

### **12-11-601 Testing, Sampling, and Analytical Methods:**

- 601.1 Integrated samples shall be analyzed using the following test methods where applicable:
  - 1.1 Total hydrocarbon content and methane content of vent gas shall be determined using ASTM Method D1945-96, ASTM Method UOP 539-97, or EPA Method 18.
  - 1.2 Hydrogen sulfide content of vent gas shall be determined using ASTM Method D1945-96 or ASTM Method UOP 539-97.
  - 1.3 Any alternative method to the above methods if approved by the APCO and EPA.

- 601.2 Except as provided in Section 12-11-601.3, if vent gas composition is monitored using continuous analyzers, the analyzers shall employ the following methods where applicable:
  - 2.1 Total hydrocarbon content and methane content of vent gas shall be determined using EPA Method 25A or 25B.
  - 2.2 Total reduced sulfur content of vent gas shall be determined using ASTM Method D4468-85.
  - 2.3 Hydrogen sulfide content shall be determined using ASTM Method D4084-94.
  - 2.4 Any alternative method to the above methods if approved by the APCO and EPA.
- 601.3 If vent gas composition is monitored with a continuous analyzer employing gas chromatography, the following requirements shall be met:
  - 3.1 ASTM Method D1945-96 or ASTM Method UOP 539-97 shall be used.
  - 3.2 The system shall analyze samples for total hydrocarbon content, methane content, and hydrogen sulfide content.
  - 3.3 The minimum sampling frequency shall be one sample every 30 minutes.
  - 3.4 Any alternative method to the above methods if approved by the APCO and EPA.

**12-11-602 Flow Verification Test Methods:** For purposes of the semi-annual verification required by Section 12-11-402, vent gas flow shall be determined using one or more of the following methods:

- 602.1 District Manual of Procedures, Volume IV, ST-17 and ST-18;
- 602.2 EPA Methods 1 and 2;
- 602.3 Other flow monitoring devices or process monitors.
- 602.4 Any verification method recommended by the manufacturer of the flow monitoring equipment installed pursuant to Section 12-11-501.
- 602.5 Tracer gas dilution or velocity.
- 602.6 Any alternative method approved by the APCO and EPA.

**Bay Area Air Quality Management District**

939 Ellis Street  
San Francisco, CA 94109

**Proposed  
Regulation 12, Rule 11:  
Flare Monitoring at Petroleum Refineries**

**Staff Report**

**May 2003**

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# EXECUTIVE SUMMARY

Proposed District Regulation 12, Rule 11: Flare Monitoring at Petroleum Refineries is intended to implement control measure SS-15 from the Bay Area 2001 Ozone Attainment Plan. This new rule would require refineries to monitor the volume and composition of gases burned in refinery flares, to calculate flare emissions based on this data, to determine the reasons for flaring, to report all of this information to the District, and to provide video monitoring of flares. The rule will lead to much more accurate estimates of flare emissions, will allow the District to refine its emission inventory for flaring, and will provide information that is likely to lead to reductions in flaring.

Flares are primarily intended as safety and pollution control devices. They burn gases that cannot be used by the refinery and prevent their direct release to the atmosphere. The proposed rule would require the monitoring of these gases. The primary parameters to be monitored are vent gas flow to the flare and vent gas composition.

For monitoring of the volume of gas directed to flares, the rule establishes range and accuracy requirements that, at present, can be met only by ultrasonic flow monitors. These monitors are called time-of-flight (TOF) ultrasonic monitors. They determine flow velocity by measuring the time required for ultrasonic waves to travel in the flare gas from an "upstream" probe to a "downstream" probe and by comparing the time to that required for the slower "upstream" trip. This technology is the best available technology for measuring gas flow for flares. Two of the Bay Area refineries already have older ultrasonic monitors, but the rule would require all of the refineries to install newer, more sophisticated, and more accurate monitors.

For monitoring of flare gas composition, the rule allows two primary options: (1) collection of samples for subsequent lab analysis, or (2) use of continuous analyzers that sample gas and analyze it automatically. For the first option, samples can be collected with an auto-sampler or manually. Manual sampling is expected to be limited to infrequently used flares. For the second option, a number of continuous analyzer technologies are available: flame ionization detectors (FID), non-dispersive infrared (NDIR) spectrophotometry, and gas chromatography (GC). These methods are widely used by industry and by regulators, but have never been used on flare headers. The rule establishes appropriate methods and procedures for each technology.

The rule allows the two options, sampling and continuous analyzers, because each has advantages and disadvantages that may dictate one over the other for the specific flare in question. Sampling is a proven approach that will, over time, build a large set of data for each flare for which it is used. Continuous analyzers, though desirable because of the continuous data they can provide, have not yet been used to monitor flare vent gas, which is not as "clean" as most gas streams for which these analyzers are used. Use of continuous analyzers will require sample conditioning equipment that may be difficult to design and may require considerable maintenance. The rule represents a compromise, allowing a method that is known to work (sampling) while encouraging a method that the District would like to see proven in practice (continuous analyzers). This ensures that the rule will work and avoids the risk of rule failure that would come from mandating only continuous analyzers and the missed opportunity that



might come from mandating only sampling. District staff expect that the result may be the use of continuous analyzers on some flares and sampling on others.

The proposed rule requires monitoring data to be submitted to the District in a monthly report that is due within 30 days after the end of each month. The report must include flow data, composition data, emissions estimates, descriptions of all flaring activity, information on any downtime for the monitors, and the archive of video images recorded for the month. The rule also requires a semi-annual report comparing flow monitor data for a period of time with a set of data for the same period derived by other methods. The comparison data can come from methods approved by the monitor manufacturer, from flow volume or velocity measurements using tracer gases, from flow measurements with pitot tubes, or from data derived from other methods approved by the District.

The proposed rule also requires video monitoring of flares. The flare image is required to be recorded, and the recorded images for each month must be submitted with the monthly report. This will allow the District to examine flare imagery to help explain any flaring, to respond to any community concerns or complaints, and to ensure that monitor data corresponds with the images.

The rule requirements would be imposed in steps that are based upon the District's determination about the length of time required to install the necessary equipment. All refineries would have to start taking daily composition samples within 3 months (some are already doing so). Within 6 months, each refinery will have to have continuous flow monitors in place. In 9 months, each refinery will be required to monitor composition at more frequent intervals using sampling or continuous analyzers.

The proposed rule would apply to the 25 flares located at the five Bay Area refineries: ChevronTexaco in Richmond (9 flares), ConocoPhillips in Rodeo (2 flares), Valero in Benicia (3 flares), Tesoro in Avon (6 flares), and Shell in Martinez (5 flares). Two of the twenty-five are not in service. All of the flares in service are currently monitored for some parameter, typically flow or vent gas heating value. The proposed rule would require that all of the refineries upgrade their current monitoring equipment, but the new equipment necessary and the costs involved would vary greatly, depending upon the sophistication of the currently-installed equipment. The District has estimated a range of costs for a refinery based on costs for the various options allowed under the proposed rule. The cost of the monitoring equipment for a single flare is roughly \$200,000. The District has estimated the annual cost per flare, with equipment costs amortized over ten years and including operating and maintenance costs, to be \$50,000 per flare per year.

In developing this rule, the District relied on information and data gathered during the District's flare further study effort. In August 2002, District staff held a workshop in Martinez to discuss basic rule concepts. It began developing a draft rule in late 2002, and in March shared preliminary drafts with representatives from the five Bay Area refineries, the Western States Petroleum Association (WSPA), and Communities for a Better Environment (CBE). In late March and early April, District staff held three community meetings to discuss detailed rule

concepts. The meetings were held in Richmond, Martinez, and Rodeo. Rule drafts were also shared with ARB and EPA.

After the proposed rule was developed for the May 21st Board hearing, the District convened the flare workgroup that has been working on the District's flare further study (further study measure FS-8 from the Bay Area 2001 Ozone Attainment Plan) to discuss the proposed rule. Additional issues were identified, and a revised rule is now proposed for adoption by the Board. To avoid confusion, this staff report refers to the rule prepared and made available with the public notice for the May 21st hearing as the "proposed rule." This is in keeping with standard terminology used by ARB, air districts, and the Health and Safety Code (§§40725, 40726). The revised version of the rule now proposed for adoption is called the "revised rule." Earlier drafts of the rule are called "earlier drafts."

Pursuant to the California Environmental Quality Act (CEQA), the District prepared an initial study to determine the potential environmental impacts of proposed Regulation 12, Rule 11. The study identified the construction work required to install monitors as a source of potential environmental impacts. However, because of the safety requirements that govern this type of work, the regularity with which similar hot work is conducted in refineries, and the consequent familiarity with and preparedness for this type of work on the part of refinery workers and contractors, the study concluded that the proposed rule would not result in any significant environmental impacts. The document was circulated for comment, and no comments were received.

## **BACKGROUND**

Flares provide a safety and emission control mechanism for refinery blowdown systems. Blowdown systems collect and separate both liquid and gaseous discharges from various refinery process units and equipment. The systems generally recover liquids and send gases to the fuel gas system for use in refinery combustion. However, when the heating value of the gas stream is insufficient, when the stream is intermittent, or when the stream exceeds what is necessary to satisfy refinery combustion needs, flares combust these gases and prevent their direct release to the atmosphere. Flares are designed to handle large fluctuations in the flow rate and hydrocarbon content of gases.

### **Flares and Similar Devices**

A number of different devices may be called flares. A flare, as defined in the proposed rule, is a combustion device that uses an open flame to burn combustible gases with combustion air provided by uncontrolled ambient air surrounding the flame. The term is most commonly applied to the open air flare. It is also commonly applied to ground flares, which are located at ground level and typically have an enclosure around the open flame. The term "enclosed flare" may also be applied to this type of flare, regardless whether it is located at ground level. Flares, whether "open air," "ground," or "enclosed," rely on surrounding air for combustion and do not have any mechanism for control of this combustion air.

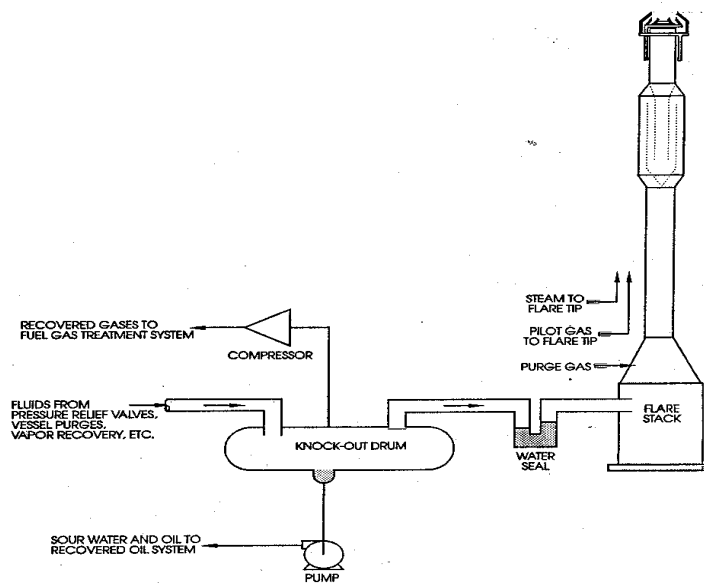
The term "thermal oxidizer" is sometimes used as a broad term to apply to many types of devices that oxidize combustible gases, including flares. However, the term is more properly applied to enclosed devices that, unlike flares, control the mixing of combustion air and fuel. As defined in the proposed rule, a thermal oxidizer is an enclosed or partially enclosed combustion device that is used to oxidize combustible gases, that generally comes with controls for combustion temperature and often with controls for air/fuel mixture, and that exhausts all combustion products through a vent, duct, or stack so that emissions can be measured directly.

In general, flares are used to control units and operations from which gas flows may be intermittent and may range from very low flows to very high flows. They are accepted as the most reliable way to ensure that the potentially enormous flows that may result from an upset or shutdown of a large refinery unit, a large block of units, or an entire refinery can be controlled.

Thermal oxidizers are generally used to control emissions from sources or operations for which flows are lower and more stable. These sources include wastewater systems, loading racks, storage vessels, pumps or compressors, and some relief systems on small process units. Because of the greater control over combustion afforded by temperature and mixture controls, thermal oxidizers typically have very high combustion efficiency. Thermal oxidizers are typically subject to permit conditions requiring combustion efficiency of 98% or higher. Because combustion products pass through a vent, a duct, or a stack, the combustion efficiency of thermal oxidizers can be verified by source tests.

## Flare Design and Operation

The open air flare is the predominant design type in the Bay Area. These flares are designed to handle large fluctuations in the flow rate and hydrocarbon content of gases. They are used to prevent releases of uncombusted materials generated during maintenance activities, emergency events such as power and equipment failures, and to a lesser extent as a control device for materials that cannot be recovered.



**Figure 1. Typical Flare System**

The diagram above illustrates a typical general service flare system. The system is a component of the refinery blowdown system. The blowdown system is designed to collect gases and liquids released throughout the refinery and direct them to the refinery recovery system or, when there is insufficient capacity to recover them, to a flare. These gases and liquids may be released for many different reasons. They may be normal byproducts of a process unit or vessel, they may result from an upset in a process unit, or they may come from refinery process units during startup and shutdown when the balance between gas generation and the combustion of that gas for process heat is disrupted.

The blowdown system delivers gases and liquids to a knockout drum that captures liquids and directs them to the oil recovery stream. The refinery flare gas compressors then direct gases to the fuel gas system. The extent to which these gases can be captured depends upon the capacity of the compressors. A refinery in good balance should be able to capture most of the gases delivered to the blowdown system during normal operations and use them to heat process units. This is not the case if a refinery has insufficient compressor capacity or when there is an upset or accident, and the volume of gases is too great for the compressors to handle.

## Emissions from Flares

Flares produce air pollutants through two primary mechanisms. The first mechanism is incomplete combustion. Like all combustion devices, flares do not combust all of the fuel directed to them. Combustion efficiency is the extent to which the oxidation reactions that occur in combustion are complete reactions converting the gases entering the flare into fully oxidized combustion products. Combustion efficiency may be stated in terms of the extent to which all gases entering the flare are combusted, typically called "overall combustion efficiency" or simply "combustion efficiency", or it may be stated as the efficiency of combustion for some constituent of the flare gas as, for example, "hydrocarbon destruction efficiency."

The second mechanism of pollutant generation is through the oxidation of flare gases to form other pollutants. As an example, the gases that are burned in flares typically contain sulfur in varying amounts. Combustion oxidizes these sulfur compounds to form sulfur dioxide, a pollutant. In addition, combustion also produces relatively minor amounts of nitrogen oxides through oxidation of the nitrogen in flare gas or atmospheric nitrogen in combustion air.

Unlike internal combustion devices like engines and turbines, flares combust fuel in the open air, and combustion products are not contained and emitted through a stack, a duct, or an exhaust pipe. As a result, emission measurement is difficult.

Studies can be conducted on small flares under a hood or in a wind tunnel where all combustion products can be captured. Any results for these small flares must be adjusted with scaling factors if they are to be applied to full-size flares. For full-size operating industrial flares, which may have a diameter of four feet or more and a stack height of 200 feet or more, all combustion products cannot be captured and measured. To study emissions from these flares, emissions can be sampled with downwind test probes attached to the stack, a tower, or a crane. Emissions can also be studied using remote sensing technologies like open-path Fourier transform infrared technology (FTIR) or differential absorption lidar (DIAL). In applying the results of any particular study to a specific flare or flare type, it is important to note any differences in flare design and construction. For example, some flares are simply open pipes, while others, like most refinery flares, have flare tips that are engineered to promote mixing. In addition, studies suggest that composition and BTU content of gas burned, gas flow rates, flare operating conditions, and environmental factors like wind speed may affect, to varying extents, the efficiency of flare combustion.

The question of flare combustion efficiency is one of the issues being explored by the Technical Committee of the BAAQMD Advisory Council. On April 1, 2003, District staff and representatives from Bay Area refineries made presentations to the Committee on various flare issues, including combustion efficiency. The Committee has indicated that it intends to examine the efficiency issue and may invite experts to appear before it.

## Bay Area Flares and Existing Monitoring Equipment

There are 25 flares at the five Bay Area refineries. Two of these flares are not in operation. All of these flares in service have some existing monitoring equipment to monitor one or more of the following parameters: (1) hydrogen sulfide content of the fuel gas used for the pilot, (2) status of the pilot light, (3) flame appearance to insure a smokeless operation, (4) heating value of the gases, (5) compliance with limits on the amount of material processed at the flare, (6) quantity of fuel gas, and (7) total reduced sulfur content. Table 2 on the following page lists flares that would be subject to the proposed rule. For each flare, the table lists the existing monitoring equipment and the reason or reasons that the equipment is installed.

**Table 1: Existing Flare Monitoring**

Site & Source #	Service	Parameter Monitored	Monitor Type	Basis <sup>1</sup>
<b>Chevron</b>				
6006	LSFO Low Level Flare		N/A	Disconnected
6010	LSFO High Level Flare	Pilot & purge gas, btu & HHV	Flow transmitter & chart	PC
6012	South Isomax	Pilot gas, btu & HHV	Rotameter	PC
6013	North Isomax	Purge gas, btu & HHV	Field meter	PC
6015	D&R Flare	Pilot & purge gas, btu & HHV	Flow transmitter & chart	PC, NSPS
6016	FCC Flare	Pilot & purge gas, btu & HHV	Flow transmitter & chart	PC
6017	SRU Flare	Pilot & purge gas, btu & HHV	Flow transmitter & chart	PC
6019	Alky Flare	Pilot & purge gas, btu & HHV	Flow transmitter & chart	PC
6039	Lube Flare (RLOP)	Pilot & purge, btu & HHV	Rotameter	PC
<b>Shell</b>				
1471	LOP Auxiliary Flare	Flow, molecular wt.	Ultrasonic	PC
1472	LOP Main Flare	Flow, molecular wt.	N/A	Blinded Off
1771	FXG Flare	H <sub>2</sub> S, flow	Venturi	PC, NSPS
1772	HC Flare	H <sub>2</sub> S, flow	Orifice	PC, NSPS
4201	Delayed Coking Flare	Molecular wt., sulfur, btu/scf, fuel flow		PC, NSPS
<b>ConocoPhillips</b>				
297	C-1 Flare	Flow	Ultrasonic, anemometer	PC, NSPS
398	C-602 Flare	Flow	Ultrasonic	PC, NSPS
<b>Tesoro</b>				
854	East Air Flare	Flow, sulfur	Ultrasonic	PC, NSPS
944	North Coker Flare	Flow, sulfur	Ultrasonic	PC, NSPS
945	South Coker Flare	Flow, sulfur	Ultrasonic	PC, NSPS
992	Emergency Flare	Flow, sulfur	Ultrasonic	PC, NSPS
1012	West Air Flare	Flow, sulfur	Ultrasonic	PC, NSPS
1013	Ammonia Flare	Flow		

Site & Source #	Service	Parameter Monitored	Monitor Type	Basis <sup>1</sup>
<b>Valero</b>				
16	Acid Gas Flare	Purge flow	Orifice plate	PC
18	South Flare	Oil, flow, hydrocarbon	Venturi meter, anemometer	EB
19	North Flare	Oil, flow, hydrocarbon, H <sub>2</sub> S	Venturi meter, anemometer	EB, NSPS

<sup>1</sup> PC - Permit Condition  
EB - Energy Balance  
NSPS - Federal New Source Performance Standards for flares used as a control device

As shown in the table, a variety of technologies are used to quantify the volume of gases combusted. Each technology has advantages and limitations. Some of these have been identified by EPA in their Compliance Assurance Monitoring (CAM) Technical Guidance Document and are summarized in Table 3 on the following pages.

**Table 2: Comparison of Flow Measurement Devices**

Type of Flow Meter	Type of Measurement	Liquid, Gas, or Both	Applicable Pipe Diameter	Applicable Flow Rate	Straight Pipe Requirements <sup>a</sup>	Net Pressure Loss	Accuracy	Restrictions
Venturi Tube	Volumetric	Both	5 to 120 cm (2 to 48 in.)	Limited to ~ 4:1 flow range	6 to 20 D up 2 to 40 D down	10 to 20% of ΔP depending on β	± 0.75% flow rate w/o calibration	Eliminate swirl and pulsations
Flow nozzle	Volumetric	Both	7.6 to 60 cm (3 to 24 in.)	Limited to ~ 4:1 flow range	6 to 20 D up 2 to 4 D down	30 to 8.5% of ΔP depending on β	± 1.0% flow rate w/o calibration	Eliminate swirl and pulsations
Orifice plate	Volumetric	Both	1.3 to 180 cm (1/2 to 72 in.)	Limited to ~ 4:1 flow range	6 to 20 D up 2 to 4 D down	Slightly more than flow nozzle	± 0.6% flow rate w/o calibration	Eliminate swirl and pulsations
Magnetic	Velocity	Liquid (not petroleum)	0.25 to 250 cm (0.1 to 96 in.)	0.0008 to 9,500 L/min (0.002 to 2,500 gal/min)	None	None	± 1% flow rate	Conductive liquid, not for gas
Nutating disk	Volumetric	Liquid	1.3 to 5 cm (1/2 to 2 in.)	7.5 to 600 L/min (2 to 160 gal/min)	None		± 0.5% flow rate	Household water meter, low maximum flow rate
Oscillating piston	Volumetric	Liquid	1.3 to 5 cm (1/2 to 2 in.)	2.8 to 600 L/min (0.75 to 160 gal/min) Maximum of 4.3 to 480 m <sup>3</sup> /hr (150 to 17,000 ft <sup>3</sup> /hr)	None		± 0.5% flow rate	Household water meter, low maximum flow rate
Bellows gas	Volumetric	Gas		Maximum of 4.3 to 480 m <sup>3</sup> /hr (150 to 17,000 ft <sup>3</sup> /hr)	None			Used for commercial and domestic gas service
Lobed impeller	Volumetric	Both	3.8 to 60 cm (1-1/2 to 24 in.)	30 to 68,000 L/min (8 to 18,000 gal/min)	None	Low	± 0.2% flow rate	Best used at high flow rates
Slide-vane rotary	Volumetric	Liquid	Up to 40 cm (Up to 16 in.)		None		± 0.1% to 0.2% flow rate	
Retracting-vane rotary	Volumetric	Liquid	Up to 10 cm (Up to 4 in.)		None		± 0.1% to 0.2% flow rate	
Helical Gear	Volumetric	Liquid	3.8 to 25 cm (1-1/2 to 10 in.)	19 to 15000 L/min (5 to 4,000 gal/min)	None	Low	± 0.1% to 0.2% flow rate	High viscous liquids only
Turbine	Volumetric	Both	0.64 to 60 cm (1/4 to 24 in.)	190,000 L/min (50,000 gal/min) 65 scmm (230,000 scfm)	10 D up 5 D down	34 to 41 kPa @ 6.1 m/sec. (5 to 6 psi @ 20 ft/sec) water flow	± 0.5% flow rate	Straightening vanes. Do not exceed maximum flow
Vortex Shedding	Velocity	Both	2.5 to 30 cm (1 to 12 in.)	0.30 to 6.1 m/sec (1 to 30 ft/sec) 11 to 19,000 L/min (3 to 5,000 gal/min)	10 to 20D up 5 D down	34 to 41 kPa @ 6.1 m/sec (5 to 6 psi @ 20 ft/sec) water flow	± 1% flow rate (liquid) ± 2% flow rate (gas)	Straightening vanes
Vortex Precession	Velocity	Gas	2.5 to 20 cm (1 to 8 in.)	0.30 to 6.1 m/sec (1 to 20 ft/sec)	10 to 20 D up 5 D down	5% more than shedder	± 2% flow rate	Straightening vanes
Fluidic oscillating	Velocity	Liquid	2.5 to 10 cm (1 to 4 in.)	Up to 6.1 m/sec (20 ft/sec)	6 D up 2 D down	34 to 41 kPa @ 6.1 m/sec. 5 to 6 psi @ 20 ft/s water flow	± 1.25 to 2% flow rate	Carefully determine minimum flow rate
TOF ultrasonic	Velocity	Both	> 0.32 cm > 1/8 in.)	Minimum 0.03 m/sec (0.1 ft/sec)	10 to 30 D up 5 to 10 D down	None	± 0.5% to 10% full scale	Need clean fluid



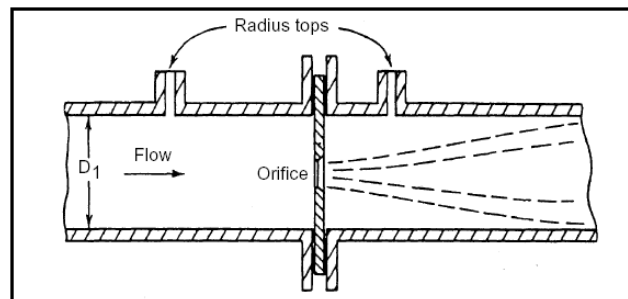
Type of Flow Meter	Type of Measurement	Liquid, Gas, or Both	Applicable Pipe Diameter	Applicable Flow Rate	Straight Pipe Requirements <sup>a</sup>	Net Pressure Loss	Accuracy	Restrictions
Doppler Ultrasonic	Velocity	Liquid	> 0.32 cm (> 1/8 in.)	Minimum 0.15 m/s (0.5 ft/sec); 0.38 L/min (0.1 gal/min)	Yes	None	As low as 1% flow rate	Fluid must have sufficient particles or bubbles
Thermo-anemometer	Velocity (mass)	Gas	> 5 cm (> 2 in.)		8 to 10 D up 3 D down	Very low	± 2% flow rate	Critically positioned probes Highly fluid composition dependent
Colorimetric	Velocity (mass)	Gas	> 5 cm (> 2 in.)		8 to 10 D up 3 D down	Low	± 4% flow rate	
Coriolis mass	Mass flow	Both limited gas	0.16 to 15 cm (1/16 to 6 in.)	Definitive max. + min. flow rate	None	High	± 0.2% to 0.4% flow rate	Pressure drop across flow meter cannot exceed max. system pressure drop
Rotameter	Velocity	Both	1.3 to 10 cm (1/2 to 4 in.)	Up to 750 L/min (200 gal/min for liquid); unlimited for gas	None	Low	± 1 to 2% full scale	Must be mounted vertically

## Flow Monitoring Technologies

The following discussions of flow monitoring technologies are taken from EPA's CAM Guidance. Discussion is limited to those technologies most common in the Bay Area refineries.

### ***Orifice Plates and Venturis***

Orifice plates can be used to measure fluid flow in pipes with diameters of approximately 1.3 to 180 cm (0.5 to 72 in.). Orifice plates operate on Bernoulli's principle, which says that pressure decreases with increased flow velocity. An orifice plate consists of a square-edged or sharp-edged, thin opening in a metallic plate perpendicular to the flow. The opening is of a predetermined size and shape and is machined to tight tolerances. The flow velocity must increase through the orifice. The result is a higher pressure upstream of the plate and a lower pressure downstream. The pressure differential increases with flow velocity. The pressure readings for an orifice plate are obtained from a pair of pressure taps, one on either side of the plate:

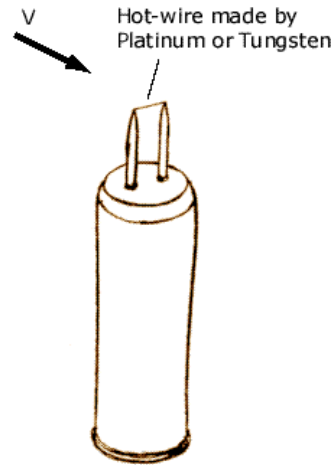


**Figure 2. Orifice Plate**

Venturi meters operate on the same principle. The pressure differential for a venturi is obtained from two taps: one at the full pipe diameter and one at the throat of the venturi.

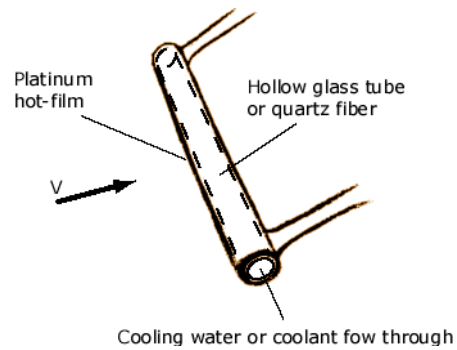
### ***Hot Wire Anemometer***

The hot wire anemometer (figure 3) works by measuring the current drawn through the hot wire as a result of the cooling effect of the air flow extracting heat from the wire. The instrument maintains the wire at a fixed temperature so that as it is cooled by the air flow the current increases to maintain the temperature of the wire. The core of the anemometer is an exposed hot wire either heated up by a constant current or maintained at a constant temperature (figure 4). In either case, the heat lost to fluid convection is a function of the fluid velocity.



**Figure 3. Typical Hot-Wire Anemometer**

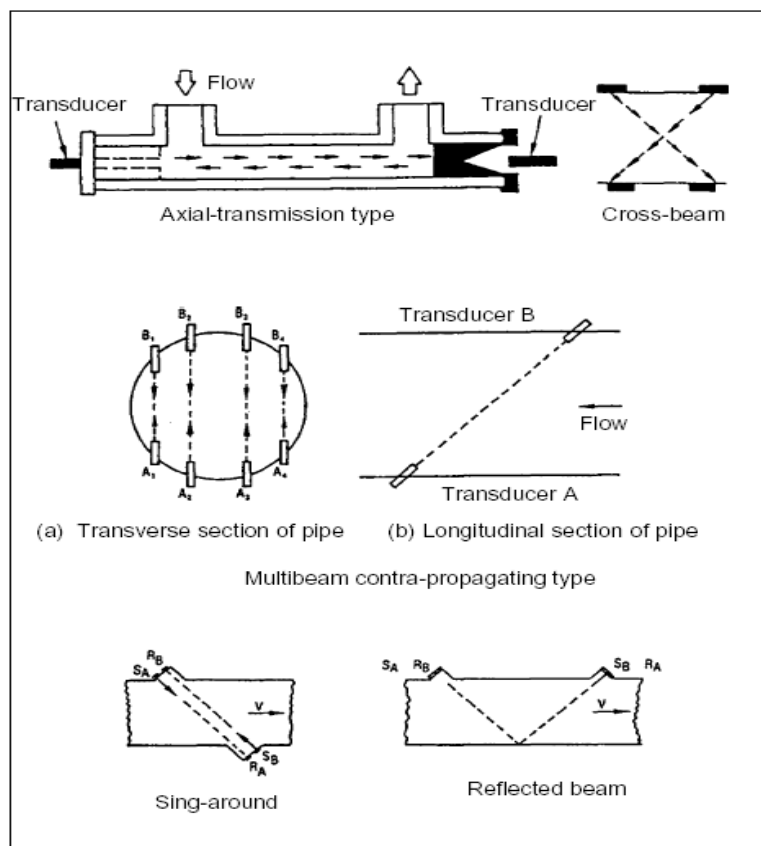
By measuring the change in wire temperature under constant current or the current required to maintain a constant wire temperature, the heat lost can be obtained. The heat lost can then be converted into a fluid velocity in accordance with convective theory.



**Figure 4. Anemometer Hot Wire**

## Ultrasonic Flow Meters

Two types of ultrasonic flow meters are available: time-of-flight (TOF) and Doppler. Doppler meters are suitable only for liquids and are not discussed here. In TOF ultrasonic flow meters, sound waves are introduced into the flowing fluid, one wave traveling with the flow and one wave traveling against the flow. The difference in transit time of the waves is proportional to the fluid flow rate, because the sound wave is accelerated when traveling with the flow and slowed when traveling against the flow. If the sound wave velocity of the fluid (speed of sound) is known, the transit distance is known, and time difference is known, then the fluid flow rate can be determined. Time-of-flight ultrasonic flow meters can be classified as one of the following: axial transmission, multi-beam (transverse or longitudinal) contra-propagating, cross beam, sing around, and reflected beam. Figure 5 depicts a TOF ultrasonic flow meter.



**Figure 5. Time of flight ultrasonic flow meter**

Ultrasonic flow meters are comprised of the following basic parts: the transducer, receiver, timer, and temperature sensor. Ultrasonic flow meters can be used to measure fluid flow in pipes with a diameter greater than 0.32 cm (0.125 in.) with a minimum flow rate of approximately 0.38 L/min (0.1 gal/min). Time-of-flight ultrasonic flow meters are applicable to liquids and gases flowing at velocities greater than 0.03 m/sec (0.1 ft/sec).

## Gas Composition Monitoring

The type of composition monitoring currently in use at a refinery depends upon the applicable regulatory requirements, as shown in Table 2. Regulatory requirements are specified in the District imposed permit conditions or in Federal requirements. The most common requirement is that a flare be monitored for emissions of sulfur oxides to meet New Source Performance Standards for flares used as a control device. For some flares, the District has imposed conditions on flares for purposes of controlling odors or to meet offset requirements. Typically these conditions place limits on the quantity and composition of fuel gas that can be burned, impose design criteria for tip velocity, and specify analytical protocols. Some composition monitoring may be done to meet other needs of the facility. For example, some facilities analyze for composition to “energy balance” the consumption of fuel gas within individual process units. All of the composition monitoring being done at the Bay Area refineries at present is through sampling and subsequent lab analysis.

Composition can also be monitored by continuous analyzers. Several technologies are available: the flame ionization detector (FID), the non-dispersive infrared (NDIR) spectrophotometer, and gas chromatography (GC).

A flame ionization detector (FID) burns sampled gas in a hydrogen flame. Organic compounds produce positive ions, which are collected at an electrode above the flame. The generated current is then measured. The FID is useful for measuring concentrations of organic compounds and is very sensitive and accurate over many orders of magnitude. Because the FID responds to any molecule with a carbon-hydrogen bond, but not at all, or poorly to other compounds, it is not useful for measuring concentrations of hydrogen sulfide or sulfur dioxide.

A non-dispersive infrared (NDIR) spectrophotometer measures the amount of infrared radiation that is absorbed by a sample. Infrared radiation from a hot wire is directed through two parallel cells: a reference cell filled with nitrogen, and a cell through which the sample flows. The gas in the sample cell absorbs an amount of energy proportional to its concentration. This is converted into an electrical output by the detector. The NDIR is commonly used to measure carbon monoxide, carbon dioxide, methane, and total hydrocarbon concentrations.

A gas chromatograph, or GC, consists of a column, oven, and detector. The column separates the gas sample into its various components. GC columns are available in different sizes, and packing for the columns depends upon the composition of the gas stream to be analyzed. The oven provides a controlled temperature enclosure for the column. The detector has to be chosen based on the type of gases being analyzed. A thermal conductivity detector or a FID can be used as the detector on a gas chromatograph.

In the gas chromatograph, a sample goes to the column, separates into individual compounds and proceeds through the hydrogen flame ionization detector, generating a response called a chromatogram. The various chemical components contained within the sample travel through the column at different speeds, depending on their respective solubility in or adsorption on the packing material (liquid or solid). The height of the peak on the chromatogram is related to the

concentration and the time it takes to go through the column, which helps identify the component.

## History of Monitoring

In 1984, Citizens for a Better Environment (CBE) petitioned the California Air Resources Board (CARB) to evaluate the feasibility of continuous emission monitors for refinery flares. CARB determined that no refinery in California accurately monitored flow rates to its flares. Several types of flow meters had been installed on refinery flares, but the instrumentation could only provide relative flow information because gas density varies and gas composition data is necessary to calculate flow accurately. CARB concluded that continuous monitoring of flow rates and composition and remote monitoring of flare plumes would require substantial development before it would be available. CARB determined that monitoring devices were available for limited applications to identify and record continuously the on/off status of flares. CARB also encouraged local air pollution control districts to adopt rules requiring refineries to install on/off status monitors and collect flare gas composition data so that a suggested control measure for the control of emissions from refinery flares could be developed.

In response to the CARB findings, the District conducted a flare monitoring study in 1988 and 1989 using the tools that were then available (BAAQMD 1990). Instantaneous flow information was obtained using pitot tubes. Composition was analyzed by taking grab samples at the same time that the flow measurement was made. All of the data simply gave the District a series of "snapshot" data. Conclusions had to be extrapolated from this limited data by assuming that it was representative of refinery operations, but there was no way to determine whether this was a valid assumption. Nevertheless, it remained the only flare flow and composition data set available for Bay Area refineries. The data collected was used as a basis for adjustments to the emission inventory used for the Bay Area 2001 Ozone Attainment Plan.

By the 1990's, ultrasonic flow meters were coming to be regarded as a reliable way to measure flare flows. Recognizing that the ultrasonic meters provided a reliable means of monitoring flare gas, the South Coast Air Quality Management District adopted its Rule 1118 requiring refinery flare monitoring. The rule was adopted in 1998, but there were numerous delays, and monitors were finally installed and operational by late 2000.

## California Air District Regulations

The following table summarizes existing flare regulations within California.

**Table 3: California Flare Monitoring Rules**

Regulation	Control/Performance Requirements	Monitoring Requirements	Minimization Plan	Emission Limitations
SCAQMD Rule 1118	None	Gas flow, heating value and sulfur content	No	No
SJVAPCD Rule 4311	Open Air Flares <5psig must meet 40 CFR section 60.18	For flares used during an emergency, record of the duration of flare operation, amount of gas burned, and the nature of the emergency situation.	No	Ground level enclosed flares only
SBAPCD Rule 359	Heating value, exit velocity, automatic ignition system	Presence of a flame	Yes	Sulfur compounds may not exceed 15 grains per 100 cubic feet (239 ppmv) in the Southern Zone of Santa Barbara County or 50 grains per 100 cubic feet (796 ppmv) in the Northern Zone of Santa Barbara County; smokeless

In 1994, the Santa Barbara Air Pollution Control District (SBAPCD) adopted Rule 359, Flares and Thermal Oxidizers. This rule applies to flares and thermal oxidizers used in oil and gas production, petroleum refineries and related sources, natural gas supply and transportation sources, and in distribution petroleum/petroleum products. Rule 359 specifies sulfur content limits for flare gas, technology-based standards for flares and thermal oxidizers, emission limits for nitrogen oxides and reactive organic compounds, and operational limits. The rule also requires plans to minimize use of flares.

In 1998, the South Coast Air Quality Management District adopted Rule 1118 (Emissions from Refinery Flares), which requires refinery flare monitoring. Monitors were installed and operational by late 2000.

In 2002, the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) adopted Rule 4311, Flares. This rule requires all open air flares to comply with federal limitations on sulfur in fuel gas. The federal requirement (40 CFR section 60.18) is found in New Source Performance Standards and, in the absence of the SJVUAPCD rule, would apply only to new flares. The rule does not impose extensive monitoring requirements like those in the proposed District rule or in SCAQMD Rule 1118.

# PROPOSED RULE

Proposed Regulation 12, Rule 11 would require refiners to:

- Continuously monitor vent gas flow for each flare;
- Monitor vent gas composition either by (1) taking samples manually or with an auto sampler, or by (2) using continuous analyzers;
- Submit monthly reports that include vent gas flow and composition, pilot and purge gas flow, estimates of hydrocarbon and sulfur emissions, descriptions of all flaring of more than 1 million standard cubic feet of vent gas (duration, time, cause, measures to reduce or eliminate), and monitor downtime;
- Monitor flare operation by video camera and record and retain recordings of flare images.

These requirements would be imposed in steps that are based upon the District's determination about the length of time required to install the necessary equipment:

- Effective in 90 days, each refinery would be required to begin daily sampling for composition when there is flaring activity. (Some refiners already have this capability and are reporting this data to the District pursuant to an agreement entered into pursuant to the flare further study effort described in the introduction; others will have to install necessary sampling ports.)
- Effective in 180 days, each refinery will have to have continuous flow monitors in place. This effective date is based upon the expectation that the manufacturer of ultrasonic flow monitors will be able to supply, and the refiners will be able to install, these monitors within this time.
- Effective in 270 days, each refinery will be required to have in place the equipment necessary to monitor composition at more frequent intervals or continuously. If sampling is chosen, the refineries will have to determine how to take more frequent samples, either through installation of auto-samplers or additional staffing, and how to process these samples, either in their own labs or through outside labs. If continuous analyzers are chosen, the refineries will have to design and install sample conditioning systems and analyzers, or arrange to have this work done by outside vendors.

The following sections of the staff report discuss the provisions of the proposed rule in the order in which they appear in the rule. In this discussion, the rule prepared and made available with the public notice for the May 21st hearing is called the “proposed rule.” This is in keeping with standard terminology used by ARB, air districts, and the Health and Safety Code (§§40725, 40726). The revised version of the rule now proposed for adoption is called the “revised rule.” Earlier drafts of the rule are called “earlier drafts.”



## Exemptions

The exemptions are intended to make it clear that the rule applies to flares and not other types of abatement devices used to control small sources and operations such as storage tanks or loading racks. These sources are subject to other BAAQMD rules and permit conditions. In particular, the exemptions make it clear that the rule is not intended to apply to thermal oxidizers, which differ from flares in numerous respects but most importantly in having emissions that can be directly measured and verified by source tests. For a discussion of this issue, see the discussion of the definition section of the rule below.

### ***Section 12-11-110 Exemption, Organic Liquid Storage and Distribution***

This exemption would exempt flares or thermal oxidizers controlling emissions exclusively from storage tanks or loading racks. The exemption would apply to six sources in the District. The first is a backup safety flare that serves a vapor recovery system for a propane tank at the Tesoro refinery. This flare is designed to control emissions from the propane tank if the tank's vapor recovery system fails or is taken out of service for maintenance. The second is also a backup safety flare that serves a vapor recovery system for a butane tank at the Valero refinery. This flare serves the same purpose as the flare at Tesoro. The other four sources are located at the Shell refinery. Three of the flares are backup safety flares for three vapor recovery systems that serve fixed roof storage tanks. The other Shell flare serves a liquefied petroleum gas (LPG) railcar loading operation at the Shell refinery. Railcars are unloaded using natural gas to push the LPG (propane and butane) out of the railcar. When railcars arrive at the refinery for loading, propane and butane displace the natural gas to the flare. So this flare combusts natural gas and small amounts of LPG that vaporize during the loading. For 2002, Shell loaded 971 tank cars. Total annual non-methane hydrocarbon emissions from the flare were approximately 1000 pounds. All of the flares exempted by this provision, with the exception of Shell's railcar loading flare, are backup safety flares and are not primary control devices. At 3 pounds per day, emissions from Shell's railcar loading flare are not significant.

### ***Section 12-11-111 Exemption, Marine Vessel Loading Terminals***

Marine vessel loading terminals are located at all five Bay Area petroleum refineries. All terminals are subject to Regulation 8, Rule 44, which requires that emissions from the loading of specified cargos be reduced by 95% or to 2 pounds per thousand barrels of cargo loaded. Thermal oxidizers are used at the Chevron, ConocoPhillips, and Shell refineries to meet the rule's control requirements. No terminal uses a flare for control. The thermal oxidizers at the three marine terminals have high efficiencies that are mandated by the rule and by permit conditions and can be directly verified by source tests. Because these devices are, by definition, thermal oxidizers, they are not subject to the rule. This exemption is therefore included merely to clarify that this is the case.

### ***Section 12-11-112 Exemption, Wastewater Treatment Systems***

The Valero and Tesoro refineries each use a thermal oxidizer to control components of the refinery wastewater treatment system. As discussed above, properly operated thermal oxidizers

have high control efficiencies that can be verified by source tests. Like all thermal oxidizers, these thermal oxidizers are, by definition, not subject to the rule, and the exemption is included to make this clear.

### ***Section 12-11-113 Exemption, Pumps***

Pumps are subject to the District's equipment leak rule, Regulation 8, Rule 18. The rule imposes the most stringent equipment leak limits in California, and one way of complying is by installing containment around a pump seal and directing emissions to an abatement device. Both the Chevron and Tesoro refineries use thermal oxidizers to control emissions from some pump seals. These thermal oxidizers are, by definition, exempt from the rule, and the exemption is intended to make this clear. If fugitive emissions from pumps are directed to the refinery's general blowdown and relief system, additional language makes it clear that the exemption would not apply to exempt a flare that might combust these emissions.

### ***Section 12-11-114 Limited Exemption, Total Hydrocarbon and Methane Composition Monitoring and Reporting***

This section does not appear in the proposed rule. Earlier drafts of the rule included a broader exemption from hydrocarbon reporting for flares that exclusively serve sulfur plants and ammonia plants or exclusively burn flexicoker gas. This broad exemption was dropped from the proposed rule.

Staff are now recommending a more limited exemption for flares that exclusively burn flexicoker gas with or without supplemental natural gas. Coking is a final refining stage that separates light products from the heavy coke byproducts of refining. The process converts feed with a very high carbon/hydrogen ratio into distillate products. Flexicoking is a continuous coking process that minimizes coke production and maximizes the production of useful products. It uses a gasifier in which steam and air are combined with the coke to produce gas. After hydrogen sulfide is removed from the gas, it is used as a fuel within the refinery. The process leaves very little coke.

Flexicoker gas has very consistent composition. Gas from the flexicoker at the Shell refinery is primarily nitrogen, carbon monoxide, hydrogen, and carbon dioxide. It typically has a methane content of less than 2%, a non-methane hydrocarbon content of much less than 1%, and very low sulfur content. A flare is used to burn flexicoker gas that cannot be used by the refinery. Under this exemption, Shell's flexicoker flare would be exempt from hydrocarbon monitoring requirements provided it meets the conditions in the exemption that limit methane content to less than 2% and non-methane hydrocarbon content to less than 1%. Monitoring for flow and sulfur composition would still be required.

## **Definitions**

As with all District rules, the proposed flare monitoring rule defines key terms used in the rule. There are two things to note about the definitions. First, the terms "flare" and "thermal oxidizer"

are defined (Sections 12-11-201 and 209) to make it clear that the rule applies to the flares that are listed in this staff report and not to thermal oxidizers and other abatement devices. The distinction drawn between flares and thermal oxidizers is that the latter term describes an enclosed combustion device that exhausts all combustion products through a vent, duct, or stack so that emissions can be measured directly. The intent of this rule is to require monitoring of open-flame devices – flares – from which emissions cannot be measured in the conventional manner. For a flare, there is no stack or duct in which probes can be located and emissions measured. The rule therefore requires the monitoring of gases directed to flares. The rule is not intended to impose these same requirements on thermal oxidizers, from which emissions can be measured directly, and the definitions are intended to draw this distinction. Thermal oxidizers typically have VOC destruction efficiencies that range from 98 to 99.99% and above.

A second important aspect of the definitions is that the term "vent gas" is defined (Section 12-11-210) to include all gas directed to a flare, excluding steam or air used to aid combustion and excluding pilot and continuous purge gas. This definition is then used in the definition of "flaring" (Section 12-11-203). The result is that "flaring" is any time the flare has a flame other than the pilot flame. The term is used in the interim sampling provisions in Section 12-11-502.2 to ensure that samples are taken while active flaring is occurring.

## Administrative Requirements

The Administrative Requirements set forth reporting requirements.

### ***Section 12-11-401 Flare Data Reporting Requirements***

In the proposed rule, this section requires a monthly report that must include the following:

- Upon rule adoption, total flow for each day and for the month. The Bay Area refineries currently have various means of determining flow and are reporting this data to the District pursuant to an agreement developed for flare further study measure FS-8. The rule will require continued reporting of this data. After the flow monitors required by Section 12-11-501 are installed, the report would also have to include flow for each hour of the month (ultrasonic flow monitors are capable of providing much greater flow detail than the means currently employed by most of the refineries).
- Methane, total hydrocarbon and sulfur content for every vent gas sample, and if continuous analyzers are used, for every hour of the month.
- If the flow monitor measures molecular weight (as ultrasonic monitors do), the average molecular weight of vent gas for each hour of the month.
- Type and quantity of pilot gas and purge gas used for each day and for the month. Where these flows are constant because of flare design, the parameters that dictate flow and the resultant flow are sufficient.

- For any 24-hour period during which more than 1 million standard cubic feet of vent gas are flared, a descriptions of the flaring, including time, duration, cause, the source of the vent gas, and any measures taken to reduce or eliminate flaring.
- Flare monitoring downtime.
- The archive of video images required by Section 12-11-507.

The revised rule adds a requirement for calculated emissions that was included in earlier drafts but dropped from the proposed rule. At the request of WSPA and the Unions at the May 8th flare workgroup meeting, the revised rule re-incorporates a requirement for emission calculations. The Unions suggested using the efficiencies specified in the Texas rule (98% for most flares, 93% for low-BTU gases). While WSPA has argued for higher efficiency, the revised rule includes the Unions' suggestion.

The reasoning behind specifying an efficiency figure, as articulated by the Unions and WSPA, seems to be that it is better to provide the public with some estimate of total emissions, even if the estimate employs some assumptions that are open to debate. District staff was persuaded by this reasoning, and so has incorporated assumed efficiencies in the proposed rule. However, it is important to note that these efficiencies are set for the narrow purpose of emissions estimates to be made in reports submitted by refineries pursuant to the rule. The revised rule does not restrict the District or anyone else from using a different efficiency figure in any other context. If the District does use a different efficiency figure, it will of course explain its reasoning for doing so. If more reliable information regarding flare efficiency becomes available, the District will consider revising the rule to reflect that information.

The revised rule also adds language to this section to require the submission of additional composition data that is not required by the section but is available from sampling analyzers or continuous analyzers.

### ***Section 12-11-402 Flow Verification Report***

This section requires a semi-annual report on alternative means of determining flow to serve as a check on the data being provided by the flow monitors. Ultrasonic flow monitors provide the most accurate and reliable means available to determine flare header flow. No currently available alternative method can provide similar precision or accuracy. If the ultrasonic monitor has been installed and calibrated properly and the data logger has been programmed properly, the data should be reliable. In one case during the flare study recently conducted by the District, a refinery submitted data from an ultrasonic monitor and mistakenly assumed that the ultrasonic monitor range setting was 10 times the actual set range (for example, a value was assumed to be 5 million when it was actually 500,000). The required semi-annual report will provide a means of detecting such errors through a comparison of other data to the reported data. There are several alternative ways of determining flow that can be used as a "reality check" on the monitor. These alternatives are listed in Section 12-11-602 (see the discussion of that section for an explanation of each alternative). If a semi-annual report suggests that there may be a problem with a monitor, the District will be able to investigate further to determine whether the monitor

still meets the requirements of Section 12-11-501 (requiring the monitor to accurately measure flow rate).

No other flare monitoring rule includes a flow verification requirement. This is true of both the South Coast AQMD petroleum refinery flare and the Texas chemical plant flare rule. This is primarily because it is difficult to know whether differences between ultrasonic flow meter measurements and measurements through alternate means should be attributed to inaccuracy in the meter or in the alternate method. (For more information on this issue, see the discussion of Section 12-11-501.)

For these reasons, it is difficult to specify how close the meter measurement must be to the expected measurement as derived from the flow verification. In the revised rule (Section 12-11-501), staff is including language that would specify that the difference be no greater than  $\pm 20\%$ .

## Monitoring and Records

The Monitoring and Records requirements are central to the rule and impose the various monitoring and recordkeeping requirements.

### ***Section 12-11-501 Vent Gas Flow Monitoring***

This section requires continuous monitoring of vent gas flow. The proposed rule specifies that the device used to do this monitoring (1) must be capable of detecting a minimum flow velocity of 0.1 feet per second, (2) must continuously measure the range of flow rates corresponding to flow velocities from 0.5 to 275 feet per second, and (3) must be installed on the flare header in a location that ensures that the device measures all flow. Three additional requirements are recommended by staff and are included in the revised rule. These additional requirements would specify that the device (1) must have a manufacturer's specified accuracy of  $\pm 5\%$  over the range from 1 to 275 feet per second, (2) must be maintained to be accurate to within  $\pm 20\%$  as demonstrated by the flow verification report specified in Section 12-11-402 (effective 12 months after installation), and (3) must be accessible to the APCO to verify proper installation and operation.

Section 12-11-501.1 requires the use of a device having a limit of detection of 0.1 feet per second. The "limit of detection" of an instrument is the lowest value of a parameter being measured that an instrument can reliably distinguish from zero. The limit of detection in the rule comes from ultrasonic flow meter product literature, and the value is from laboratory testing. Product literature from two manufacturers of ultrasonic flow meters (Panametrics and Roxar) both specify minimum detectible velocities in this range.

The primary criterion for any device installed pursuant to this section is that it be able to measure flow velocities over the range from 0.5 to 275 feet per second (Section 12-11-501.2). This range is taken from product literature for ultrasonic flow meters and is the general range over which the manufacturers claim the meters to be accurate. The revised rule now includes the

manufacturer's specified accuracy based on laboratory testing (Section 12-11-501.3 in the revised rule).

“Accuracy” is used in EPA and District regulations and in metrology, the science of measurement, to mean closeness to the truth. Although the ultimate true value of any parameter being measured cannot be known, accuracy is treated as the difference between a value measured by an instrument and an accepted true value or standard. These accepted values or standards are established by the National Institute of Science and Technology (NIST) or other nationally recognized measurement standards bodies. NIST was formerly the National Bureau of Standards and is responsible for developing, maintaining, and retaining custody of U.S. national standards of measurement. For example, a carton of milk is filled based on a NIST standard for measuring volume. Time throughout the U.S. is based on the official NIST time as maintained by NIST's atomic clock in Boulder, Colorado.

For fluid flow, there are no standard measurement artifacts like those for length or volume. Instead, NIST has established flow measurement standards based on devices that deliver a measured volume of fluid over a measured time interval, with these measurements referenced to established NIST standards for volume and time. NIST provides calibration services for gas flow meters, thus allowing testing laboratories to calibrate master flow instruments that can be used to verify the accuracy of meters for field use. Accuracy for ultrasonic flow meters therefore generally refers to the closeness to the NIST-established “truth” under laboratory conditions. Although many laboratories can test liquid flow meters, there only a few testing laboratories in the United States that can test ultrasonic gas flow meters against standards traceable to the NIST standards.

Though ultrasonic flow monitors can be calibrated at a flow laboratory prior to installation and can be determined to measure known flows accurately, unless the calibration facility can replicate the pipe size and likely conditions under which the meter will operate in a particular flare header, one simply can't say with certainty what the accuracy of field measurements will be. However, because these meters are extremely accurate under laboratory conditions, it is reasonable to assume that properly installed meters are accurate in the field. For any method used to check meter accuracy in the field, it is difficult to know whether differences between the meter measurement and the measurement derived using some alternate method should be attributed to inaccuracy in the meter or in the alternate method.

Staff recommend, and the revised rule includes in Section 12-11-501.6, an accuracy specification based on the flow verification required by Section 12-11-402. The revised rule states that effective 12 months after installation of the ultrasonic meters, the flow verification shall demonstrate a meter accuracy of  $\pm 20\%$ . This will allow a year of experience with the meters and with various flow verification methods. District staff expect that through this experience it will become clear whether the accuracy requirement can be met. District staff is proposing to report back to the Board 18 months after rule adoption. If it appears that the specification should be changed, staff can recommend appropriate changes at that time.

Section 12-11-501.4 requires that the meter be installed at a location that ensures that the device measures all flow. An early draft of the rule specified that the meter must be installed at a

location after the knockout pot, after all locations at which supplementary fuel is introduced, and after the water seal. This more prescriptive language was derived from a recently adopted Texas rule that applies to flares that combust certain highly-reactive VOCs. (Because refinery flare gas does not typically contain significant amounts of these highly-reactive VOCs, the Texas rule would not apply to most refinery flares and is instead intended to apply to chemical plants.)

District staff determined that using the prescriptive approach of the Texas flare rule in this context would have required the installation of meters within the radiation zone for some Bay Area flares. Less prescriptive language is proposed to allow discretion to locate a meter where it would still measure all significant flows while avoiding damage to the meter.

Section 12-11-501.5 specifies, effective 180 days after adoption of the rule, that the APCO is to have access to the flow monitoring system to verify proper installation and operation.

### ***Section 12-11-502 Vent Gas Composition Monitoring***

This section requires composition monitoring of vent gas. At present, some of the Bay Area refineries are taking daily samples of vent gas for lab analysis. Within 90 days after rule adoption and until more stringent requirements in the section take effect, all Bay Area refineries are required to take and analyze a grab sample for each day on which there is flaring activity (Section 12-11-502.2). These samples are required to be taken within 30 minutes after flaring begins.

Effective nine months after rule adoption, more stringent composition monitoring requirements take effect. Refiners will have two primary options: (1) sampling and subsequent lab analysis, or (2) the use of continuous analyzers. There are then alternatives with each of the primary options. The various options are discussed below.

#### **Sampling**

Sampling is proposed as an option because the technology is proven, is robust, and is already in widespread use. Sampling can be more economical because sampling equipment will not require sample conditioning trains as complex as those required for continuous analyzers. However, sample processing in a lab can be labor and time intensive, and, with a short sampling interval, can become as expensive as other options. Both manual sampling and auto-sampling are proven in practice. A number of refineries in Southern California are using auto-samplers to take vent gas samples as required by the South Coast AQMD flare monitoring rule. With manual sampling, great care must be taken to ensure the safety of refinery workers involved in sampling. In some cases, the available sampling locations may have potential to expose workers to dangerous high temperatures if the vent gas flow rate is high.

The proposed rule allows only integrated sampling, which relies upon automated sampling equipment. Integrated sampling produces a composite sample out of individual aliquots taken over time. An aliquot is a fractional part of the sample that is an exact divisor of the whole sample. For example, ten aliquots of 100 milliliters each could compose a 1 liter sample. Because the aliquots are taken over time, the sample reflects variation in composition that may

occur over time. Integrated sampling was included as the only sampling option in the proposed rule because of its potential to reflect composition variation with time.

District staff now recommend that two alternative sampling options be available: manual sampling and integrated sampling. The revised rule reflects this recommendation. The reason for including a manual sampling option is that a number of flares in the District are very rarely used: some less than once in a year and others less than once in several years. For these flares, a requirement to use integrated sampling or continuous analyzers would dictate the installation and maintenance of expensive and sensitive equipment that would rarely be used. This equipment would require regular attention to ensure that it remains in a state of readiness. As a result, Section 12-11-502.3.1 sets forth a manual sampling option.

This manual sampling option is probably not practical for flares that are used with some regularity. The need to continually take samples would be burdensome, and would likely result in missed samples. The likely outcome of the inclusion of this option is that its use will be restricted to these low usage flares.

As noted, the only sampling option included in the proposed rule was integrated sampling. District staff are recommending retention of this option with modifications to the sampling trigger and additional language to ensure that sample containers are not left in service for more than a day.

### Sampling Trigger

Staff recommend adoption of the South AQMD trigger for sampling. The revised rule states that if the flow rate in any consecutive 15-minute period continuously exceeds 330 standard cubic feet per minute, sampling must begin within 15 minutes. Sampling must continue until flow rate in any consecutive 15-minute period is continuously 330 standard cubic feet per minute or less. The proposed rule set the sample trigger for integrated sampling at 6,000 standard cubic feet in a 15-minute period. An earlier version of the rule proposed 50,000 standard cubic feet in one hour as the trigger for sampling.

All efforts to set the sampling trigger have been based on setting the trigger at the lowest flow velocity at which (1) the flow meter is accurate and (2) the measured flow would represent real flow to the flare. The earlier draft's proposed trigger of 50,000 standard cubic feet in an hour was based on a flow velocity of 1 foot per second. In response to comments from community and labor groups, the triggers in both the proposed rule and the revised rule are based on a flow velocity of approximately 0.5 foot per second. The recommended trigger included in the revised rule is identical to the trigger in the South Coast AQMD flare monitoring rule.

The flow velocity for a given volumetric flow rate depends upon the size of the flare header. The table below lists volumetric flow rates for flow velocities of 1 foot per second and 0.5 foot per second in various sized flare headers.

**Table 4: Flow as a Function of Header Size and Velocity**



<b>Volumetric Flow Rate for Given Flow Velocities (ft<sup>3</sup>/hr)</b>				
Flow Velocity (feet/sec.)	Diameter of Flare Header (inches)			
	24"	30"	42"	48"
1.0	11,310	17,671	34,636	45,239
0.5	5655	8836	17,318	22,619

Because most of the refineries have one or more large (42 inch or 48 inch) flare headers, using flow above 50,000 standard cubic feet per hour as a trigger ensures that sampling is triggered only when flow velocity is more than 1 foot per second in flare headers. Using an hourly trigger of 20,000 standard feet per hour (or about 330 standard cubic feet per minute over 15 minutes) ensures that sampling is triggered only when flow velocity is approximately 0.5 foot per second.

Several reasons support setting the trigger for sampling at a flow velocity of approximately 0.5 feet per second or higher. First, ultrasonic flow meters are not considered by manufacturers and users to be as accurate at flow velocities below about 0.5 feet per second.

Second, large flare headers are subject to various effects that produce low velocity currents within the header that do not represent flow to the flare. Such effects include the differential heating of a header by the sun producing stratification and circulation of gases and the suction of a compressor producing a surging effect on gas in the header. As a result, eddies can form and move within a header. As a result of these effects, gas can move past the sensors of the flow meter when no flaring is occurring. With a lower trigger, flow may be indicated where none exists (i.e., a false positive flow). Under such circumstances, samples would not represent actual vent gas but would instead represent still gas in the header and could bias results.

A third reason for choosing the recommended trigger level is that an analysis of data collected during the District's flare study shows that use of this level would capture most of the flaring events of significance. Even if some events are missed, the larger events caught by this trigger will yield an extensive collection of data that will vastly expand understanding of the composition of flare gas.

A fourth reason for choosing this trigger level is that the data loggers used to record flare flow can be easily programmed to compare gas volume flared for the current minute against the trigger and to recognize when there are 15 consecutive minutes of flow about the trigger level. This will provide a clear signal for triggering sampling and can be easily enforced.

A fifth reason for choosing the proposed trigger level is that alternative forms appear to be more problematic. One alternative trigger that would still rely on the ultrasonic flow meter might be a sustained flow velocity exceeding 1 foot per second over some period of time. The disadvantage is that the sampling trigger would then vary with header size, which seems inequitable. In a small header the flow volume would be relatively inconsequential while significant in a large header. Use of a trigger other than the ultrasonic flow meter was also considered. A visual trigger tied to video monitor images could be used but would be subjective and difficult to enforce. Use of a trigger based upon flare header pressures that exceed the flare water seal pressure for some period of time would require instrumentation of water seals, and there is little District or industry experience with this data and its correlation to flow.

## **Continuous Analyzers**

The other option for determining vent gas composition is the use of continuous analyzers pursuant to Sections 12-11-502.3.2 and 502.3.3. Several technologies are available: (1) flame ionization detectors (FID), (2) non dispersive infrared (NDIR), and (3) gas chromatography. These technologies were described above under "Background."

Continuous analyzers are widely used to monitor gas composition in the chemical and petroleum industry. However, District staff have been unable to identify any refinery in California or Texas using a continuous analyzer to monitor flare vent gas composition. One of the difficulties of monitoring vent gas is that it can include water, oil, rust and other particles, a very wide range of organic compounds, and high sulfur levels. In general, continuous analyzers need to be carefully tailored to a relatively predictable gas stream. In addition, samples need to be carefully conditioned to remove water and particles. Use of continuous analyzers will therefore require design and installation of a sample conditioning system. There is no off-the-shelf system available for this service. While District staff believe that such a system can be made to work, the technological challenges are not fully known. Until these systems are designed and installed, the maintenance needs for such a system are unknown. Because of the nature of the vent gas stream, it seems likely that these sample conditioning systems will require more maintenance than those in more conventional service.

## **Rationale for Options**

The rule allows the two primary options, sampling and continuous analyzers, because each has advantages and disadvantages that may dictate one over the other for the specific flare in question. Sampling is a proven approach. Though continuous data is desirable, continuous analyzers have not yet been proven as a technology to monitor flare vent gas, which is not as "clean" as most gas streams for which these analyzers are used. Use of continuous analyzers will require sample conditioning equipment that may be more difficult to design than those required for sampling and may require considerable maintenance. The rule represents a compromise, allowing a method that is known to work (sampling) while encouraging a method that the District would like to see proven in practice (continuous analyzers). This ensures that the rule will work and avoids the risk of rule failure that would come from mandating only continuous analyzers and the missed opportunity that might come from mandating only sampling. District staff expects that the result may be the use of continuous analyzers on some flares and sampling on others. District staff expects that either approach will provide sufficient data to support the accurate characterization of flare gas composition.

## **General Requirements**

Section 12-11-502.1 specifies requirements that apply to all composition monitoring. Vent gas monitored for composition must be taken from a location that is representative of vent gas composition. Where flares share a common header, a sample from the header is sufficient for all flares served by the header. The composition monitoring system must provide a means for the District to take samples to verify the composition analyses required by the rule.

### ***Section 12-11-503 Pilot Monitoring***

This section requires each pilot to have a properly functioning ignition system. Most flares have pilot lights and most have an electric arc backup in case the pilot is lost.

### ***Section 12-11-504 Pilot and Purge Gas Monitoring***

This section requires monitoring of pilot and purge gas either by a flow measuring device or by the monitoring of other parameters. Most of the refineries rely on water seals rather than purge gas, and volumetric flow of pilot gas is constant and dictated by pilot design. Under these circumstances, the monthly report can simply state the parameters that dictate flow and repeat the flow data each month (see discussion of Section 12-11- 401).

### ***Section 12-11-505 Recordkeeping Requirements***

Pursuant to this section, monitoring records, except for video monitoring, must be kept for 5 years. The section repeats existing requirements contained in federal law for Title V facilities.

### ***Section 12-11-506 General Monitoring Requirements***

General monitoring requirements that apply to all monitors are included in this section. The section limits hours of monitor inoperation and requires reporting when monitors go out of service. Monitors are allowed 15 consecutive days of inoperation, with proof of expeditious repair required after the 15 days and with a limit of 30 days total in one year. During periods when monitors are out of service, flows must be calculated and composition must be determined by sampling. Monitors are required to be maintained and calibrated in accordance with manufacturer's requirements. Finally, the section specifies that the electronic data loggers used to record data must be capable of one-minute averages and must record flow data as one-minute averages. Continuous composition analyzers do not produce one-minute averages, as the cycle for such an analyzer may take 15 minutes or more.

The revised rule includes amendments to the monitor downtime provisions that are intended to encourage the use of integrated sampling and continuous analyzers. Though these approaches have not yet been used on flare headers, several Bay Area refineries are interested in trying one or more of these options, but are concerned that the downtime provisions are too stringent for new equipment with which they have no experience. The changes to this section allow a 6 month grace period for integrated sampling, continuous analyzers, and gas chromatography during which the downtime limits will not apply. This will give the refineries time to work out any problems and acquire experience with the new equipment.

### ***Section 12-11-507 Video Monitoring***

This section requires the installation within 90 days of recording equipment for flares currently equipped with video monitoring equipment. Effective in 6 months, video monitors and recording equipment must be installed on each flare that currently lacks video monitoring

equipment and that has a significant release (1 million standard cubic feet of vent gas in 24-hour period) as measured by the ultrasonic flow monitors.

The video monitoring requirements are intended to provide a backup to the extensive data that will be available after the rule's other monitoring requirements go into effect. Recorded video will serve as a broad scale verification on the operation of flow monitors. For instance, if recorded video shows a significant flaring event that is not indicated in monitoring data, this would be indicative of monitor equipment failure. In this way, recorded video data will provide an additional benefit in linking actual flaring events with emissions data and will thereby further the District compliance and enforcement capabilities. Though recorded video is not nearly as useful as other forms of monitoring for determining the quantity or character of flare emissions, its low cost and utility as a gross verification method justifies its inclusion in the rule.

Community members originally asked for video monitoring so that the District would have the means to verify complaints about flaring. In the past, flaring complaints occasionally came to the District on weekends or at other times when a District inspector was unable to verify the complaint. In the past, however, inspectors did not have the flow and composition data that will now routinely be available. It is possible, but uncertain, that video data will assist the District in responding more effectively to community complaints. The District believes this possibility, combined with the usefulness of video data as a broad scale verification on monitor function, justifies imposition of the requirement. With the proposed rule, video data will be redundant, but the recordings will provide an additional check on flaring.

At the District's August 2002 conceptual workshop for the proposed rule, community members asked for video monitoring with retention of images for a period sufficient to allow verification. The District's original proposal was to require recording of images and retention of the images for 72 hours. At community meetings, many participants requested retention for a greater length of time. The proposed rule therefore requires retention and submission of the images recorded during a particular month with the monthly report required by Section 12-11-401. This requirement ensures that images will be available to answer questions raised by neighbors or by District staff after reviewing the report.

This section specifies certain minimum requirements for the images and recording. The flare image must be of sufficient size, contrast, and resolution to be readily apparent in the overall image or frame and it must include an embedded date and time stamp.

The image of the flare must be recorded at a frame rate of no less than 1 frame per minute. This frame rate was selected to ensure that the resulting size of the electronic file was no bigger than could be recorded on one DVD per flare per month. In arriving at this frame rate, the District assumed that the individual image file for each image of the flare would be 40 kilobytes. This file size was selected based on the size of a typical JPEG image file of reasonable size. Images for one month would then produce a file of 1.7 gigabytes (40 Kb \* 60 min/hr \* 24 hrs/day \* 30 days). A single-sided single-layer DVD is capable of holding 4.7 gigabytes of data. Though this file size is reasonable for a DVD, it is an extremely large file by internet standards and could not be sent as a typical e-mail attachment or over anything but the fastest internet connections in any reasonable amount of time.

Comments on earlier versions of the rule have suggested that much higher frame rates could be required for the image recordings. But there are tradeoffs. The basic determinants of the size of an electronic image file are its size in pixels, the bit depth for each pixel (the number of bits used to represent colors for each pixel), the number of images included in the file (determined by the frame rate and length of time), and the compression used (various different approaches are used to reduce file size, but generally at the expense of resolution).

As an example, a typical image size is 320 pixels by 240 pixels. Producing a black and white image requires a bit depth of 1 bit. To produce a good grayscale image or an image with a limited range of color requires a bit depth of 8 bits. With limited color, the file size for each frame is already 75 kilobytes (320 pixels \* 240 pixels \* 8 bits/pixel \* 1 byte/8bits \* 1 kilobyte/1024 bytes). At a frame rate of 30 frames per second (the standard video frame rate), the file size for 1 minute of video is 132 megabytes. A DVD could store 36 minutes of these uncompressed video images. This is why compression is used. The standard compression used for video was developed by the Moving Pictures Experts Group and is called MPEG. MPEG achieves good results at compression ratios up to 20:1 for video, with visual artifacts and distortion appearing at higher compression ratios. With the current example and a compression ratio of 20:1, a DVD could store about 12 hours of video images. Video images of the example size at 30 frames per second for a single flare for a month would therefore require 60 DVDs.

One participant in the August 2002 conceptual workshop also suggested requiring flare operators to put flare images on the internet. The proposed rule does not require posting of images on the internet. The District believes that the current video monitoring requirement will sufficiently provide the information the District seeks to carry out its responsibilities. Web posting, as proposed by some workshop participants and commenters, would not provide any additional benefit in determining emissions, enforcing applicable regulations, or investigating incidents. If the District receives complaints as a result of a flaring incident, an on-site investigation by an inspector would normally follow.

## Manual of Procedures

Provisions in the Manual of Procedures section of the rule specify test methods to be used to carry out the monitoring required by the rule.

### ***Section 12-11-601 Testing, Sampling, and Analytical Methods***

This section lists the methods that are allowed for the various approaches to composition monitoring. Section 12-11-601.1 specifies methods to be used for laboratory analysis of samples taken manually or with an auto-sampler. Section 12-11-601.2 specifies methods to be used with flame ionization detectors or non-dispersive infrared spectrophotometry. Section 12-11-601.3 specifies methods for gas chromatography. For gas chromatography, although equipment may be capable of completing cycles in 15 minutes, the allowed sampling frequency is 30 minutes, both because some refiners may want to analyze for additional compounds beyond those required by the rule, which increases the cycle time, or because some may want to use one gas chromatograph to analyze samples from more than one flare header.

The revised rule makes a minor change to this section to allow use of subsequent revised versions of the listed methods.

### **Section 12-11-602 Flow Verification Test Methods**

Section 12-11-402 requires a semi-annual flow verification for the flow monitors required by the rule. As noted in the discussion of that section, this requirement simply provides a check on the flow meters. Section 12-11-602 specifies 6 methods that can be used to measure or estimate flow for a particular period of time. Pursuant to Section 402, the measure or estimate will then be compared to flow monitor data for the same period. If there is a difference between the data produced by the monitor and that produced by the verification method, it is difficult to know whether the error lies with the meter or with alternative. The verification is primarily intended to flag any major differences for further investigation. The verification would catch, for example, any error in the range setting for the ultrasonic flow meter (see discussion under Section 12-11-402). If there is a reason to suspect a problem in the flow meter, a flow meter can be removed and bench tested with controlled flows.

The revised rule includes a requirement that measurement from the meter and the flow verification agree to within  $\pm 20\%$ .

Sections 12-11-602.1 and 602.2 allow pitot tube traverses as a check on flow and specify District and EPA methods respectively for conducting these traverses. These methods involve inserting a pitot tube into a port in a flare header and measuring flow. Though the methods have been included, they are not likely to be used very often because of the risks involved with inserting probes into a live flare header. Their use is also limited to velocities greater than 10 to 20 feet per second.

Section 12-11-602.3 would allow the use of flow monitors or process monitors that can provide comparison flow rate data for a vent stream that is flowing past the ultrasonic flow meter.

Section 12-11-602.4 would allow the use of any method recommended by the manufacturer of the ultrasonic flow meter.

Section 12-11-602.5 would allow the use of a tracer gas to determine flow. A tracer gas can be introduced into a flare header through a port upstream of a second port at which vent gas is sampled for presence of the tracer gas. By timing how long it takes the tracer gas to move from the port where it is introduced to the port where it is detected or by measuring the tracer gas concentration, flow velocity can be determined.

Section 12-11-602.6 would allow any alternative method if approved by the District and EPA.

## **EMISSIONS REDUCTIONS**

The purpose of Regulation 12, Rule 11, Flare Monitoring at Petroleum Refineries is to gather information on flaring including flow, composition, and cause. The proposed rule does not

mandate reductions. Nevertheless, District staff have found that because refiners have looked more closely both at monitoring and the feasibility of flaring reductions, flaring at the five Bay Area refineries has dropped dramatically over the past year. One refinery has installed new compressors that have allowed it to go from flaring an average of 5 million standard cubic feet of vent gas per day to virtually zero routine flaring. The result has been a significant emission reduction that cannot be directly attributed to this rule, but will ultimately be reflected in the emissions inventory.

## ECONOMIC IMPACTS

### Costs

The proposed rule requires the installation of 3 types of monitoring equipment: (1) flow monitoring equipment, (2) composition monitoring equipment, and (3) video monitoring equipment. Because the rule allows each refinery options, particularly in determining how to monitor vent gas composition, it is difficult to predict cost for each refinery. Cost will also vary because the number of flares at each refinery varies. Costs are divided into two main categories: (1) initial capital and installation costs for equipment, and (2) annual operating and maintenance costs.

**Table 5. Capital Cost Items**

Cost Item	Cost <sup>1</sup>	Comment
Flow monitor Ultrasonic meter w/ installation Annual amortized cost <sup>2</sup>	\$50,000  <b>\$6164</b>	
Continuous analyzer (NDIR) Hydrocarbon analyzer H <sub>2</sub> S analyzer Sample conditioning AutoCal system Installation Total Annual amortized cost <sup>2</sup>	\$9,000 \$15,000 \$40,000 \$25,000 \$50,000 \$139,000 <b>\$17,137</b>	2 analyzers: (1) dual channel-methane and total hydrocarbon, (2) H <sub>2</sub> S
Continuous analyzer (FID) Hydrocarbon analyzer H <sub>2</sub> S analyzer Sample conditioning AutoCal system Installation Total Annual amortized cost <sup>2</sup>	\$12,000 \$15,000 \$40,000 \$25,000 \$50,000 \$142,000 <b>\$17,507</b>	2 analyzers: (1) dual channel-methane and total hydrocarbon, (2) H <sub>2</sub> S
Continuous analyzer (GC) GC Sample conditioning Installation	\$50,000 \$40,000 \$50,000	

<b>Cost Item</b>	<b>Cost<sup>1</sup></b>	<b>Comment</b>
Total	\$140,000	
Annual amortized cost <sup>2</sup>	<b>\$17,261</b>	
Auto-sampling system		
Auto-sampler	\$15,000	
Installation	\$15,000	
Total	\$30,000	
Annual amortized cost <sup>2</sup>	<b>\$3,699</b>	
Manual sampling station		
Installation	\$10,000	
Annual amortized cost <sup>2</sup>	<b>\$1233</b>	
Video monitoring		
Equipment w/installation	\$5,000	
Annual amortized cost <sup>2</sup>	<b>\$616</b>	

<sup>1</sup> Costs based on vendor estimates or quotes to ARB or District staff

<sup>2</sup> Costs amortized over 10 years @ 4% real interest rate

**Table 6. Annual Operating Costs**

<b>Cost Item</b>	<b>Cost</b>	<b>Comment</b>
Maintenance for all monitors (per flare)	\$20,000	District estimate
Sample analysis	\$500/sample	Vendor quote
Report preparation per flare <sup>1</sup>	\$4,000	Costs based on 1 day of labor @\$50/hr/flare/month

Based on the above cost estimates, the annual cost per flare will depend upon the flare monitoring technologies chosen, but the cost is expected to be about \$50,000 per flare. For flares for which composition is monitored by sampling, equipment costs are lower but sample analysis costs bring total cost up to a level comparable to that for flares using continuous analyzers.

At an annual cost of \$50,000 per flare, the total cost for the Bay Area refineries together is expected to be about \$1.15 million per year. The cost per refinery will depend upon the number of flares at the refinery.

## Socioeconomic Impacts

Section 40728.5 of the Health and Safety Code requires an air district to assess the socioeconomic impacts of the adoption, amendment, or repeal of a rule if the rule is one that “will significantly affect air quality or emissions limitations.” The proposed rule is intended to provide the tools necessary to analyze refinery flaring. It would impose monitoring requirements for refinery flares but would not impose emission limitations. As a result, these limits cannot be said to “significantly affect air quality or emission limitations,” within the meaning of Section



40728.5, and the District will not prepare the socioeconomic analysis that would otherwise be required under Section 40728.5 of the Health and Safety Code. However, the District has attempted to minimize the costs imposed by the proposed rule.

## **Incremental Costs**

Under Health and Safety Code Section 40920.6, the District is required to perform an incremental cost analysis for a proposed rule under certain circumstances. To perform this analysis, the District must (1) identify one or more control options achieving the emission reduction objectives for the proposed rule, (2) determine the cost effectiveness for each option, and (3) calculate the incremental cost effectiveness for each option. To determine incremental costs, the District must “calculate the difference in the dollar costs divided by the difference in the emission reduction potentials between each progressively more stringent potential control option as compared to the next less expensive control option.” Because the proposed rule does not impose control requirements, no incremental cost analysis will be prepared.

## **ENVIRONMENTAL IMPACTS**

Pursuant to the California Environmental Quality Act, the District prepared an initial study for the proposed rule to determine whether rule adoption would result in any significant environmental impacts. The rule is intended to allow the District to collect data on refinery flaring through the imposition of monitoring requirements. Because the rule would not impose emission control requirements, which always have some potential to alter emissions or transfer them from one media to another, and because any necessary construction would take place within existing refineries, no adverse environmental impacts are expected. The study did identify the construction work required to install monitors as a source of potential environmental impacts. However, because of the safety requirements that govern this type of work, the regularity with which similar hot work is conducted in refineries, and the consequent familiarity with and preparedness for this type of work on the part of refinery workers and contractors, the study concluded that the proposed rule would not result in any significant environmental impacts through this mechanism.

A CEQA Negative Declaration is proposed for adoption by the Board in connection with the adoption of the revised rule. The CEQA document was circulated for public comment during the period from April 21, 2003 to May 12, 2003. No comments on the document were received.

## **REGULATORY IMPACTS**

California Health and Safety Code Section 40727.2 require the District to identify existing federal air pollution control requirements for the equipment or source type affected by the proposed rule or regulation. The District must then note any differences between these existing requirements and the requirements imposed by the proposed rule. Table 7 is a matrix of the proposed rule, existing Bay Area regulations, and federal requirements for flares.

**Table 7: Comparison of Regulatory Requirements**

Agency	Regulation	Control/Performance Requirements	Monitoring Requirements	Emission Limitations
BAAQMD	Reg. 2, Rule 6 (Title V permit)	Specific to facility and source	Specific to facility and source	Throughput limits, visible emission
BAAQMD	Proposed Reg. 12, Rule 11	No	Volumetric flow and composition	No
EPA	40 CFR 60.18 (applies to flares subject to NSPS)	Pilot flame present at all times, heat content, maximum tip velocity, sulfur content	Presence of flame, heating value	Smokeless capacity

## Federal Requirements

Federal New Source Performance Standards (NSPS) in 40 CFR Part 60, Subpart A, Section 60.18 apply to flares that are used as general control devices. They specify design and operational criteria for new and modified flares. The requirements include monitoring to ensure that flares are operated and maintained in conformance with their designs. Flares are required to be monitored for the presence of a pilot flame using a thermocouple or equivalent device. Other parameters to be monitored include visible emissions, exit velocity and net heat content of the gas being combusted by the flare.

In addition, the NSPS limit sulfur oxides in vent gases combusted in a flare installed after June 11, 1973 (40 CFR Part 60, Subpart J, Section 60.104). Upset gases or fuel gas that is released to the flare as a result of relief valve leakage, startup/shutdown, or other emergency malfunctions is exempt from the standard.

## District Requirements

Within the District, a new emission source or a modified existing source must meet the District's New Source Review (NSR) requirements. The NSR program requires the use of Best Available Control Technology (BACT) for new or modified sources that have the potential to emit 10 pounds per day or more of VOC, carbon monoxide, oxides of nitrogen, particulate matter, or sulfur dioxide. For flares, BACT requires a control efficiency of 98% for elevated flares and 98.5% for ground flares. Other permit conditions are imposed on some flares. These conditions may include throughput limits and record keeping to document compliance.

The proposed rule would require continuous monitoring for volume and sampling or the use of continuous analyzers for vent gas composition. Recording of video images of flares would be required. Monthly reports of flow, composition, and other data would be required. For larger releases (over 1 million standard cubic feet per day), a report on the time, cause, duration, and reason for the flaring would be required.

## **RULE DEVELOPMENT HISTORY**

The District has been carrying out a complex study of flares and flaring at the Bay Area refineries since January 2002. The study implements further study measure FS-8 from the 2001 Bay Area Ozone Attainment Plan. In the course of the study, District staff have visited all five Bay Area refineries numerous times, have met with refinery staff, ARB and EPA staff, and with community groups in over 50 meetings to discuss issues related to flaring.

A work group was formed to carry out the further study. The workgroup included representatives from California Air Resources Board, Industry, Communities for a Better Environment, and District Staff. The Environmental Protection Agency and other air districts, including the South Coast AQMD and the San Joaquin Valley Unified APCD participated at various levels throughout the project. The workgroup has met periodically since January 2002 to discuss technical issues. Among those issues have been flare monitoring issues such as flow monitoring and available technologies and composition monitoring methods.

In May 2002, the District conducted an informational public meeting to gather input on the District's plans to implement the commitments in the ozone attainment plan. In August 2002, District staff held a workshop in Martinez to discuss flare monitoring concepts. At this workshop, community members indicated that they would like to see a rule that required flow monitoring, composition monitoring, reporting requirements, and video monitoring.

Three community meetings were held in March and April 2003. After the community meetings, a draft rule was circulated for a short comment period ending April 17, 2003. Extensive comments were received from WSPA, Communities for a Better Environment, and refinery trade unions. On April 16, 2003, the proposed rule was discussed before the Stationary Source Committee. A flare workgroup meeting was then held on April 18, 2003. The meeting was attended by representatives for various refineries, WSPA, CBE, the refinery trade unions, monitoring equipment vendors, ARB, and District staff. Based on the draft and these further discussions, the proposed rule was developed and sent to the Air Resources Board on April 21, 2003. Discussions continued on May 8, 2003 with a second flare workgroup meeting. After the second meeting, modifications to the proposed rule were developed and circulated among all who participated in the meeting. After discussion with members of the workgroup, staff prepared the revised rule.

## **DISTRICT STAFF IMPACTS**

Implementation of the proposed regulation will have a significant impact on the District's resources. However, these changes are essential and necessary in order to satisfy the commitments in the Bay Area 2001 Ozone Attainment Plan.

The proposed regulation will require the installation of monitors. The District will have to exercise oversight for these monitors in a manner similar to that used to oversee continuous emission monitors (CEM). The resources required are similar, and will require District staff to

verify the installation of monitoring equipment, conduct accuracy tests or ensure that they are conducted, review monthly reports, perform compliance inspections, and investigate flaring incidents.

Monthly reports on flaring will be required. These reports will have to be reviewed by District staff. The District expects to continue to investigate significant flaring events. This would not represent a change from the model used in the further study measure for flares. A flaring event was defined for the study as any flow over 1,000,000 standard cubic feet per day to a flare. The rule requires an investigation that is included in the monthly report from the refinery whenever daily volume exceeds 1,000,000 standard cubic feet. During the further study period, the time required to investigate events varied, was dependant on the complexity of operations, and ranged from less than an hour to hundreds of hours. This workload will diminish as flaring decreases (as it is currently) and as more data becomes available with new monitors in place.

## **CONCLUSION**

Proposed Regulation 12, Rule 11, Flare Monitoring at Petroleum Refineries, will implement control measure SS-15 from the Bay Area 2001 Ozone Attainment Plan. The rule is intended to gather data on flaring operations at petroleum refineries.

Pursuant to the Health and Safety Code Section 40727, new regulations must meet necessity, authority, clarity, consistency, non-duplicity and reference. The proposed regulation is:

- Necessary to implement control measure SS-15 in the Bay Area 2001 Ozone Attainment Plan;
- Authorized by California Health and Safety Code Section 40702;
- Clear, in that the new regulation specifically delineates the affected industry, compliance options and administrative requirements for industry subject to this rule;
- Consistent with other District rules, and not in conflict with state or federal law;
- Non-duplicative of other statutes, rules or regulations; and
- The proposed regulation properly references the applicable District rules and test methods and does not reference other existing law.

## REFERENCES

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- \_\_\_\_\_. Air Pollution Technology Factsheet: Flare. Washington, D.C. (available on the web at <http://www.epa.gov/ttn/catc/dir1/fflare.pdf>)
- \_\_\_\_\_. Air Pollution Technology Factsheet: Thermal Incinerator. Washington, D.C. (available on the web at <http://www.epa.gov/ttn/catc/dir1/fthermal.pdf>)

# COMMENTS AND RESPONSES

The following written comments were received during the rule development process for the proposed flare monitoring rule. These comments and responses refer to the rule prepared and made available with the public notice for the May 21st hearing as the “proposed rule.” This is in keeping with standard terminology used by ARB, air districts, and the Health and Safety Code (§§40725, 40726). The revised version of the rule now proposed for adoption is called the “revised rule.” Earlier drafts of the rule are called “earlier drafts.” These comments were made on an earlier draft that preceded the proposed rule. Many of the comments were addressed in the proposed rule or in the revised rule that staff is recommending for adoption by the Board.

## Written Comments Received During Community Meetings

The District held three community meetings in March and April 2003 to discuss rule concepts. During or after these meetings, the District received the following written comments related to an earlier rule draft.

- 1. The draft rule allows refineries to choose once per day sampling and skip monitoring gas composition for the rest of the day. Refineries are only required to sample gas composition during 60 minute periods exceeding 50,000 cubic feet of gases flowing to the flare. This loophole allows each flare to skip monitoring the gas composition of over a million cubic feet per day of gases (49,000 cubic feet X 23 hours). <May, Communities for a Better Environment (CBE). E-mail. 3/27/03>**

*For the sampling option to which the comment refers, the earlier draft rule set a trigger that required sampling when the volume of vent gas measured during a 60-minute period exceeded 50,000 standard cubic feet of gas. Based in part on a concern expressed in earlier comments, the trigger was revised downward in the proposed rule and subsequently in the revised rule now recommended for adoption. The revised trigger that staff recommend is identical to the trigger in the South Coast AQMD rule (which requires sampling when flows continuously exceed 330 cubic feet per minute for 15 minutes).*

*Note that all vent gas must be monitored for flow volume regardless of the means used to determine composition. If sampling is used for monitoring vent gas composition, it is important that the trigger be set at some minimum flow that represents actual flow to the flare so that false positive readings are avoided. The earlier draft rule to which this comment was directed set a trigger that was based on an assumption that ultrasonic flow meters could not reliably measure flare flows at below 1 foot per second. The revised trigger is based on an assumption that there is adequate reliability even at approximately 0.5 foot per second.*

*As discussed in the staff report (see discussion of Section 12-11-502), large flare headers are subject to various effects that produce low velocity currents within the header that do not represent flow to the flare. With a trigger lower than approximately 0.5 foot per second, meter accuracy is lower, and low-velocity flows that do not represent flow to the flare may be encountered. The result is that flow may be indicated where none exists (i.e., a false positive flow). If samples are then taken, these “no flow” samples will bias results.*

- 2. The draft rule allows huge flows of gases to go unmonitored because the refineries are allowed to skip measuring flows below 0.5 ft./sec. <May, CBE. 3/27/03>**

*The rule requires all flows to be measured and reported (see Section 12-11-401). The comment is a response to Section 12-11-501, which specifies a series of requirements for any device used to measure flow. One of the specifications is that the meter must measure the range of flow corresponding to velocities from 0.5 to 275 feet per second. This is a device specification and not a limitation on the reporting otherwise required by Section 12-11-401. An ultrasonic meter that meets the specification is capable of reporting data on flow down to its limit of detection. The specification is derived from literature from Panametrics. The Panametrics meter is capable of detecting flow down to 0.1 feet per second. As noted above, however, these low velocity flows may not represent flow to the flare.*

- 3. The draft rule allows poor quality assurance procedures, such as “engineering calculations” or “other flow monitoring devices or process monitors” for determining whether [flow] monitoring equipment is working right. <May, CBE. 3/27/03>**

*Ultrasonic flow meters are state-of-the-art devices for measuring flow. They are extremely accurate over a wide range of flows, are robust with no moving parts, and are proven in service. They are widely used as custody transfer meters to price large volumes of natural gas at sale. Section 12-11-506.3 already requires proper calibration and maintenance. The verification procedures included in the rule are inevitably less accurate means of measuring flow, but are included in the rule as a check on the meters to avoid gross errors such as might come from misinterpreting the range setting or units represented by the meter display or output.*

## Written Comments Received During Written Comment Period

Following the completion of the community meetings, the District prepared a revised draft and made it, a draft staff report, and a draft CEQA initial study available for public comment. The comment period ran from April 7 – 17, 2003. The following comments were received.

**4. What data/monitoring is needed for proposing rule-making? <Partnership for Public Health, Environmental Health Committee (PPH). 4/16/03>**

*For any rulemaking, the District must make a number of findings required by California Health and Safety Code section 40727. Findings of necessity and authority are among the required findings. For this rulemaking (flare monitoring), this staff report serves as the basis for the necessary findings.*

**5. What is the nature of the discrepancies between the Air District assessment and the assessment from the refineries? How will these discrepancies be addressed? What is the avenue for meaningful public participation in this process? <PPH. 4/16/03>**

*The major differences between the District's Draft Technical Assessment Document and data submitted by the refineries are in the hydrocarbon content and volume of gases flared. These differences will be addressed through the ongoing technical assessment process for flares. The public can participate through the flare work group or by commenting on the technical assessment document as revised.*

**6. Is routine flaring legal? If not, what does the Air District plan to do about these flares (i.e.; fines, cease and desist orders, control measures). <PPH. 4/16/03>**

*Under certain circumstances routine flaring may result in a violation of Federal standards (40 C.F. R. Section 60.104(a)(1)). Such a determination is based upon the factual circumstances in any given flaring event. Because the purpose of the current regulation is to gather data and monitor emissions, this question may be better answered in another forum.*

**7. What monitoring technology is currently available? What is the best way to monitor? <PPH. 4/16/03>**

*For flare gas flow rate (cubic feet per minute of gas vented to the flare), the current state-of-the-art monitoring technology is ultrasonic flow meters. For flare gas composition, there are various methods, including taking grab samples to be analyzed in a laboratory, continuous gas chromatographs that collect and analyze a sample every 15 minutes, and continuous monitors that measure methane, total hydrocarbons, and sulfur compounds. There are advantages and disadvantages for each monitoring method. Grab sampling and subsequent lab analysis is simple but labor intensive, provides a "snapshot" of composition for the instant when it was taken, but is not available until hours after the sample was taken. Continuous gas chromatographs are complicated, require complex sample conditioning systems, may need much maintenance, but provide very detailed composition information every 15 minutes. Continuous monitors for methane, total hydrocarbons, and sulfur compounds also require complex*



*sample conditioning systems but provide continuous composition information for these compounds.*

- 8. What does monitoring tell us from an exposure standpoint and from a health effects standpoint? That is, how much exposure is the community getting and is this harmful to the health of the community members? Is there any additional concern for those who are chronically ill, are chemically sensitive, the young and the elderly? <PPH. 4/16/03>**

*Flare monitoring for flow rate and flare gas composition will provide data that can be used to calculate emissions. Dispersion models can be used to calculate the air quality impact of the flare emissions. These air quality impacts can then be used to estimate exposure. Health professionals can evaluate the health impacts. Generally speaking, young children, the elderly, and those with respiratory illness are more sensitive to air pollution than healthy adults.*

- 9. Are all flares monitored? For instance, are there records of specific dates and times of flaring incidents over the last few months? <PPH. 4/16/03>**

*The information available today is limited. The District has been conducting a study of flaring with the available data and has posted on its website ([www.baaqmd.gov](http://www.baaqmd.gov)) preliminary flaring data covering the period from January 2001 to August 2002. This data is preliminary and in many cases relies upon assumptions that may be revised. With new flare monitoring technology, much more reliable information will be available.*

- 10. When flares are monitored, how quickly is the monitoring information available to residents? What is the Air District plan for public notification? <PPH. 4/16/03>**

*Refineries will be required to provide the District with a monthly report for each flare that will include flow and composition data. The District has not yet determined how best to provide this information to the public, but is considering the use of its website and perhaps other means.*

- 11. What is the breakdown of the emissions? What specific chemicals are monitored and what chemicals that are emitted are not monitored? Why aren't all chemicals monitored? <PPH. 4/16/03>**

*Emissions come from two primary mechanisms: oxidation of flare gases to other compounds and incomplete combustion that allows a small portion of the flare gas to pass through the flare uncombusted. Flare gas is generally composed primarily of methane, non-methane hydrocarbons, nitrogen, and hydrogen with small amounts of other compounds, including sulfur compounds. The primary combustion products are carbon dioxide and water, but sulfur compounds are oxidized to oxides of sulfur. The flare monitoring rule focuses on composition monitoring for methane, total hydrocarbons, and sulfur compounds because*

*these compounds form ozone and sulfur dioxide, and health-based ambient air standards have been established for both pollutants.*

- 12. How long will it be before the Air District implements measures that will reduce the amount of pollution being discharged by flares? <PPH. 4/16/03>**

*The District is currently completing its study of flares and expects to determine by summer how it will move forward to reduce flaring. The refineries have already significantly reduced flaring from 2001 and 2002 levels.*

- 13. How will the information and input be gathered from this and other meetings and from monitoring be used in rule-making regarding flaring? What is the timeline for rule-making? How can residents be involved in this process? <PPH. 4/16/03>**

*Information provided from the public through the comment period, public hearings and other submittals and meetings have been considered in drafting the District's final monitoring proposal. We are still working on the flare study that will determine the next steps regarding potential controls on flares. Though the data we have developed through the study may not have the precision of the data that will come from the new monitors, it should be adequate to guide the District's decision about controls. The District expects that, if the study concludes that controls are available, the rule development effort to impose controls would be concluded by the end of 2003. The District will again consider comments that have already been received regarding controls, and residents will again be invited to participate and comment in the flare control rulemaking process.*

- 14. Are you documenting each of our questions? How are you going to respond to the community concerns? <Asthma Community Advocate (ACA). 4/16/03>**

*The District is considering all comments and responding to all written comments. The proposed rule incorporates many community suggestions.*

- 15. Will there be a timeline for creating and implementing the rule? <ACA. 4/16/03>**

*The District Board of Directors will conduct a public hearing on May 21, 2003 at which it will consider adoption of the rule.*

- 16. Are there any consequences for the refineries if the designated timeline is not maintained? (fines, etc.) <ACA. 4/16/03>**

*Yes. Failure to meet rule requirements would be a violation of the rule subject to potential enforcement action and penalties.*

- 17. Are the refineries going to be allowed to continue to use flares for planned and routine use? <ACA. 4/16/03>**

*The proposed flare monitoring rule does not impose restrictions on flare use. Consideration of flare controls is a separate process. See response to comment #13.*

- 18. How will non-accidental uses of flares be regulated and monitored? <ACA. 4/16/03>**

*The proposed rule would require monitoring of all flaring events from flares subject to the rule, accidental or not. Also see response #17.*

- 19. How will the public know what measures refineries are taking to implement technologies to reduce the need for flares in the first place? <ACA. 4/16/03>**

*Section 12-11-401 of the proposed rule requires that monthly reports on flaring include a description of any measures taken to reduce or eliminate flaring.*

- 20. How will this information be provided to the community? <ACA. 4/16/03>**

*See response #10.*

- 21. Do the refineries have to wait to implement pollution controls until this flare rule is developed? <ACA. 4/16/03>**

*No. One refinery has installed new compressors that allowed it to virtually eliminate routine flaring. Most of the refineries now have compressors that should allow them to avoid routine flaring. Nothing in this rule prevents refineries from moving forward with flare controls.*

- 22. Why isn't the Air Board monitoring for hydrogen and nitrogen? <ACA. 4/16/03>**

*Hydrogen and nitrogen in the flare gas do not contribute directly to air pollution. When hydrogen is burned in a flare, it is converted to water. Flares use surrounding air to provide the oxygen for combustion. Air is about 20% oxygen and 80% nitrogen by volume. While a small amount of nitrogen in the air is converted to nitrogen oxides, which can contribute to ozone formation, nitrogen in flare gas would not increase emissions of nitrogen oxides.*

- 23. Don't wait to implement pollution controls to reduce the need for flares-planned, routine or accidental! <ACA. 4/16/03>**

*See responses #13 and #21.*

- 24. How is the public going to be notified about the findings of the flares? In real time? In plain English? What about the findings of the report? <ACA. 4/16/03>**

*Information about major flaring events is posted on the District's website. The monthly reports on flaring that are required by the proposed rule will be available to the public (see response #10). The flare study as revised will be available on the District website.*

- 25. We feel that someone from the West County Asthma Coalition should be kept updated on a routine basis by the Air Board about the flare issue. <ACA. 4/16/03>**

*See response #24. We are happy to discuss flaring issues with the West County Asthma Coalition.*

- 26. We recommend requiring continuous analyzers for vent gas monitoring. If there is a malfunction of that equipment then manual sampling should be used. <ACA. 4/16/03>**

*Continuous analyzers are an allowed option. Other options are allowed because continuous analyzers have never been installed on refinery flare headers, and the feasibility of this approach is not yet known.*

- 27. What are penalties or consequences if the monitoring requirements are not met? <ACA. 4/16/03>**

*Failure to comply with the monitoring requirements would be a rule violation subject to potential enforcement action and penalties.*

- 28. We understand that the positioning of the camera could influence the reading of the emissions from refineries. So, is it possible to have more than one video recording device monitoring flares? There should be a time and date stamp. <ACA. 4/16/03>**

*Cameras cannot be used to read emissions from flares. The rule requires monitoring of flow and composition using flow meters and other means that provide more reliable information than cameras. Cameras provide secondary information about the size and shape of the flame that cannot be used to determine the nature and quantity of emissions. The rule specifies minimum requirements for video monitoring. More than one camera would be allowed but not required. The proposed rule requires a time and date stamp.*

- 29. Flare images should be retained for at least 7 days, as opposed to a minimum of 72 hours. We understand that storage has come up as an issue, but how big an inconvenience is too big an inconvenience to store small video digital tapes? <ACA. 4/16/03>**

*The proposed rule now requires that the flare images for each month be recorded and submitted to the District. Tapes are not a reliable storage means. It is expected that video information would be converted to digital files and archived on DVDs or other storage media.*

- 30. Are video tapes going to be fully accessible to the public? Since this is public information, can it be available at public libraries or other public places, so the public won't have to necessarily go through a government agency for access to the videos. <ACA. 4/16/03>**

*It is unlikely that tapes will be used. It is more likely that images will be digitally recorded on DVDs or other media that can be read by computers. The District has not yet decided how to make the data available.*

- 31. Periodically, will public sharing of flaring videos be scheduled and presented in plain English? We recommend that if the Air Board is given 24 hours notice, than any member of the public should be allowed to see any video. <ACA. 4/16/03>**

*See response #30.*

- 32. How many years are you going to collect data before you require changes in industrial practices leading to a reduction in flares? <ACA. 4/16/03>**

*See responses #12 and #13.*

- 33. What is your proof or data, that flare emissions are not impacting the health of the local community? <ACA. 4/16/03>**

*All air pollutants have the potential to affect health, particularly for the young, the elderly, and those with respiratory illness. Flares are just one of many contributors to air pollution. Many other sources, including cars and trucks, contribute emissions, including sulfur emissions, that are similar to those from flares. Given that these flare emissions are not unique and that the causes of asthma, cancer, and many other illnesses are not well understood, it is unlikely that flare emissions can be identified as being responsible for a particular health problem. Nor can it be proved that they are not responsible. In general, it is well known that ozone and sulfur dioxide can, for example, trigger asthma attacks. As a result, the District works to reduce these pollutants, regardless of the source.*

- 34. Is there any proof that sulfur emissions from flares have no harmful health effects? <ACA. 4/16/03>**

*See response #33.*

- 35. In general, sulfur components trigger asthma, what proof do you have that sulfur emissions from flares have no harmful health effects? <ACA. 4/16/03>**

*See response #33.*

- 36. The short comment period has hampered our ability to thoroughly review the proposed rule. We strongly support a thorough and vigilant flare monitoring rule. We also support the detailed comments on this rule submitted by Communities for a Better Environment. <Holtzclaw, Sierra Club. E-mail. 4/17/03>**

*The District understands the difficulty. The District is moving quickly to establish a flare monitoring rule that is thorough and responsive. Given the District's desire for an expeditious and efficient process, the additional comment period was necessarily short.*

- 37. We believe that web-posted video monitoring on real-time basis is necessary to establish and maintain a common tool for community, regulators and regulatees to reference in their communications. We urge the District to require that real time flare images be posted so that nearby folks can monitor the flares along with regulators and refinery personnel. With 24 hour real time video monitoring that is accessible, it may be possible to identify which wind and release conditions result in troubling air quality. <Holtzclaw, Sierra Club. 4/17/03>**

*The proposed rule does not require web posting for the reasons discussed in the staff report (see discussion of Section 12-11-507). The flow and composition monitoring requirements of the rule are a much more reliable source of the information that would be necessary to assess air quality impacts.*

- 38. The exemption of Section 12-11-111 should include thermal oxidizers. Thermal oxidizers are highly efficient control devices, therefore all thermal oxidizer applications should be exempt from this rule. < Buchan, Western States Petroleum Association (WSPA). E-mail. 4/17/03>**

*Thermal oxidizers are by definition exempt from the rule, but the exemptions of Sections 12-11-110, 112, 113, and 114 have been modified to make this clear.*

- 39. Modify the definition of "flare" to clarify the difference between flares and other combustion equipment. <Buchan, WSPA. 4/17/03>**

*The definitions of "flare" and "thermal oxidizer" have been modified to accomplish this.*

- 40. A definition for “flare monitoring systems” is needed to identify all monitoring equipment that could fail and, therefore, come under the equipment malfunction requirements of section 506.1.**

*The District has added a definition and clarified the monitor downtime provisions of Section 12-11-506.1.*

- 41. A definition for “day” is needed to clarify its usage throughout the regulation. We believe that a calendar day would simplify various recordkeeping requirements and is appropriate. <Buchan, WSPA. 4/17/03>**

*The rule does not include the definition. Section 12-11-401.6 requires a "root cause" analysis if more than 1 million standard cubic feet of gas are flared in a 24-hour period. This analysis would be required when flaring begins in the evening, and the 1 million standard cubic foot threshold is reached after midnight. Use of "day" instead of "24-hour period" would mean no analysis would be required under these circumstances.*

- 42. Changing the report due date to the end of the following month aligns the deadline for the flare reporting with several other monthly report deadlines so the reports can be submitted together. <Buchan, WSPA. 4/17/03>**

*Section 12-11-401 has been modified to include this deadline.*

- 43. Adding an “(s)” to the reference [in Section 12-11-401] to flare headers clarifies the reporting requirements for flare systems with one or more headers feeding the same cascading or staged flare system. <Buchan, WSPA. 4/17/03>**

*Section 12-11-401 has been modified to make it clear that only one report is required for such a system rather than individual reports for each flare in the system.*

- 44. Deletion of requirements for hourly data in section 401.1 and 401.3 is proposed because we believe that hourly data is overly burdensome and is not needed to determine emissions from the flares. <Buchan, WSPA. 4/17/03>**

*Hourly data will be generated by the monitors and can be easily provided in electronic format. During large flaring events, emissions can change significantly from hour to hour.*

- 45. Changes to section 401.4 are proposed to simplify the wording regarding purge gas data in the monthly report. <Buchan, WSPA. 4/17/03>**

*The District believes the proposed language is clear. The suggested language would allow submission of daily averages under circumstances where more*

*detailed data is available. Where purge gas use is at a fixed rate, it would be permissible with our language to submit the daily average.*

- 46. Changes are proposed in section 401.6 to clarify the accumulation time for the 1.2 million standard cubic feet of vent gas and a requirement for hourly flow during such periods was added to ensure adequate data is collected for such flaring events. <Buchan, WSPA. 4/17/03>**

*See response #41.*

- 47. The use of a 24-hr period unnecessarily compounds the data capture and reporting task. Instrument data is normally archived and presented in a simplified midnight to midnight basis. The use of another 24-hr period will require the execution of additional manual tasks that may result in a loss of the data automation accuracy from flow recording systems. Additionally, routine duties such as monitoring of flare event periods should match as closely as possible, the normal work routines and schedule of refinery personnel. The introduction of a task that is triggered by an unpredictable monitoring activity will require additional task execution by the operators. <Buchan, WSPA. 4/17/03>**

*See response #44. Flow monitor data loggers can be easily programmed to recognize when the threshold has been reached. With either the proposed language or the WSPA language, the threshold could be reached at any hour of the day.*

- 48. We are willing to provide emissions calculations on using the 98% control efficiency basis. However, we wish to note that there are several studies that indicate that the flare hydrocarbon destruction efficiencies are typically higher than 98%. Therefore, the emission calculations will very likely be overestimating the actual flare hydrocarbon emissions. This fact should be taken into account when considering possible uses for these emission numbers. <Buchan, WSPA. 4/17/03>**

*Comment noted.*

- 49. [In Section 12-11-501,] the minimum velocity should be 0.5 feet per second(fps) or 0.34 MPH. Based on our experience and the experience in the SCAQMD, a 0.5 fps zero cutoff will create false vent gas flow readings. These false readings are primarily caused by eddy currents and temperature changes within the flare stack. Due to the sensitivity of the flow meter at this very low flow setting, gas expansion due to daily changes in ambient temperature will result in signals of non-existent vent gas flows. Upon receiving these false signals, the operator must then monitor and report these “ghost” flows per 12-11-401 on a daily basis. To avoid this unnecessary low flow indication and subsequent reporting of**



these miniscule false flows and false emissions, we request that the minimum velocity be 0.5 fps. <Buchan, WSPA. 4/17/03>

*The rule specifies that the flow monitoring device must continuously measure flow velocity from 0.5 to 275 feet per second because this is the range over which ultrasonic flow meter manufacturers (Panametrics and Roxar) guarantee highest accuracy. But Section 12-11-401 requires continuous flow monitoring and reporting of all flow data, not just flows above 0.5 foot per second.*

50. **The requirement in Section 501.3 that the flow monitoring device continuously measure molecular weight should be to allow maximum flexibility in the type of flow meter used. Currently, the most likely type of flare flow meter does allow a continuous measurement of molecular weight. However, other acceptable flow monitoring instruments may become available and the molecular weight requirement may prevent use of any other flow instruments, limiting the flow monitoring to a single supplier. <Buchan, WSPA. 4/17/03>**

*This requirement has been removed from Section 12-11-501. Section 12-11-401.4 now specifies that this information must be reported if available from the meter.*

51. **Section 502.2 does not allow enough time to properly design, review, order, and construct a safe sampling system. The section should be changed to allow 90 days. <Buchan, WSPA. 4/17/03>**

*The section now allows 90 days rather than 60.*

52. **The minimum sampling frequency of once per day [in Sections 502.2 and 502.3] does not make sense if there is no flow. <Buchan, WSPA. 4/17/03>**

*We have eliminated the requirement for daily sampling in favor of a trigger that would require sampling only when there is flow to the flare.*

53. **The rate [of 50,000 standard cubic feet in one hour] triggering sampling and the frequency of sampling required [every 3 hours] seems excessive. We propose increasing the trigger for frequent sampling to a 100,000 standard cubic feet event in one hour. This would still identify very small events (less than 50 pounds of hydrocarbon using typical vent gas composition). Sampling even smaller events would not provide any significant information and would significantly increase the cost for sampling and analysis. In addition, it would allow operators to focus on stopping even small flaring events rather than concentrate on verifying that samples have been taken for insignificant events. Also, we propose that the frequency for sampling such events should be reduced to once every 8 hours. Generally, the vent gas composition during a flaring event does not change**

**significantly over a period of 8 hours. Therefore, a sampling frequency of once every 8 hours should be adequate. <Buchan, WSPA. 4/17/03>**

*In the proposed rule, the trigger for sampling was set at 6,000 standard cubic feet in 15 minutes. However, staff is now recommending that the trigger be modified to be identical to the trigger used in the South Coast AQMD rule (330 standard cubic feet per minute continuously for 15 minutes). This change is included in the revised rule.*

*To address community concerns that a sampling interval measured in hours would mean that composition would go unmonitored for too long during flaring events, the proposed rule specified integrated sampling at 15 minute intervals. Integrated sampling produces a composite sample out of aliquots (portions of the total sample size). Because the aliquots are taken over time, the sample reflects variation in composition that may occur over time. However, because this eliminated conventional sampling and meant that expensive sampling equipment or continuous analyzers would be required for numerous flares that are rarely used, recommended changes are included in the revised rule to add back a conventional sampling option with a sampling interval of three hours. Integrated sampling provisions are also retained.*

- 54. Section 506.1 changes are made to clarify that all monitoring equipment (see added definition for “flare monitoring system”) come under this section. Flare monitoring will require a significant amount of equipment. Since much of this monitoring will be new installations and will involve monitoring that has not typically been done in this application, it is likely that there will be more instrument downtime than an old, existing monitoring requirement. Therefore, we recommend that the wording in this section be made consistent with the continuous emission monitoring requirements found in Regulation 1-522.4. To accomplish this, the last sentence in 12-11-506.1 should be deleted. <Buchan, WSPA. 4/17/03>**

*Rather than eliminate the sentence that limits downtime to 30 days in a calendar year, staff is recommending changes to the proposed rule to allow a 6-month delay in this requirement for integrated sampling, gas chromatography, and other continuous analyzers to allow time to identify and correct problems in the systems before the requirements come into effect.*

- 55. Section 506.2 requires manual sampling during periods of inoperation of continuous analyzers. This should extend to auto-samplers. We believe this was the District’s intent. <Buchan, WSPA. 4/17/03>**

*This was our intent, but the change was not included in the proposed rule. The revised rule includes this change.*

- 56. Section 506.4 changes clarify that many in-line analyzers cannot provide one-minute averages since the analytical sampling period is greater than**

once per minute. For example, most if not all hydrogen sulfide analyzers have a response time of 3 minutes or longer. Gas chromatography analyzers take 30 minutes or more for a complete analysis. Therefore, since many analyzers are incapable of providing one minute data, let alone averages, that portion of the section should be removed. <Buchan, WSPA. 4/17/03>

*The section indicates that the data logger must be capable of recording one-minute averages. The District recognizes that composition data will not be one minute averages and need not be recorded as such.*

57. **The requirement to archive video images for each 24-hour period should be changed to a requirement to archive the images for each day to clarify daily archiving of daily video monitoring. <Buchan, WSPA. 4/17/03>**

*The proposed language change would not change the requirement. The “24-hour” language was used to allow flexibility to produce a daily archive that runs from, for example 12 noon to 12 noon, rather than limiting it to a 12 am to 12 am day.*

58. **EPA commonly allows an Equivalent Voluntary Consensus Standards Body to determine the most appropriate methods for analyses. Examples of this are ASTM, API and others. In this way, the rule need not be opened each time a more accurate, sensitive, or appropriate method is deemed more suitable for the analysis. <Buchan, WSPA. 4/17/03>**

*The text of the proposed rule, in Section 12-11-601, did not address this issue. The revised rule addresses the issue, and allows subsequent revisions to methods to be used.*

59. **Initial Studies with proposed Negative Declarations or Mitigated Negative Declarations require at least 20 days for public comment (30 days if submitted to the State Clearinghouse). See California’s Environmental Quality Act (CEQA) Guidelines, Sec. 15073(a). The BAAQMD published its Request for Comments online on April 7, 2003. Since comments are due today, April 17, 2003, the District has provided merely 10 days for public comment. Accordingly, OCE request that the District provide an explanation for the abbreviated comment period. <Costa, Our Children’s Earth Foundation (OCE). E-mail. 4/17/03>**

*The document on which comments were requested was a draft initial study. No public review of a draft initial study is required by CEQA. Initial studies typically serve as the basis for an agency’s conclusion about the appropriate CEQA document required for a project. If an agency decides that a negative declaration is the appropriate document, it must, at that point, indicate that it intends to adopt a negative declaration (which includes the initial study) and provide for the review period required by CEQA Guidelines section 15073. The District has now made*

*the negative declaration for this rule development project available for a review period exceeding 20 days. In asking for any comments on the draft initial study, the District was providing an opportunity for comment beyond those required by CEQA.*

- 60. The BAAQMD's flare monitoring rule should require that the District take stack samples during flaring incidences, in normal weather conditions, to determine the amount of chemicals released into the atmosphere. <Costa, OCE. 4/17/03>**

*Refinery and District safety requirements preclude sampling in the flare combustion zone. Remote sensing can be used to study combustion emissions. The District is following such a study being conducted under contract to the Texas Commission on Environmental Quality (TCEQ).*

- 61. The flare monitoring rule should require that the BAAQMD include all the emissions reported pursuant to the proposed rule in the emissions inventory to assess whether the Bay Area is making Reasonable Further Progress in the direction of compliance with NAAQS <Costa, OCE. 4/17/03>**

*The BAAQMD emissions inventory already includes flare emissions of 13 tons per day based on data from an earlier BAAQMD flare study (see the discussion regarding inventory issues in the Bay Area 2001 Ozone Attainment Plan on pp. 6-7). Although the District's preliminary estimate in the current flare study was higher than 13 tons, the estimate was based in part on assumptions that will need to be revised to reflect data received after the estimate was made. Although the current study has not been finalized, emissions estimates will likely be lower than indicated in the draft study, and may be no higher for the study period than the 13 tons already included in the inventory. Data gathered through monitoring installed pursuant to the monitoring rule should provide a basis for estimating flare emissions that is far superior to the bases underlying previous estimates, and can be used to refine the inventory.*

- 62. The 98-99% destruction efficiency rate assumes that certain meteorological conditions are also being met. EPA studies conducted in the early 1980's do not take into account environmental factors that may affect flare efficiency. "There is no suggestion [in the EPA study] that combustion efficiencies may depend on parameters that influence flame size, and consequently heat releases, such as stack velocities and wind speeds." [Douglas M. Leahey, Katherine Preston and Mel Strosher, Theoretical and Observational Assessment of Flare Efficiency, 51 J. Air & Waste Mgmt. 1610, 1616 (2001).] More studies should be done to determine the correct destruction efficiency rate. <Costa, OCE. 4/17/03>**

*Most arguments about flare efficiency that have been made to the District are based on a selective reading of technical scientific and technical literature on the*

*subject, and much of that literature is not analytically robust. The Technical Committee of the BAAQMD Advisory Council is currently exploring the question of efficiency. In addition, an interesting flare efficiency study is currently being conducted by the Texas Commission on Environmental Quality (TCEQ). The study is expected to be completed in 2003, and the District will follow this effort and other relevant studies closely. The District agrees that a better understanding of flare efficiency is desirable, and expects that studies currently underway will promote a better understanding.*

- 63. Bay Area residents deserve to know about the pollution released in their own backyard; the BAAQMD should publish the flare monitoring reports online. <Costa, OCE. 4/17/03>**

*See response #10.*

- 64. The flare monitoring rule should ensure that the monitoring data will disclose the amount of pollution that is actually released and ensure that the information is transparent so that Bay Area residents can interpret the data. <Costa, OCE. 4/17/03>**

*This is the intent of the flare monitoring rule.*

- 65. BAAQMD should conduct further investigations to ensure that flare technology is satisfactorily destroying pollutants emitted through waste streams at these facilities in the Bay Area and to take an active role in requiring facilities to reduce the level of emissions produced through upsets, startup, shutdown, and maintenance events. <Costa, OCE. 4/17/03>**

*The District is following the TCEQ study on flare efficiency and other studies on flare efficiency. The flare monitoring rule requires monitoring but does not impose controls. See responses #13, #17, and #21.*

- 66. Reports of smoke are entirely dependent on visual observations made by workers at these facilities who may miss many events. BAAQMD must require accurate reporting of emission discharges from flare operating systems and improved reporting requirements so as to better distinguish between reporting of smoking flare events and opacity events which are not related to flares. <Costa, OCE. 4/17/03>**

*Enforcement of smoking and opacity restrictions requires visual observation, and reporting is insufficient for enforcement purposes. Opacity monitoring required by 40 CFR §60.18 is based on Method 22, a visual observation method. The District uses visual observation methods to enforce a three-minute-per-hour smoke limit on all flares, whether they are subject to the NSPS or not.*

- 67. Reports of VOCs, H2S, and other emissions should be based on much more accurate estimates of flare performance that take into account factors which diminish combustion efficiency. <Costa, OCE. 4/17/03>**

*See response #62.*

- 68. Sources are required under state and federal law to ensure that flares will not smoke for more than five minutes in a consecutive two hour period. Yet, many sources report repeated violations of flares which smoke beyond five minutes in their upset reports. BAAQMD must enforce violations of the smoking flare requirements and ensure that sources are abiding by state and federal law. <Costa, OCE. 4/17/03>**

*This statement is a direct quotation from a report by a New York environmental group on smoking flares in Port Arthur, Texas. It is not correct as a statement of California conditions or law. The BAAQMD enforces California and BAAQMD requirements that are more stringent than the cited standards.*

- 69. Recent studies indicate that flare combustion technology is not performing at expected levels of efficiency when conditions such as high wind speed are present. BAAQMD must require companies to improve current technology and enhance flare design to rectify the affects of meteorological conditions on flare combustion. <Costa, OCE. 4/17/03>**

*This is also a direct quote from the Port Arthur, Texas report. See response #68. Regarding efficiency, see response #62.*

- 70. Notes need to be taken at ALL meetings- whether they are community meetings, public workshops, public hearings or work group meetings. <Cosentino, Communities for a Better Environment (CBE). E-mail. 4/17/03>**

*The District generally makes sound recordings of workshops but did not do so for the community meetings on the flare monitoring rule. It is important to note that the meetings were conducted in addition to, not in lieu of, an opportunity to submit comment.*

- 71. Notes from community and industry meetings need to be posted on the District's website and distributed to all participants. Transparency in the rule making process is of benefit to everyone involved. <Cosentino, CBE. 4/17/03>**

*The District regularly meets with community members and with the industries it regulates. Many of these meetings are informal, and notes are not taken. District resources available to record these informal discussions are limited. At some point, commitment of resources to transcription of discussions takes away from the District's ability to conduct outreach and solicit views.*

72. **Facilitation needs to be improved. The District should have both a facilitator and a “stacker” (to keep track of who raises their hand first and call on people) at all meetings. Also the stacker should help bring around a microphone which would ensure everyone can hear the public’s questions and comments as well as the Districts (the microphone would also record people’s comments). Everyone should be allowed to speak, and open discussion about issues should be encouraged. <Cosentino, CBE. 4/17/03>**

*Comment noted. These appear to be reasonable suggestions for conducting some formal meetings.*

73. **Develop a follow up plan with the community. The District does not need to answer everyone’s questions in the meeting, but should develop a follow-up plan with the community as to how issues will be addressed by the District. <Cosentino, CBE. 4/17/03>**

*Comment noted. This also appears to be reasonable for certain processes.*

74. **An agenda needs to be provided ahead of time and should be posted and followed in the meeting. I understand the District intended to move quickly to adopt a flare monitoring rule. However, this should not be at the expense of a meaningful public process. I remind you that a false process such as this violates Environmental Justice Principles. Environmental Justice Principle #7 Environmental Justice demands the right to participate as equal partners at every level of decision-making, including needs assessment, planning, implementation, enforcement and evaluation. <Cosentino, CBE. 4/17/03>**

*The District disagrees with the view that the process for developing this proposed rule was somehow a "false process." The meetings that were conducted provided a forum for discussion of a great many issues and concerns, and many members of the communities thanked us for the effort. We have also provided extensive opportunity for comment since the meetings. The District acknowledges that more productive feedback and discussion could have occurred if there were more time to complete the process. As you know, the 2001 Ozone Plan as approved by the three regional agencies allowed to the end of 2003 to complete the further study measures. At the request of CBE and others, the District agreed to complete drafts of the further studies by the end of 2002. This has left us with fewer resources to devote to the control measures in the Plan.*

75. **I believe it would be of great benefit to the District in administering this rule, if the requirement was added for submittal of a Flare Monitoring Plan from each affected refinery. The required plan would include:  
Description of all flare monitoring and video monitoring equipment proposed for compliance with the rule;**

Detailed description of manufacturer's specifications, including type, manufacturer, model, range, precision, accuracy, calibration and maintenance requirements, and recommended quality assurance procedures;

Description of proposed sampling locations for each flare at the facility;

Description of proposed type of gas composition sampling and analytical methods to be used for each flare at the facility;

Description of selected flow verification test methods to be used;

Description of data collection and management systems;

Proposal for alternative sampling methods/protocols.

I think that adding this level of structure to the new rule would benefit both the refineries and the District in overall execution of the new rule, especially considering individual system modifications over time. Wileen Sweet-Dodge, Environmental Manager, Emerald Hills, CA. E-mail. 4/17/03.

*The District considered this approach. The South Coast AQMD rule requires submission of monitoring plans that include these elements. However, incorporating a process for plan submission, review, and approval would substantially delay effectiveness of the rule. District staff ultimately decided that requirements for flare monitoring could be adequately put into effect and enforced through generic rule provisions. The District believes the proposed rule, in conjunction with other information-gathering tools, will allow it to obtain necessary facility-specific information, and to track changes that occur over time.*

76. **Once a day gas composition sampling allowed by the rule completely invalidates its usefulness, and legally allows 11 or more tons per day of unmonitored hydrocarbon emissions, resulting in little or no progress toward monitoring and determining Bay Area flare emissions. <May, Communities for a Better Environment (CBE). E-mail. 4/17/03>**

*This comment was based on the sampling trigger proposed in an earlier draft. The trigger level has since been modified and made more stringent relative to that earlier draft. Even with the trigger level in the earlier draft, all flows would be monitored for volume, and so it was not the case that 11 tons of emissions would go unmonitored. See response #1.*

77. **Sampling should be required every 15 minutes rather than once per day. <May, CBE. 4/17/03>**

*The current proposal allows four different approaches to sampling. Three of the four methods require sampling every 15 minutes or continuously. Manual sampling, which is also allowed, is likely to be used for flares that are used infrequently. Manual sampling would not be practical for flares used regularly because it would become cumbersome with regular use and would involve unnecessary risks to workers. Even this manual sampling method is more stringent than the South Coast AQMD rule.*



- 78. Readily available and cheap autosampling should be required to protect workers from hazards and to facilitate more frequent sampling. <May, CBE. 4/17/03>**

*Autosampling is one of the methods allowed in the rule. The rule continues to allow manual sampling because some flares have not been used in years, and imposing a requirement to install auto-samplers or continuous analyzers for these flares would not be reasonable. See response #77. All equipment, whether manual sampling equipment, auto samplers, or continuous analyzers require attention and maintenance and therefore some risk to workers.*

- 79. Available flow monitoring equipment has the capability to detect flows ten times lower than the 50,000 cu ft/hour threshold, making unnecessary the exemptions for lower flows where efficiency may be lower. <May, CBE. 4/17/03>**

*No version of the rule has included such an exemption. See response #2.*

- 80. The lax “flow verification” section (12-11-602) allows the choice between vague and undefined methods for quality control of flow measuring equipment and should be narrowed and defined. <May, CBE. 4/17/03>**

*Section 12-11-602 has been revised to delete less well defined verification methods. Also see response #3.*

- 81. The flare efficiency is defined as 98% in the regulation, which does not account for conditions known to cause efficiency to go far below this number. <May, CBE. 4/17/03>**

*Most arguments about flare efficiency that have been made to the District are based on selective readings of scientific and technical literature, and much of that literature is not analytically robust. The District expects that progress will be made in the near future towards understanding flare efficiency. For instance, the Technical Committee of the BAAQMD Advisory Council is currently exploring the question of efficiency. In addition, an interesting flare efficiency study is currently being conducted by the Texas Commission on Environmental Quality (TCEQ). The study is expected to be completed in 2003.*

*The proposed rule did not require calculation of emissions by flare operators, and the specification in earlier drafts of the efficiency to be used was deleted. At the request of WSPA and the Unions at the May 8th flare workgroup meeting, the revised rule re-incorporates a requirement for emission calculations. The Unions suggested using the efficiencies specified in the Texas rule (98% for most flares, 93% for low-BTU gases). While WSPA has argued for higher efficiency, the proposed rule includes the Unions’ suggestion.*

*The reasoning behind specifying an efficiency figure, as articulated by the Unions and WSPA, seems to be that it is better to provide the public with some estimate of total emissions, even if the estimate employs some assumptions that are open to debate. District staff was persuaded by this reasoning, and so has incorporated assumed efficiencies in the revised rule. However, it is important to note that these efficiencies are set for the narrow purpose of emissions estimates to be made in reports submitted by refineries pursuant to the rule. The proposed rule does not restrict the District or anyone else from using a different efficiency figure in any other context. If the District does use a different efficiency figure, it will of course explain its reasoning for doing so. If more reliable information regarding flare efficiency becomes available, the District will consider revising the rule to reflect that information.*

- 82. The District should explore and report on available methods for determining flare efficiency and emissions in the atmosphere. <May, CBE. 4/17/03>**

*The Advisory Council Technical Committee is examining the question of flare efficiency. The District is also monitoring progress on the TCEQ study mentioned in response #62.*

- 83. Putting video monitoring of flaring on the web would allow District staff to instantly view in real-time the same incidents neighbors are reporting, and allow them to discuss flaring with refinery personnel as events are occurring. <May, CBE. 4/17/03>**

*The proposed rule does not require web posting for the reasons discussed in the staff report (see discussion of Section 12-11-507). Video monitoring records must be submitted to the District each month.*

- 84. Video monitoring records should also be electronically stored at the District. <May, CBE. 4/17/03>**

*See response #82.*

- 85. The current version of the rule actually neglects to require that the refiners submit the video image archives to the District with the monthly report. <May, CBE. 4/17/03>**

*Section 12-11-401 has been revised to require submission to the District.*

- 86. The rule unnecessarily limits the requirement for storage of video monitoring to one frame per second, effectively reducing the video monitoring to a bunch of snapshots that don't show the full effect of flame characteristics. <May, CBE. 4/17/03>**

*The video frame rate of the proposal is intended to ensure that electronic video files are of reasonable size so that they can be easily stored and distributed.*

*This requires a frame rate of one frame per minute, the frame rate found in the proposed rule. At higher frame rates, files cannot be sent electronically and would require multiple DVDs per month to store the images for each flare.*

- 87. The recently added blanket exemptions for monitoring sulfur recovery plants and flexicoker gas ignore hydrocarbons present in these streams which can significantly add to flare emissions. <May, CBE. 4/17/03>**

*The exemption in the earlier draft rule was not a “blanket exemption;” the exemption only exempted these flares from composition monitoring for hydrocarbons. Monitoring for flow and sulfur content was required. The proposed rule entirely deleted this exemption. District staff is now recommending in the revised rule to add back a more limited exemption for flares burning gas from a flexicoker. For these flares, the operator would have to monitor for flow and sulfur content. The limited exemption would allow an operator to avoid monitoring for hydrocarbons provided methane concentration was demonstrated to be less than 2% and non-methane hydrocarbon content was demonstrated to be less than 1%.*

- 88. Exemptions for monitoring flaring of operations of wastewater ponds, marine vessels, and storage tanks could represent huge emissions and should be removed. <May, CBE. 4/17/03>**

*These exemptions are limited to thermal oxidizers for which emissions can be measured directly and to several small flares that serve as backup to vapor recovery systems. The one flare that is neither a thermal oxidizer nor a safety backup flare is one that controls emissions from a railcar loading operation at the Shell refinery. The staff report now includes a more detailed discussion of the exemptions and the sources to which they would apply.*

- 89. Equipment downtime less than 24 hours is exempt from reporting. <May, CBE. 4/17/03>**

*The proposed Section 12-11-401.7 requires reporting of downtime exceeding 24 hours. District staff are recommending in the revised rule to require that monthly reports include all downtime. This data for shorter downtime periods would generally be available in the monthly reports even without this explicit requirement because monitoring data from flow meters and continuous analyzers should be continuous data; all monitor downtime would then appear as data gaps. For CEMs, the refineries typically note data gaps due to meter downtime. Note that the rule requires calculation of flows if flow monitors are down, and sampling if continuous analyzers are down.*

- 90. Both H<sub>2</sub>S and total sulfur need to be monitored (not total reduced sulfur which misses oxidized sulfur compounds-section 502.3 3.2). If only total sulfur is measured, then for purposes of compliance with federal Subpart J**

**H2S limits, all of total sulfur must be considered as H2S. <May, CBE. 4/17/03>**

*Flare gas does not contain significant amounts of oxidized sulfur compounds. Monitoring of total reduced sulfur is appropriate for determining compliance with the Subpart J limits, which apply to flares that were subject to New Source Review and are used as control devices.*

- 91. Continuous monitoring is feasible, and monitoring “dirty” streams of fuel gas and sulfur recovery plants is common in Bay Area refineries. <May, CBE. 4/17/03>**

*Continuous analyzers are used at refineries to monitor sulfur compounds in fuel gas and after sulfur recovery. Fuel gas is quite clean compared to flare gas, and any monitoring at sulfur recovery plants using sensitive equipment is downstream of sulfur recovery and required tail gas control units. No refinery in California or Texas has used continuous analyzers on flare vent gas. The rule is structured to encourage this approach, but other methods must be allowed to ensure that the rule will be workable.*

- 92. The public review process for this rulemaking had severe problems which can be avoided in the future. <May, CBE. 4/17/03>**

*At the direction of the APCO/Executive Officer, the staff put the development of this rule on a fast track. As the commenter is aware, the 2001 Ozone Plan as approved by the three regional agencies allowed to the end of 2003 to put into effect control measures anticipated in the Plan. At the request of CBE and others, the District agreed to complete drafts by the end of 2002. It was foreseeable and perhaps inevitable that we would have to expedite this rulemaking effort and that other control measures will be similarly expedited. The District has tried to balance the need for an expedited process, as driven by Plan deadlines, with the desire expressed by many for a more thorough and deliberate rule development process.*

- 93. The rule proposed by the District would fail to detect up to 93% of flaring events, based on actual flaring data submitted by the Shell refinery, and would fail to detect up to 80% of flaring events at the ChevronTexaco refinery. Because of inadequate detection limits, the proposed rule would allow the flares to release over 28 million cubic feet per day of gases, or a total of 11 tons per day, without any monitoring. <Drury and Fox, Refinery Trade Unions - PSU Local 302, IBEW Local 549, Laborers Local 324, Insulators Local 16 (Unions). E-mail and messenger. 4/17/03>**

*None of this flow would be missed by flow meters. The comment is misleading in failing to state that the commentors are claiming that composition sampling would not be required for these flows because, in their opinion, the sampling trigger in the earlier draft was not sufficiently stringent (note that the revised rule includes*

*the trigger level advocated by the Unions in their comments). The Shell and Chevron data is not "actual flaring data" and does not come from flow meters. It is based on calculations and estimates and therefore on average flows. Because averages would miss the variability that is found in actual flow meter measurements, the Shell and Chevron estimates provide no information that can be used to determine whether sampling would have been required under any proposed trigger. It can be said, however, that most of the Shell flaring events were of such short duration that no sampling would have been possible, regardless of the sampling trigger used. It is also important to note that the Shell and Chevron estimates indicate that these two refineries were together responsible for about 9% of all vent gas flared during the study period (excluding Shell's flexi-gas flare for which sampling or continuous analysis would clearly be required under either the earlier or current trigger proposal).*

- 94. The proposed rule is inadequate because it only requires once per day monitoring for most flaring events (Rule Section 502.3.3. I.a) except when the flow to the flares exceeds 50,000 cubic feet in any 60 minute period. The Bay Area's rule should be at least as stringent as the rules in Texas, Utah and Los Angeles. The rule should require automatic sampling or continuous composition monitoring every 15 minutes after any flow is detected above 0.1 feet per second, and the sampling should continue every 15 minutes until the flaring ceases. <Drury and Fox, Unions. 4/17/03>**

*The composition monitoring trigger level in the revised rule is identical to that in the South Coast AQMD flare monitoring rule. However, the sampling frequency requirement is far more stringent than the South Coast rule because it requires samples every 15 minutes after the trigger level is reached if integrated sampling is used and every 3 hours if manual sampling is used. Note that manual sampling is not likely to be used if a flare is in regular use. See response #77. The South Coast rule only requires one sample per week once sampling is triggered.*

*The Texas rule applies to flares that receive gas streams containing at least 5% highly-reactive VOCs (defined as 1,3 butadiene, butenes, ethylene, and propylene – see Title 30, Texas Administrative Code §115.10). Refinery flare gas typically contains less than 5% of these highly-reactive VOCs. The Texas rule was written for chemical plant flares and is not an appropriate comparator.*

*The Utah rule applies to landfill gas collection systems and requires that flow rate (not composition) be monitored every 15 minutes "to identify periods when the gas flow has been diverted from the control device or periods of no flow from the collection system." The Utah rule therefore does not support the commentor's assertion regarding frequency of composition monitoring. Regarding flow rate monitoring, the Utah rule is clearly less stringent than the proposed rule, which requires continuous monitoring of flow rate.*

95. **The detection limits required by the rule will fall to detect many flaring events, despite the fact that much more accurate technology is readily available. <Drury and Fox, Unions. 4/17/03>**

*The rule requires all flows to be measured and reported (see Section 12-11-401). The comment is based on a misinterpretation of Section 12-11-501, which specifies a series of requirements for any device used to measure flow. These requirements can, at present, be met only by ultrasonic flow meters. A major manufacturer guarantees these meters to be accurate to within 5% over the range from 1 to 275 feet per second. Specifying this flow velocity range does not mean that the meter does not measure lower flows; it just does so with reduced accuracy.*

96. **The proposed rule only requires monitoring of what goes into the flare, not what comes out and assumes that 98% of flare gas is destroyed. An estimated efficiency of 98% should only be allowed when the requirements of 40 CFR §60.18 are met. At all other times, an estimated efficiency of 80% should be used, which is the lowest reported efficiency in studies relied upon by the District for a large flare. The BAAQMD should conduct a flare destruction efficiency study to analyze actual efficiency in the field, and the results of that study may be used to refine the rule. <Drury and Fox, Unions. 4/17/03>**

*See response #81.*

97. **The exemptions for marine vessel loading, sulfur recovery plant flares, flexicoker flares, thermal oxidizers, and organic liquid storage should be removed from the rule. <Drury and Fox, Unions. 4/17/03>**

*The exemption for sulfur recovery plants and flexicoker flares was removed from the proposed rule. Staff is now recommending and has included in the revised rule a limited exemption for flexicoker flares. The staff report provides justifications for the other exemptions included in the rule. All of the exempted devices, except for flares exempted by Section 12-11-110, are thermal oxidizers, which, unlike flares, are enclosed combustion devices that exhaust combustion products through a duct or stack where they can be directly measured. The proposed rule requires monitoring of the gas input to flares because there is no readily-available means to directly measure flare emissions (though some remote sensing devices are being used in research). There is no useful purpose in imposing flare monitoring requirements on devices from which emissions can be directly measured. For a discussion of the flares exempted by Section 12-11-110, see response #99.*

98. **The staff report provides no justification for the distinction between flares and thermal oxidizers or the assumed de minimus [*sic*] emissions. <Drury and Fox, Unions. 4/17/03>**

*This comment was made on an earlier draft of the staff report. The staff report discussion of this issue has been expanded. As noted in response #92, thermal oxidizers and flares are different devices. The thermal oxidizer definition in the proposed rule (Section 12-11-209) clarifies this distinction. The Fox comments are incorrect in claiming that “a thermal oxidizer is a flare.” The distinction drawn between the two in most air pollution control literature is the same as that drawn by the added language: a thermal oxidizer exhausts combustion products through a duct or stack where emissions can be directly measured. For that reason, it would serve no useful purpose to impose requirements to monitor gas going to a thermal oxidizer when the combustion products can be directly measured in the stack.*

- 99. The exemption for organic liquid storage and distribution [in Section 12-11-110] is not justified because emissions are high enough to warrant concern. <Drury and Fox, Unions. 4/17/03>**

*The staff report states that this exemption would apply to six sources in the District: a backup safety flare for a propane tank at the Tesoro refinery, a similar flare for a butane sphere at the Valero refinery, three backup flares for vapor recovery systems on tanks at the Shell refinery, and a flare for the LPG railcar loading operation at the Shell refinery. All but the LPG loading flare are secondary control devices that are used when a vapor recovery system fails or is being maintained. The Fox comments claim that “the emissions from the Shell tank flares were 1.2 tons per year of VOCs and 0.1 ton/yr of SO<sub>2</sub>” as the basis for an argument that the flares should not be exempt from the rule. The VOC emissions are 6.6 pounds per day. From the perspective of the proposed rule, these emissions are de minimis and do not warrant the kind of monitoring that the rule requires for flares, which can potentially emit VOCs at a rate three or four orders of magnitude higher. In addition, all of these sources are control devices used to comply with other District regulations.*

- 100. The exemption for flares and thermal oxidizers used to control marine vessel loading should be eliminated because there is no data to confirm that they have negligible emissions. <Drury and Fox, Unions. 4/17/03>**

*Thermal oxidizers are used at the Chevron, ConocoPhillips, and Shell refineries to meet Regulation 8, Rule 44 control requirements. No marine loading terminal uses a flare for control. The thermal oxidizers at the three marine terminals have high efficiencies that are mandated by the rule and by permit conditions and can be directly verified by source tests. Because these devices are, by definition, thermal oxidizers, they are not subject to the rule. This exemption is therefore included merely to clarify their exempt status. In any case, it would serve no useful purpose to impose the flare monitoring rule requirements on these devices because emissions can be directly determined through a source test of the thermal oxidizer stack.*

- 101. The exemption for thermal oxidizers used to control emissions from wastewater treatment systems should be eliminated because emissions from wastewater systems are significant. <Drury and Fox, Unions. 4/17/03>**

*The Fox comment suggests that because wastewater treatment systems as a category may have significant emissions, thermal oxidizers that control wastewater sources should be subject to the flare monitoring rule. But emissions from thermal oxidizers are directly verifiable; imposing requirements to monitor gas flow to an oxidizer would be unnecessary. In any case, these devices are exempt by definition. See responses #98 and #100.*

- 102. Sulfur recovery plant flares should not be exempt because of the potential for organic emissions. <Drury and Fox, Unions. 4/17/03>**

*This exemption has been dropped.*

- 103. Flexicoker flares should not be exempt from monitoring for hydrocarbon and methane composition because flexicoker gases may contain elevated concentrations of methane and other hydrocarbons. <Drury and Fox, Unions. 4/17/03>**

*This exemption was dropped from the proposed rule. Staff are recommending and have included in the revised rule a limited exemption from hydrocarbon and methane monitoring (Section 12-11-114). The exemption is conditioned upon a weekly lab analysis showing that methane and non-methane hydrocarbons are not found in elevated concentrations (methane content must be less than 2% and non-methane hydrocarbon content must be less than 1%).*

- 104. The definitions of flare and thermal oxidizer are inadequate. <Drury and Fox, Unions. 4/17/03>**

*These definitions have been clarified. Language in the definition of thermal oxidizer makes it clear that a thermal oxidizer exhausts combustion products through a vent, duct, or stack that allows direct measurement of combustion products. See response #98.*

- 105. The vent gas definitions should not exclude purge and pilot gases because only vent gas is monitored for composition, and these gases may contain hydrocarbons. <Drury and Fox, Unions. 4/17/03>**

*Most of the flares at refineries in the District use water seals and do not use purge gas at all. For those that do, natural gas is used. Requiring composition monitoring would be pointless. If there were a reason to require this monitoring, changing the definition of vent gas would not be the appropriate way to accomplish this purpose.*



- 106. The rule should be modified to require posting of monthly reports on the District website within 24 hours, placing copies in libraries, and preparation and distribution of CDs containing all supporting data. <Drury and Fox, Unions. 4/17/03>**

*The District will consider use of the District website. See response #10.*

- 107. The reporting requirements allow emission calculations to assume a flare control efficiency of 98%. The studies do not support this assumption, and we recommend that the section be amended to adopt the TNRCC approach. <Drury and Fox, Unions. 4/17/03>**

*See response #81.*

- 108. The language in Section 12-11-501.2 should be modified to read: "The device shall continuously measure velocity over the full potential range of operation of each covered flare, from a minimum velocity of 0.1 ft/sec to the maximum expected for each individual flare, but no lower than 275 ft/ sec. <Drury and Fox, Unions. 4/17/03>**

*This comment reflects a concern that the specification (in Section 12-11-501.2) that the flow measurement device measures the velocity range from 0.5 to 275 feet per second is a limitation on the requirement in Section 12-11-401 to report all flows. Section 12-11-501 is intended as a device specification that effectively dictates ultrasonic meters. The velocity specification does not mean that the meter is incapable of measuring lower flows; it just does so with reduced accuracy.*

- 109. We recommend that the rule be revised to require a minimum accuracy of 5% over the entire flow range. <Drury and Fox, Unions. 4/17/03>**

*The proposed rule did not include an accuracy specification for the flow monitoring device. The revised rule now includes an accuracy specification in Section 12-11-501.*

- 110. Section 501.4 should be modified to require that the monitor be located 'on the main flare header, after the knock-out pot and addition of any supplementary fuel' to assure that it measures the flow that is actually combusted. <Drury and Fox, Unions. 4/17/03>**

*The suggested language is too prescriptive and, in some cases, would dictate the installation of a flow meter within the radiation zone of a flare. The heat would destroy the meter.*

- 111. We recommend that Section 501.3 be modified to require molecular weight, temperature, and pressure to be continuously measured. <Drury and Fox, Unions. 4/17/03>**

*Time of flight ultrasonic meters automatically make these measurements in order to produce volumetric flow outputs in standard cubic feet. Including these requirements in the device specification would preclude competing technologies that might offer superior performance without relying on these measurements. The proposed rule adds a requirement that molecular weight data be reported if available from the flow meter (Section 12-11-401).*

- 112. We recommend that Section 501.3 be modified to require that the monitors be maintained according to vendor specifications and annually calibrated to specifications. <Drury and Fox, Unions. 4/17/03>**

*All drafts of the rule have included a requirement (in Section 12-11-506.3) that meters be maintained and calibrated in accordance with the manufacturer's specifications.*

- 113. Because of worker safety issues, we suggest that the rule state that manual sampling may be not be used. <Drury and Fox, Unions. 4/17/03>**

*The proposed rule does not include a provision for manual sampling. However, District staff have concluded that manual sampling is an appropriate option for flares that are used infrequently. For these flares, which may combust vent gas less than once per year, installation of auto-samplers or continuous analyzers would be unreasonable. In addition, the maintenance necessary to keep this equipment in a state of readiness would involve greater worker exposure to risk than would an occasional need to sample manually. The revised rule therefore includes a manual sampling option. This option uses the stringent South Coast AQMD trigger for sampling.*

*This manual sampling option would probably not be practical for flares that are used with some regularity. The need to continually take samples would be burdensome, and would likely result in missed samples. Because of these considerations, the District expects that the use of manual sampling will be restricted to low usage flares.*

- 114. The draft rule's trigger of 50,000 standard cubic feet in an hour with samples required within 15 minutes for auto-samplers and 30 minutes for manual sampling and with subsequent samples every three hours thereafter means that samples are taken at flows that are too high, too long after flaring starts, and too infrequently thereafter. The rule should be modified to require that sampling commence within 15 minutes of the detection of flow and to reduce the sampling frequency to every 15 minutes. <Drury and Fox, Unions. 4/17/03>**

*At the flare workgroup meeting on April 18th, significant time was spent discussing the trigger level for composition sampling. Based on these discussions, the proposed rule specified a composition sampling trigger level of 6,000 standard cubic feet in 15 minutes, which represented a flow velocity of*

*approximately 0.5 feet per second, the lowest velocity that District staff felt would represent real flows to the flare (see response #1). At the May 8th workgroup meeting, refinery representatives suggested that the trigger was too sensitive, and the Unions proposed use of the South Coast AQMD trigger. The revised rule incorporates the South Coast sampling trigger, with sampling to begin within 15 minutes. Sampling would then be required every 3 hours with the manual sampling option, every 15 minutes with integrated sampling, and continuously with continuous analyzers. These requirements for sampling frequency are far more stringent than the South Coast AQMD requirements (which specify one sample after the trigger is reached and a weekly sample thereafter).*

- 115. Section 12-1-502 should be revised to require that both total sulfur and H<sub>2</sub>S be measured because oxidized sulfur compounds are included in vent gas streams. <Drury and Fox, Unions. 4/17/03>**

*Oxidized sulfur would not typically be found in flare vent gas in significant quantities.*

- 116. Section 502 should be modified to require that opacity and net heat content be monitored using the methods in 40 CFR 60.18 to ensure that the control efficiency is met. <Drury and Fox, Unions. 4/17/03>**

*Opacity monitoring required by 40 CFR §60.18 is based on Method 22, a visual observation method. The District already uses visual observation methods to enforce a three-minute-per-hour limit on all flares, whether they are subject to the NSPS or not. The District standard is more stringent than the NSPS standard. Sampling, integrated sampling, and GC analysis already specified in the rule would provide composition data that would allow the heat content to be calculated.*

- 117. We recommend that Regulation 12, Rule 11 be expanded to require that each refinery use an optical, remote-sensing instrument capable of measuring both SO<sub>2</sub> and hydrocarbons in flare exhaust gases. <Drury and Fox, Unions. 4/17/03>**

*Optical remote sensing equipment is currently used in flare efficiency research. This equipment is large, complicated, extremely costly, and requires highly-trained operators. Open-path passive FTIR systems rely on radiation differences between hot flare combustion gases and background and have higher limits of detection than active FTIR systems which use a radiation source. FTIR measurements depend upon keeping the plume within the instrument's field of detection. Passive FTIR is not suitable for flare monitoring because the flare plume varies in size and shape with flaring rate and moves with wind. Flare studies require skilled operators to ensure that the plume remains within the instrument's window.*

- 118. We recommend that Section 506.1 be modified to require recordkeeping of all periods of monitor inoperation and monthly reporting of the accumulated downtime for each monitor. <Drury and Fox, Unions. 4/17/03>**

*District staff are recommending in Section 12-11-401.7 of the revised rule that all periods of monitor inoperation be reported.*

- 119. We recommend that Section 506.2 be modified to require that any facility electing to use a continuous analyzer must also obtain equipment to allow manual or auto-sampling when the continuous analyzer is down and use it to collect a minimum of one sample every three hours**

*In the revised rule, the sampling interval for manual sampling is three hours (see Section 12-11-502.3. When a continuous analyzer is down, this would be the default sampling interval.*

- 120. A new section should be added to Section 506 that requires that flow rate be estimated when the flow meter is out of service using either the methods in Section 602 and/or flame length as recorded by the video.**

*This section in the revised rule now requires that flow be estimated using good engineering practices, which would allow use of the methods in Section 602, a flame length method, or other methods as available.*

- 121. We recommend that Section 506.3 be modified to require annual maintenance and field zeroing of ultrasonic velocity meters.**

*All drafts of the rule have included a requirement (in Section 12-11-506.3) that meters be maintained and calibrated in accordance with the manufacturer's specifications.*