BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

BOARD OF DIRECTORS
REGULAR MEETING
December 6, 2017

A meeting of the Bay Area Air Quality Management District Board of Directors will be held at 9:45 a.m. in the 1st Floor Board Room at the Air District Headquarters, 375 Beale Street, San Francisco, California 94105.

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.

This meeting will be webcast. To see the webcast, please visit http://www.baaqmd.gov/about-the-air-district/board-of-directors/resolutionsagendasminutes at the time of the meeting.

Public Comment Procedures

Persons wishing to make public comment must fill out a Public Comment Card indicating their name and the number of the agenda item on which they wish to speak, or that they intend to address the Board on matters not on the Agenda for the meeting.

Public Comment on Non-Agenda Matters, Pursuant to Government Code Section 54954.3 Speakers wishing to address the Board on non-agenda matters will be heard at the end of the agenda, and each will be allowed up to three minutes to address the Board at that time.

Members of the Board may engage only in very brief dialogue regarding non-agenda matters, and may refer issues raised to District staff for handling. In addition, the Chairperson may refer issues raised to appropriate Board Committees to be placed on a future agenda for discussion.

Public Comment on Agenda Items The public may comment on each item on the agenda as the item is taken up. Public Comment Cards for items on the agenda must be submitted in person to the Clerk of the Boards at the location of the meeting and prior to the Board taking up the particular item. Where an item was moved from the Consent Calendar to an Action item, no speaker who has already spoken on that item will be entitled to speak to that item again.

Speakers may speak for up to three minutes on each item on the Agenda. However, the Chairperson or other Board Member presiding at the meeting may limit the public comment for all speakers to fewer than three minutes per speaker, or make other rules to ensure that all speakers have an equal opportunity to be heard. The Chairperson or other Board Member presiding at the meeting may, with the consent of persons representing both sides of an issue, allocate a block of time (not to exceed six minutes) to each side to present their issue.

BOARD OF DIRECTORS REGULAR MEETING AGENDA

WEDNESDAY
DECEMBER 6, 2017 **BOARD ROOM**
9:45 A.M. **1ST FLOOR**

CALL TO ORDER **Chairperson, Liz Kniss**

1. **Opening Comments**
   Roll Call
   Pledge of Allegiance

   The Chair shall call the meeting to order and make opening comments. The Clerk of the Boards shall take roll of the Board members. The Chair shall lead the Pledge of Allegiance.

COMMENDATIONS/PROCLAMATIONS/AWARDS

2. *The Board of Directors will recognize outgoing Advisory Council Members, Tam Doduc and Dr. Robert Harley, for their service, leadership and dedication to protecting air quality in the Bay Area.*

CONSENT CALENDAR (ITEMS 3 - 5) **Staff/Phone (415) 749-**

3. Minutes of the Regular Board of Directors Meeting of November 15, 2017
   Clerk of the Boards/5073

   The Board of Directors will consider approving the draft minutes of the Regular Board of Directors Meeting of November 15, 2017.

4. Board Communications Received from November 15, 2017 through December 5, 2017
   J. Broadbent/5052
   jbroadbent@baaqmd.gov

   A copy of communications directed to the Board of Directors received by the Air District from November 15, 2017 through December 5, 2017, if any, will be at each Board Member's place.

5. Consider Authorization for a Contract Extension to Technical and Business Systems and Execution of a Purchase Order in Excess of $100,000 Pursuant to Administrative Code Division II Fiscal Policies and Procedures, Section 4.3 Contract Limitations, for Continued Operation of BioWatch Monitoring Network **J. Broadbent/5052**
   jbroadbent@baaqmd.gov

   The Board of Directors will consider authorizing the Executive Officer/APCO to extend the current contract for two years and issue a Purchase Order for Fiscal Year Ending 2018 for an amount not to exceed $583,614 for Technical and Business (T&B) Systems.

COMMITTEE REPORT

6. Report of the **Climate Protection Committee** Meeting of November 16, 2017

CHAIR: T. Barrett **J. Broadbent/5052**
jbroadbent@baaqmd.gov

The Committee received the following reports:

A) AB 398 and the Air District 2017 Clean Air Plan

1) None; receive and file.

B) California Air Resources Board Draft 2017 Climate Change Scoping Plan Update

1) None; receive and file.

PUBLIC HEARING

7. Public Hearing to Consider Adoption of Proposed Technical and Administrative Amendments to the Air District's New Source Review and Title V Permitting Regulations (Regulations 2, Rules 1,2,4, and 6) and associated California Environmental Quality Act (CEQA) Negative Declaration **J. Broadbent/5052**
jbroadbent@baaqmd.gov

The Board of Directors will consider adopting proposed technical and administrative amendments to the Air District's New Source Review and Title V Permitting Regulation 2, Rule 1,2,4, and 6.

PUBLIC COMMENT ON NON-AGENDA MATTERS

8. **Public Comment on Non-Agenda Items, Pursuant to Government Code Section 54954.3**

Speakers will be allowed up to three minutes each to address the Board on non-agenda matters.

BOARD MEMBERS' COMMENTS

9. *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)*

OTHER BUSINESS

10. Report of the Executive Officer/APCO

11. Chairperson's Report

12. Time and Place of Next Meeting:

    Wednesday, December 20, 2017, at 375 Beale Street, San Francisco, CA 94109 at 9:45 a.m.

13. Adjournment

    The Board meeting shall be adjourned by the Board Chair.

CONTACT:

MANAGER, EXECUTIVE OPERATIONS **(415) 749-5016**
375 BEALE STREET, SAN FRANCISCO, CA 94105 **FAX: (415) 928-8560**
mmartinez@baaqmd.gov **BAAQMD homepage:**
www.baaqmd.gov

- To submit written comments on an agenda item in advance of the meeting. Please note that all correspondence must be addressed to the "Members of the Board of Directors" and received at least 24 hours prior, excluding weekends and holidays, in order to be presented at that Board meeting. Any correspondence received after that time will be presented to the Board at the following meeting.

- To request, in advance of the meeting, to be placed on the list to testify on an agenda item.

- Any writing relating to an open session item on this Agenda that is distributed to all, or a majority of all, members of the body to which this Agenda relates shall be made available at the District's offices at 375 Beale Street, Suite 600, San Francisco, CA 94105, at the time such writing is made available to all, or a majority of all, members of that body.

Accessibility and Non-Discrimination Policy

The Bay Area Air Quality Management District (Air District) does not discriminate on the basis of race, national origin, ethnic group identification, ancestry, religion, age, sex, sexual orientation, gender identity, gender expression, color, genetic information, medical condition, or mental or physical disability, or any other attribute or belief protected by law.

It is the Air District's policy to provide fair and equal access to the benefits of a program or activity administered by Air District. The Air District will not tolerate discrimination against any person(s) seeking to participate in, or receive the benefits of, any program or activity offered or conducted by the Air District. Members of the public who believe they or others were unlawfully denied full and equal access to an Air District program or activity may file a discrimination complaint under this policy. This non-discrimination policy also applies to other people or entities affiliated with Air District, including contractors or grantees that the Air District utilizes to provide benefits and services to members of the public.

Auxiliary aids and services including, for example, qualified interpreters and/or listening devices, to individuals who are deaf or hard of hearing, and to other individuals as necessary to ensure effective communication or an equal opportunity to participate fully in the benefits, activities, programs and services will be provided by the Air District in a timely manner and in such a way as to protect the privacy and independence of the individual. Please contact the Non-Discrimination Coordinator identified below at least three days in advance of a meeting so that arrangements can be made accordingly.

If you believe discrimination has occurred with respect to an Air District program or activity, you may contact the Non-Discrimination Coordinator identified below or visit our website at www.baaqmd.gov/accessibility to learn how and where to file a complaint of discrimination.

Questions regarding this Policy should be directed to the Air District's Non-Discrimination Coordinator, Rex Sanders, at (415) 749-4951 or by email at rsanders@baaqmd.gov.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
375 BEALE STREET, SAN FRANCISCO, CALIFORNIA 94105
FOR QUESTIONS PLEASE CALL (415) 749-5016 or (415) 749-4941

EXECUTIVE OFFICE:
MONTHLY CALENDAR OF AIR DISTRICT MEETINGS

DECEMBER 2017

TYPE OF MEETING	DAY	DATE	TIME	ROOM
Board of Directors Regular Meeting *(Meets on the 1st & 3rd Wednesday of each Month)*	**Wednesday**	**6**	**9:45 a.m.**	**1st Floor Board Room**
Board of Directors Mobile Source Committee *(Meets on the 4th Thursday of each Month)*	**Thursday**	**7**	**9:30 a.m.**	**1st Floor Board Room**
Board of Directors Budget & Finance Committee *(Meets on the 4th Wednesday of each Month)*	**Thursday**	**7**	**10:30 a.m.**	**1st Floor Board Room**
Advisory Council Meeting *(At the Call of the Chair)*	**Monday**	**11**	**10:00 a.m.**	**1st Floor Board Room**
Board of Directors Executive Committee *(Meets on the 3rd Monday of each Month)*	**Thursday**	**14**	**9:30 a.m.**	**1st Floor Board Room**
Board of Directors Personnel Committee *(At the Call of the Chair)*	**Monday**	**18**	**9:30 a.m.**	**1st Floor Board Room**
Board of Directors Stationary Source Committee *(Meets on the 3rd Monday of each Month)*	**Monday**	**18**	**10:30 a.m.**	**1st Floor Board Room**
Board of Directors Regular Meeting *(Meets on the 1st & 3rd Wednesday of each Month)*	**Wednesday**	**20**	**9:45 a.m.**	**1st Floor Board Room**
Board of Directors Budget & Finance Committee *(Meets on the 4th Wednesday of each Month* **- CANCELLED AND RESCHEDULED TO THURSDAY, DECEMBER 7, 2017 AT 10:30 A.M.**	**Wednesday**	**27**	**9:30 a.m.**	**1st Floor, Yerba Buena Room #109**
Board of Directors Mobile Source Committee *(Meets on the 4th Thursday of each Month)* **- CANCELLED AND RESCHEDULED TO THURSDAY, DECEMBER 7, 2017 AT 9:30 A.M.**	**Thursday**	**28**	**9:30 a.m.**	**1st Floor Board Room**

JANUARY 2018

TYPE OF MEETING	DAY	DATE	TIME	ROOM
Board of Directors Regular Meeting *(Meets on the 1st & 3rd Wednesday of each Month)* **- CANCELLED**	**Wednesday**	**3**	**9:45 a.m.**	**1st Floor Board Room**
Board of Directors Executive Committee *(Meets on the 3rd Monday of each Month)* **- CANCELLED**	**Monday**	**15**	**9:30 a.m.**	**1st Floor Board Room**
Board of Directors Stationary Source Committee *(Meets on the 3rd Monday of each Month)* **- CANCELLED**	**Monday**	**15**	**10:30 a.m.**	**1st Floor Board Room**
Board of Directors Regular Mtg. / Retreat *(Meets on the 1st & 3rd Wednesday of each Month)*	**Wednesday**	**17**	**9:45 a.m.**	**Dougherty Station Community Center 17011 Bollinger Canyon Rd, San Ramon, CA 94582**
Board of Directors Climate Protection Committee *(Meets on the 3rd Thursday of every other Month)*	**Thursday**	**18**	**9:30 a.m.**	**1st Floor Board Room**
Board of Directors Budget & Finance Committee *(Meets on the 4th Wednesday of each Month)*	**Wednesday**	**24**	**9:30 a.m.**	**1st Floor, Yerba Buena Room #109**
Board of Directors Mobile Source Committee *(Meets on the 4th Thursday of each Month)*	**Thursday**	**25**	**9:30 a.m.**	**1st Floor Board Room**

VJ – 11/27/17 - 12:41 p.m. **G/Board/Executive Office/Moncal**

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Liz Kniss and Members
of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: November 21, 2017

Re: Minutes of the Regular Board of Directors Meeting of November 15, 2017

RECOMMENDED ACTION

Approve the attached draft minutes of the Board of Directors Regular Meeting of November 15, 2017.

DISCUSSION

Attached for your review and approval are the draft minutes of the Board of Directors Regular Meeting of November 15, 2017.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Marcy Hiratzka
Reviewed by: Maricela Martinez

Attachment 3A: Draft Minutes of the Board of Directors Regular Meeting of November 15, 2017

Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, CA 94105
(415) 749-5073

Board of Directors Regular Meeting
Wednesday, November 15, 2017

DRAFT MINUTES

Note: Audio recordings of the meeting are available on the website of the Bay Area Air Quality Management District at http://www.baaqmd.gov/about-the-air-district/board-of-directors/resolutionsagendasminutes

CALL TO ORDER:

1. **Opening Comments:** Chairperson Liz Kniss called the meeting to order at 9:50 a.m.

   Roll Call:

   Present: Chairperson Liz Kniss; Vice Chairperson Dave Hudson; Secretary Katie Rice; and Directors Margaret Abe-Koga, Teresa Barrett, David J. Canepa, Pauline Russo Cutter, John Gioia, Carole Groom, Scott Haggerty, Tyrone Jue, Rebecca Kaplan, Doug Kim, Nate Miley, Karen Mitchoff, Hillary Ronen, Mark Ross, Rod Sinks, Jim Spering, Brad Wagenknecht, and Shirlee Zane.

   Absent: Directors Cindy Chavez, Pete Sanchez, and Jeff Sheehy.

COMMENDATIONS/PROCLAMATIONS/AWARDS

2. The Board recognized outgoing Hearing Board member, Gilbert Bendix, P.E., in absentia, for his nine years of service and dedication to protecting air quality in the Bay Area.

CLOSED SESSION (commenced at 9:52 a.m.)

NOTED PRESENT: Director Ronen was noted present at 10:15 a.m.

3. **CONFERENCE WITH LEGAL COUNSEL**

   A. EXISTING LITIGATION (Government Code Section 54956.9(a))

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

   Douglas Hall v. Bay Area AQMD, San Francisco County Superior Court, Case No. CGC-16-556094

Brian Bunger, District Counsel, reported that the Board authorized the completion of negotiations.

B. ANTICIPATED LITIGATION (Government Code Section 54956.9(d)(2))

Significant exposure to litigation pursuant to paragraph (2) of subdivision (d) of Section 54956.9: one potential case

Mr. Bunger had nothing to report for this item.

OPEN SESSION (commenced at 10:19 a.m.)

NOTED PRESENT: Director Cutter was noted present at 10:17 a.m., and Director Abe-Koga was noted present at 10:18 a.m.

CONSENT CALENDAR ITEMS (4 - 10)

4. Minutes of the Regular Board of Directors Meeting of November 1, 2017
5. Board Communications Received from November 1, 2017 through November 14, 2017
6. Air District Personnel on Out-of-State Business Travel
7. Notices of Violation Issued and Settlements in Excess of $10,000 in the month of October 2017
8. Quarterly Report of the Executive Office and Division Activities for the Months of July 2017 – September 2017
9. Consider Authorization to Execute Contract Amendments for My Air Online Development Services in Amounts in Excess of $100,000
10. Set Public Hearing for December 6, 2017, to Consider Adoption of Proposed Technical and Administrative Amendments to the Air District's New Source Review and Title V Permitting Regulations (Regulation 2, Rule 1,2,4 and 6) and California Environmental Quality Act (CEQA) Negative Declaration

Public Comments:

No requests received.

Board Comments:

None.

Board Action:

Vice Chair Hudson made a motion, seconded by Director Wagenknecht, to **approve** Consent Calendar Items 4 to 10 inclusive; and the motion **carried** by the following vote of the Board:

AYES:	Abe-Koga, Barrett, Canepa, Gioia, Groom, Haggerty, Hudson, Jue, Kaplan, Kim, Kniss, Mitchoff, Rice, Ronen, Ross, Sinks, Wagenknecht, and Spering.
NOES:	None.
ABSTAIN:	None.
ABSENT:	Chavez, Cutter, Miley, Sanchez, Sheehy, and Zane.

COMMITTEE REPORTS

11. Report of the Nominating Committee Meeting of November 15, 2017

Chair Kniss read:

The Committee met on Wednesday, November 15, 2017, and approved the minutes of November 16, 2016.

The Committee considered nomination of Board Officers for the 2018 Term of Office and recommends David Hudson as Chairperson, Katie Rice as Vice-Chairperson, and Rod Sinks as Secretary.

I move that the Board of Directors approve recommendations of the Nominating Committee.

Public Comments:

No requests received.

Board Comments:

None.

Board Action:

Chair Kniss made a motion, seconded by Director Mitchoff, to **approve** the recommendations of the Nominating Committee; and the motion **carried** by the following vote of the Board:

AYES:	Abe-Koga, Barrett, Canepa, Gioia, Groom, Haggerty, Hudson, Jue, Kaplan, Kim, Kniss, Mitchoff, Rice, Ronen, Ross, Sinks, Wagenknecht, and Spering.
NOES:	None.
ABSTAIN:	None.
ABSENT:	Chavez, Cutter, Miley, Sanchez, Sheehy, and Zane.

PUBLIC HEARING

12. Public Hearing for Proposed Regulation 11, Rule 18: Reduction of Risk from Air Toxic Emissions at Existing Facilities and the associated Recirculated Environmental Impact Report (EIR)

Jack Broadbent, Executive Officer/APCO, prefaced this presentation by listing seven key points about Proposed Rule 11-18. Mr. Broadbent then introduced Greg Nudd, Acting Rules and Strategic Policy Officer, who gave the staff presentation *Regulation 11, Rule 18: Reduction of Risk from Air Toxic Emissions at Existing Facilities,* including: overview; background; stakeholder outreach; Board presentations on Rule 11-18; comment letters and emails; responses to comments; Toxic Air Contaminant (TAC) overview; what are TACs; example TACs and their health impacts; exposure and toxicity determine health impacts; how do we measure impacts; Bay Area lifetime cancer risk from TAC exposure; overall downward TAC pollution trends, high remaining risks in some communities; regulatory authority; TAC impact mitigation programs; overview of Proposed Rule 11-18 and key

policy components; risk action thresholds; Rule requirements; potential risk reduction measures; Rule implementation overview and facility risk reduction; health protective standards; case studies of 25/M versus 10/M: (at a Richmond oil refinery, and South Bay cement kiln); flexible methods of compliance; implementation approach; California Environmental Quality Act analysis; and recommendations.

NOTED PRESENT: Director Miley was noted present at 10:29 a.m.

Public Comments:

Public comments were given by Rich Boyd, CARB; Steven Yang, Chevron; Erric Castillo, Shell; Shawn Lee, Chevron; Patrick Owens, Shell; Mark Brett, Anvil Corporation; Richard Queroz, Chevron; Walt Gill, Chevron; Brenda Kuehnle, Chevron; Bob Lilley, Contra Costa Electric; Steve Zhang, Shell; Ben Priddy, Chevron; Jerry Desmond, Metal Finishing Association of Northern California; Susan Nelson, Shell; Bob Brown, Western States Petroleum Association; Ernesto Arevalo, Communities for a Better Environment (CBE); Justin Shapiro, Andeavor; Alvaro Casanova, Center for Environmental Health; Janet Whittick, CCEEB; Margo Schueler, Berkeley Councilmember Linda Maio; Gary Hughes, Friends of the Earth US; Gary Latshaw, Cupertino resident; Angela Scott, CBE; Esther Goolsby, CBE; Angie Tam, CBE; Ivan Jimenez, Brightline Defense; Greg Karras, CBE; Shana Lazrow, CBE; Bill Whitney, CCBT; Don England, Andeavor; Olivia Day, Valero; Lynn McGuire, ERM; Kimberly Ronan, Valero; Kathy Wheeler, Shell; Tanya Stevenson, Breathe CA; Linda Sell, Sunnyvale resident; Juan Lazo Bautista, Breathe CA; Barry Chang, Cupertino Councilman; Jenny Bard, American Lung Association; Gordon Johnson, Shell; Brian Butler, Green Action for Health and Environmental Justice; Janel Edwards, Chevron; Laura Gracia, CBE; Fern Uennatorn, Environmental Defense Fund; Jan Warren, ICANCC; Sarah Deslauriers, CASA; Peter Dahling, Andeavor; Aimee Lohr, Phillips 66; Richard Gray, 350 Bay Area; Mike Miller, United Steel Workers; Robert Blount, UCSF; Colin Miller, Oakland Climate Action Coalition; and Sharon Evans, Phillips 66.

Board Comments:

The Board and staff discussed the need to regulate PM from stationary sources that is *not* related to diesel PM (undifferentiated PM); why staff feels that 10 in a million (10/M) is the most feasible risk action level standard; the feasibility of zero risk; which potentially subject sites have been identified by the District as "high-priority" and the criteria that determine "high-priority"; potentially varying timeframe requirements and options for meeting the 25/M and then 10/M risk action levels, depending on a facility's situation; tasks that would be undertaken by the Dispute Resolution Panel and Tracking and Implementation Work Group, and what those processes would look like, the Board's appreciation for the creation of these groups, which will keep all stakeholders accountable, and whether these groups' proceedings would postpone the processing of Health Risk Assessments (HRAs) and facilities' ability to achieve compliance for the given risk action levels; the need to address cumulative impacts through future regulation; the fact that high cancer risk still remains in certain communities, despite the overall decrease of air pollution; the suggestion of developing a set of best practices for each of the sub-groups within the wide range of facility types that will most likely be impacted by the Rule; whether impacted facilities will be able to use community-side mitigations as risk reduction plans; the feasibility of non-Title V facilities' HRAs being conducted by a third party; the potential cost of the HRAs; the manner in which the Board would be involved in oversight of the Rule's implementation, and how frequently staff would be reporting back to the Stationary Source

Committee and full Board about the progress of this Rule's implementation; the fact that the positive impacts on human health that this rule may produce have not been quantified or incorporated into the Rule's Socioeconomic Analysis because doing so is not a requirement of the State of California; the fact that the District has regulatory authority over all of the potentially subject sites, some of which are on State and Federal territories; future regulations that staff plans to bring to the Board in 2018, addressing ozone precursors and greenhouse gas emissions from landfill operations; the District's correspondence with Tesla about the Proposed Rule, as the Tesla manufacturing plant in Fremont is the largest in California; how the list of the potentially subject sites may change as staff refines the emissions inventory estimates; the duration of Board meetings at which regulations are being considered for adoption, and the concern that public comments are being cut short; whether the District has issued the Permit to Operate for the new crematorium in East Oakland; the request for additional cost benefit analysis of 25/M and 10/M; the Board's acknowledgement that the adoption of this rule may result in economic burdens the affected sites and industries; concerns that the Best Available Retrofit Control Technologies for Toxics (TBARCT) is not well-defined; the request that staff prepares a semi-annual "report card" of current risk action levels from the affected facilities for the Board's review; and the feasibility of allowing deadline extensions for facilities that could reach risk action levels below 10/M.

Board Action:

Director Gioia made a motion, seconded by Director Sinks, to **approve** the adoption of proposed Regulation 11, Rule 18: Reduction of Risk from Air Toxic Emissions at Existing Facilities (Rule 11-18) and the associated recirculated EIR; and the motion **carried** by the following vote of the Board:

AYES:	Abe-Koga, Barrett, Canepa, Cutter, Gioia, Groom, Haggerty, Hudson, Jue, Kaplan, Kim, Kniss, Miley, Mitchoff, Rice, Ronen, Ross, Sinks, Wagenknecht, and Spering.
NOES:	None.
ABSTAIN:	None.
ABSENT:	Chavez, Sanchez, Sheehy, and Zane.

PUBLIC COMMENTS ON NON-AGENDA MATTERS

13. Public Comment on Non-Agenda Items, Pursuant to Government Code Section 54954.3

Public comments were given by Richard Gray, 350 Bay Area; Tony Fisher, Coalition for Clean Air; Greg Karras, CBE; Shana Lazarow, CBE; Angie Tam, CBE; Esther Goolsby, CBE.

BOARD MEMBERS' COMMENTS

14. Board Members' Comments

Director Kaplan announced that on November 13, 2017, the Alameda County Transportation Commission's Planning, Policy and Legislation Committee recommended approval of the Goods Movement Emissions Reduction Pilot Program, which would advance programs and projects that have recently been discussed at Mobile Source Committee meetings. These include ocean-going vessel emission control technologies, locomotives, cargo handling equipment, and expanded

deployment of zero and near zero emission vehicles with a focus on trucks that operate in Alameda County.

OTHER BUSINESS

15. **Report of the Executive Officer/Air Pollution Control Officer**

Mr. Broadbent introduced Jaime Williams, Director of Engineering, who gave an update regarding the District's involvement with the new crematorium in East Oakland. Mr. Williams confirmed that a HRA was conducted on the crematorium using old District HRA guidelines, per District Rule 2-5: Permits - New Source Review of TAC. (The District is required to use the guidelines that were in effect when the application was deemed complete, which was in 2011.) Mr. Williams also said that the facility is being re-evaluated using the District's new HRA guidelines, and that if the facility's risk is found to be above the 10/M risk management threshold or chronic hazard indices, the facility will be subject to evaluation under District Rule 11-18.

Mr. Broadbent presented Winter $PM_{2.5}$ Seasons and Summary of Ozone Seasons. The Board and staff discussed how the Bay Area's $PM_{2.5}$ attainment status is being affected by the recent fires in the North Bay.

16. **Chairperson's Report**

Chair Kniss announced that the Board will meet twice in December (6 and 20), and that the Board's Annual Retreat date is scheduled for January 17, 2018 in San Ramon.

17. **Time and Place of Next Meeting**

Wednesday, December 6, 2017, at 375 Beale Street, San Francisco, CA 94105 at 9:45 a.m.

18. **Adjournment**

The meeting adjourned at 1:42 p.m.

Marcy Hiratzka
Clerk of the Boards

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Liz Kniss and Members
of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: November 22, 2017

Re: Board Communications Received from November 15, 2017 through December 5, 2017

RECOMMENDED ACTION

None; receive and file.

DISCUSSION

Copies of communications directed to the Board of Directors received by the Air District from November 15, 2017, through December 5, 2017, if any, will be at each Board Member's place at the November 15, Board meeting.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Aloha de Guzman
Reviewed by: Maricela Martinez

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Liz Kniss and Members
of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: November 20, 2017

Re: Consider Authorization for a Contract Extension to Technical and Business Systems and Execution of a Purchase Order in Excess of $100,000 Pursuant to Administrative Code Division II Fiscal Policies and Procedures, Section 4.3 Contract Limitations, for Continued Operation of the BioWatch Monitoring Network

RECOMMENDED ACTION

The Board of Directors will consider authorizing the Executive Officer/APCO to extend the current contract for two years and issue a Purchase Order for FYE 2018 of $583,614 for Technical and Business (T&B) Systems to continue operation and maintenance of the BioWatch monitoring network through June 30, 2018 as outlined in a grant from the Department of Homeland Security for the continued operation.

DISCUSSION

The BioWatch program began in February of 2003 with eight locations in the San Francisco area. In July of 2003, the network expanded to include 6 additional sites in the San Jose area. The operational demands of this network necessitated the use of a contractor and a Request for Quotation (RFQ) was sent to five qualified contractors. Staff received proposals from three contactors who responded to the RFQ. After a thorough evaluation, the contract was awarded to T&B Systems (Board of Directors Memo, Agenda Item 5E, dated August 26, 2003). In 2006, the network was again expanded to a total of 32 sites located throughout the Bay Area and additional grant funding was incorporated into the budget (Budget and Finance Committee, May 15, 2006; Agenda Item 5; Board of Directors, May 24, 2006, Agenda Item 9). The latest contract with T&B Systems was approved by the Board of Directors for a year period beginning July 1, 2014 (Board of Directors Meeting, September 3, 2014, Agenda Item 9).

A Request for Qualifications (RFQ) based on the current scope of work for operation and maintenance of the BioWatch Network was released following standard Air District guidelines and requirements. Only one entity, T&B Systems, responded to the request. As a result, staff recommends continuing contracting with T&B Systems for operating and maintaining the BioWatch Network based on their response to the RFQ and their performance over past years.

The contract amendment under consideration would extend the current period through June 30, 2019. The Purchase Order under consideration will cover operation of the network through the end of the first year of the contract. A Purchase Order for the second year will be brought to the Board of Directors in 2019 and will cover the entire 2019 fiscal year which is currently estimated at $1,190,358. Neither Purchase Order will exceed the amount of the grant award from the Department of Homeland Security.

BUDGET CONSIDERATION/FINANCIAL IMPACT

Funds for this Purchase Order are from a Homeland Security Grant that covers operation of the existing network and the associated Air District costs of administering the program. There will be no financial impact to the Air District's general revenue resources.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Eric Stevenson
Reviewed by: Jean Roggenkamp

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Liz Kniss and Members
of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: November 16, 2017

Re: Report of the Climate Protection Committee Meeting of November 16, 2017

RECOMMENDED ACTION

The Climate Protection Committee (Committee) received only informational items and has no recommendations of approval by the Board of Directors (Board).

BACKGROUND

The Committee met on Thursday, November 16, 2017, and received the following reports:

A) AB 398 and the Air District 2017 Clean Air Plan; and

B) California Air Resources Board Draft 2017 Climate Change Scoping Plan Update.

Chairperson Teresa Barrett will provide an oral report of the Committee meeting.

BUDGET CONSIDERATION/FINANCIAL IMPACT

A) None; and

B) None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Marcy Hiratzka
Reviewed by: Maricela Martinez

Attachment 6A: 11/16/17 – Climate Protection Committee Meeting Agenda #4
Attachment 6B: 11/16/17 – Climate Protection Committee Meeting Agenda #5

AGENDA: 4

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Teresa Barrett and Members of the Climate Protection Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: November 6, 2017

Re: AB 398 and the Air District 2017 Clean Air Plan

RECOMMENDED ACTION

None; receive and file.

BACKGROUND

On July 17, 2017, the California Legislature passed AB 398, which extends the State's Cap and Trade program to December 31, 2030. The bill also prohibits local air districts from adopting or implementing any emission reduction rules for carbon dioxide (CO_2) from stationary sources that are subject to the Cap and Trade program. The bill transfers this regulatory authority from local air districts to the California Air Resources Board (CARB). In the Bay Area, approximately 95 percent of CO_2 emissions from stationary sources that the Air District regulates are covered by the Cap and Trade program. This regulatory change in authority for the Air District will impact how the agency implements the 2017 Clean Air Plan.

DISCUSSION

Passage of AB 398 limits the Air District's ability to regulate CO_2 emissions from many stationary sources, including refineries. However, the Air District can move forward with regulating stationary sources for non-CO_2 greenhouse gas emissions such as methane. The Air District can also continue to implement non-regulatory activities aimed at reducing all greenhouse gas emissions, including CO_2, through its grant and incentive programs, work with local governments, community engagement, air monitoring and communications initiatives. Additionally, reductions of CO_2 emissions can still be realized as co-benefits from the implementation of rules and regulations designed to control other air pollutants.

Staff will present on how passage of AB 398 may impact the implementation of the 2017 Clean Air Plan. The presentation will discuss rule-making, funding programs, policy initiatives, the Air District's technical programs, and other work the agency is pursuing to make progress toward the goal of reducing greenhouse gas emissions 80 percent below 1990 levels by 2050.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Abby Young
Reviewed by: Henry Hilken

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Teresa Barrett and Members of the Climate Protection Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: November 7, 2017

Re: California Air Resources Board (CARB) Draft 2017 Climate Change Scoping Plan Update

RECOMMENDED ACTION

None; receive and file.

BACKGROUND

In 2006, the State Legislature passed AB 32, the Global Warming Solution Act, which established a statewide greenhouse gas (GHG) emission reduction target of reducing emissions back to 1990 levels by 2020. The law also required the California Air Resources Board (CARB) to develop a Scoping Plan that describes the approach California will take to achieve this GHG reduction goal. The Scoping Plan must be updated every five years. The first update to the Scoping Plan was approved by the CARB Board in May 2014. In 2016, the Legislature passed SB 32, which codifies a 2030 GHG emissions reduction target of 40 percent below 1990 levels. The Legislature also passed companion legislation AB 197, which provides additional direction for developing the Scoping Plan. More recently, AB 398 also affected the Scoping Plan Update by reauthorizing the State's Cap and Trade Program. A second update to the Scoping Plan is currently underway and CARB has recently released a draft of the *2017 Climate Change Scoping Plan*.

DISCUSSION

Air District staff has followed the Scoping Plan development process closely and provided comments on early versions of the document. Staff also considered Scoping Plan policies and programs for inclusion in the 2017 Clean Air Plan. The CARB governing board is expected to take action on the Scoping Plan Update at its upcoming Board meeting on December 14-15, 2017. Staff will present an overview of the current draft of the Scoping Plan, including the major priorities and policy initiatives, the status of the Cap and Trade program, and how the Scoping Plan relates to the work of local air districts and local governments.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Abby Young
Reviewed by: Henry Hilken

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Liz Kniss and Members
of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: November 27, 2017

Re: Public Hearing to Consider Adoption of Proposed Technical and Administrative Amendments to the Air District's New Source Review and Title V Permitting Regulations (Regulation 2, Rules 1,2,4 and 6) and associated California Environmental Quality Act (CEQA) Negative Declaration

RECOMMENDED ACTION

The Board of Directors will consider adopting proposed technical and administrative amendments to the Air District's New Source Review and Title V permitting regulations (Regulation 2, Rules 1, 2, 4 and 6) and CEQA Negative Declaration. These technical and administrative amendments are necessary in order for the U.S. Environmental Protection Agency (EPA) to fully approve the Air District's programs as consistent with the federal Clean Air Act; without a fully-approved New Source Review program, the Bay Area could face sanctions imposed by EPA.

BACKGROUND

The Air District's New Source Review and Title V permitting programs apply to a broad range of facilities throughout the Bay Area. The New Source Review program is a pre-construction permitting requirement that requires permit applicants to demonstrate that new sources of air emissions, and modifications to existing sources that will increase emissions, will meet all applicable air pollution control requirements, including using state-of-the-art pollution control equipment. The Title V program is an operating permit requirement applicable to major emissions sources that consolidates all of the various regulatory requirements applicable to a facility into a single, comprehensive permitting document in order to improve transparency, enforceability, and facility compliance. These programs are set forth in four Rules in Regulation 2 (Permits) – Rule 1 (General Requirements), Rule 2 (New Source Review), Rule 4 (Emissions Banking), and Rule 6 (Major Facility Review).

EPA recently approved the Air District's most recent updates to its New Source Review regulations, but with certain limited exceptions. The Air District now needs to make technical and administrative revisions to address these deficiencies identified by EPA in order to allow EPA to fully approve the regulations as consistent with the Clean Air Act. If the Air District does not do so, the Bay Area could face sanctions under the Act for failure to have a fully-approved program.

In addition, Air District Staff have gained further experience in working with the most recent updates since they were adopted, and have identified certain areas where additional revisions and clarifications are needed to ensure that the regulations function as effectively as possible. Finally, in 2014 the U.S. Supreme Court issued a ruling in *Utility Air Regulatory Group v. EPA* (134 S.Ct. 2427 (2014)) that interpreted several relevant provisions of the federal Clean Air Act regarding the Act's New Source Review and Title V program requirements. The Air District needs to make certain revisions to align the District's regulations with the Supreme Court's ruling.

Pursuant to the California Environmental Quality Act (CEQA, Public Resources Code §§ 21000 *et seq*.), an initial study for the proposed amendments has been conducted, concluding that the proposed amendments will not have any significant adverse environmental impacts. Based on this initial study and other documentation in the administrative record, staff recommend adoption of a Negative Declaration for the proposed amendments pursuant to CEQA.

RULE DEVELOPMENT PROCESS

During development of the proposed amendments, Air District staff posted a draft version of the amendments on the District's website on May 11, 2017, and presented the proposed revisions at a series of three Public Workshops on June 12 and 13, 2017, in San Francisco, Martinez, and Fremont. The Air District accepted comments on the draft rule that led to some revisions in the language of the proposed amendments.

BUDGET CONSIDERATION/FINANCIAL IMPACT

In accordance with the Air District's Cost Recovery Policy, the District assesses fees for New Source Review and Title V permits. The proposed amendments are relatively minor in nature and will not add any substantial workload to the Air District's current permitting activities. The Air District does not anticipate a need to make any adjustments to its permit fee schedule at this time.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Alexander Crockett
Reviewed by: Greg Nudd

Attachment A: Proposed Amendments to Regulation 2 (Permits)
Attachment A-1: Proposed Amendments to Reg. 2, Rule 1 (General Requirements)
Attachment A-2: Proposed Amendments to Reg. 2, Rule 2 (New Source Review)
Attachment A-3: Proposed Amendments to Reg. 2, Rule 4 (Emissions Banking)
Attachment A-4: Proposed Amendments to Reg. 2, Rule 6 (Major Facility Review)
Attachment B: Staff Report
Attachment C: Summary of Public Comments and Responses
Attachment D: CEQA Initial Study and Proposed Negative Declaration
Attachment E: Socioeconomic Impact Report
Attachment F: SO_2 Precursor Demonstration Report
Attachment G: Board Resolution to Adopt Technical and Administrative Amendments to Regulation 2, Rule 1,2,4,6

AGENDA: 7 – ATTACHMENT A

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

PROPOSED AMENDMENTS TO REGULATION 2, RULES 1,2,4, and 6

November 27, 2017

REGULATION 2
PERMITS
RULE 1
GENERAL REQUIREMENTS

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REGULATION 2
PERMITS
RULE 1
GENERAL REQUIREMENTS

(Adopted January 1, 1980)

2-1-100 GENERAL

2-1-101 Description: The purpose of Regulation 2 is to provide an orderly procedure for the review of new sources of air pollution, and of the modification and operation of existing sources, and of associated air pollution control devices, through the issuance of authorities to construct and permits to operate. The applicability of Regulation 2, Rule 1 is illustrated by Figure 2-1-101, Permit/Exemption Flow Chart. An applicant may choose to obtain a permit to operate for a source that is exempt from permit requirements. In that case, the affected source is deemed to be subject to the requirements of Section 2-1-302 until such time as an application for return to exempt status is approved.

(Amended 7/17/91; 6/7/95; 5/17/00; 12/21/04)

2-1-102 Applicability to Other Rules in Regulation 2: The provisions of this Rule, including the definitions, shall apply to the other Rules of this Regulation, where applicable, unless superseded by specific provisions in those other Rules.

(Amended November 3, 1993)

2-1-103 Exemption, Source not Subject to any District Rule: Any source that is not already exempt from the requirements of Section 2-1-301 and 302 as set forth in Sections 2-1-105 to 2-1-128, is exempt from Section 2-1-301 and 302 if the source meets all of the following criteria:

103.1 The source is not in a source category subject to any of the provisions of Regulation 6[(1)], Regulation 8[(2)] excluding Rules 1 through 4, or Regulations 9 through 12; and

103.2 The source is not subject to any of the provisions of Sections 2-1-316 through 319; and

103.3 Actual emissions of precursor organic compounds (POC), non-precursor organic compounds (NPOC), nitrogen oxides (NOx), sulfur dioxide (SO_2), $PM_{2.5}$, PM_{10} and carbon monoxide (CO) from the source are each (i) less than 10 pounds per highest day; or (ii) if greater than 10 pounds per highest day, total emissions are less than 150 pounds per year, per pollutant; and

103.4 The source is not an ozone generator (a piece of equipment designed to generate ozone) emitting 1 lb/day or more of ozone.

Note 1: Typically, any source may be subject to Regulation 6, Particulate Matter and Visible Emissions. For the purposes of this section, Regulation 6 applicability shall be limited to the following types of sources that emit $PM_{2.5}$ and PM_{10}: combustion source; material handling/processing; sand, gravel or rock processing; cement, concrete and asphaltic concrete production; tub grinder; or similar $PM_{2.5}$ and PM_{10}-emitting sources, as deemed by the APCO.

Note 2: If an exemption in a Regulation 8 Rule indicates that the source is subject to Regulation 8, Rules 1 through 4, then the source must comply with all applicable provisions of Regulation 8, Rules 1 through 4, to qualify for this exemption.

(Adopted 6/7/95; Amended 5/17/00; 12/21/04)

2-1-104 Deleted October 7, 1998

2-1-105 Exemption, Registered Statewide Portable Equipment: Equipment that complies with all applicable requirements of and is registered under the Statewide Portable Equipment Registration Program (California Code of Regulations Title 13, Division 3, Chapter 3, Article 5) is exempt from the requirements of Sections 2-1-301 and 302. If the equipment ceases to qualify for this exemption for any reason (for example, if it remains at any fixed location for more than twelve months or otherwise ceases to be portable as defined by the Program), the equipment shall be subject to the requirements of Regulation 2 as if it were a new source.

(Adopted 6/7/95; Amended 10/7/98; 5/17/00)

2-1-106 Limited Exemption, Accelerated Permitting Program: Unless subject to any of the provisions of Sections 2-1-316 through 319, any new source or modification or alteration of an existing source is exempt from the Authority to Construct requirements of Section 2-1-301 if it has received a temporary Permit to Operate under the Accelerated Permitting Program set forth in Section 2-1-302.2.

(Adopted 6/7/95; Amended 10/7/98; 5/17/00; 6/15/05; 12/19/12)

2-1-109 Deleted June 7, 1995

2-1-110 Deleted June 7, 1995

2-1-111 Deleted June 7, 1995

2-1-112 Deleted June 7, 1995

2-1-113 Exemption, Sources and Operations:

113.1 The following sources and operations are exempt from the requirements of Sections 2-1-301 and 302, in accordance with the California Health and Safety Code:

1.1 Single and multiple family dwellings used solely for residential purposes.

1.2 Agricultural sources (as defined in Section 2-1-239) with actual emissions of each regulated air pollutant, excluding fugitive dust and greenhouse gases, less than 50 tons per year~~, except for large confined animal facilities subject to Regulation 2, Rule 10~~. Agricultural sources engaged in composing and other similar biomass processing that primarily process green materials or animal waste products derived from agricultural operations shall not become ineligible for this exemption for processing material from non-agricultural operations as long as the facility processes less than 500 tons per year of such material from non-agricultural operations.

1.3 Any vehicle. Equipment temporarily or permanently attached to a vehicle is not considered to be a part of that vehicle unless the combination is a vehicle as defined in the Vehicle Code. Specialty vehicles may include temporarily or permanently attached equipment including, but are not limited to, the following: oil well production service unit; special construction equipment; and special mobile equipment.

1.4 Tank vehicles with vapor recovery systems subject to state certification, in accordance with the Health and Safety Code.

113.2 The following sources and operations are exempt from the requirements of Sections 2-1-301 and 302:

2.1 Road construction, widening and rerouting.

2.2 Restaurants, cafeterias and other retail establishments for the purpose of preparing food for human consumption.

2.3 Structural changes which do not change the quality, nature or quantity of air contaminant emissions.

2.4 Any abatement device which is used solely to abate equipment that does not require an Authority to Construct or Permit to Operate.

2.5 Architectural and industrial maintenance coating operations that are exclusively subject to Regulation 8, Rules 3 or 48, because coatings are applied to stationary structures, their appurtenances, to mobile homes, to pavements, or to curbs. This does not apply to coatings applied by the manufacturer prior to installation, nor to the coating of components removed from such structures and equipment.

2.6 Portable abatement equipment exclusively used to comply with the tank degassing or vacuum truck control requirements of Regulation 8, Rules 5, 40 or 53.

2.7 Equipment that transports, holds or stores California Public Utilities Commission regulated natural gas, excluding drivers.

2.8 Deleted May 17, 2000

2.9 Deleted May 17, 2000

2.10 Deleted May 17, 2000

2.11 Teaching laboratories used exclusively for classroom experimentation and/or demonstration.

2.12 Laboratories located in a building where the total laboratory floor space within the building is less than 25,000 square feet, or the total number of fume hoods within the building is less than 50, provided that Responsible Laboratory Management Practices, as defined in Section 2-1-224, are used. Buildings connected by passageways and/or corridors shall be considered as separate buildings, provided that structural integrity could be maintained in the absence of the passageways and/or corridors and the buildings have their own separate and independently operating HVAC and fire suppression systems. For the purposes of this subsection, teaching laboratories that are exempt per Section 2-1-113.2.11 are not included in the floor space or fume hood totals. In addition, laboratory units for which the owner or operator of the source can demonstrate that toxic air contaminant emissions would not occur, except under accidental or upset conditions, are not included in the floor space or fume hood totals.

2.13 Maintenance operations on natural gas pipelines and associated equipment, provided that emissions from such operations consist solely of residual natural gas that is vented after the equipment is isolated or shut down.

2.14 [Deleted 12/19/2012]

2.15 Asbestos and asbestos containing material renovation or removal conducted in compliance with Regulation 11, Rule 2 and Regulation 3.

2.16 Closed landfills that have less than 1,000,000 tons of decomposable solid waste in place and that do not have an operating landfill gas collection system.

2.17 Closed landfills that have not accepted waste for at least 30 years and that never had a landfill gas collection system.

2.18 Construction of a building or structure that is not itself a source requiring a permit.

2.19 Vacuum trucks subject to Regulation 8, Rule 53 and processing regulated material as defined in that rule.

(Adopted 10/19/83; Amended 7/17/91; 6/7/95; 5/17/00; 11/15/00; 5/2/01; 7/19/06; 4/18/12)

2-1-114 Exemption, Combustion Equipment: The following equipment is exempt from the requirements of Sections 2-1-301 and 302, only if the source does not emit pollutants other than combustion products, and those combustion products are not caused by the combustion of a pollutant generated from another source, and the source does not require permitting pursuant to Section 2-1-319.

114.1 Boilers, Heaters, Steam Generators, Duct Burners, and Similar Combustion Equipment:

1.1 Any of the above equipment with less than 1 million BTU per hour rated heat input.

1.2 Any of the above equipment with less than 10 million BTU per hour rated heat input if fired exclusively with natural gas (including compressed natural gas), liquefied petroleum gas (e.g. propane, butane, isobutane, propylene, butylenes, and their mixtures), or any combination thereof.

114.2 Internal Combustion Engines and Gas Turbines:

2.1 Internal combustion (IC) engines and gas turbines with a maximum output rating less than or equal to 50 bhp.

2.2 Internal combustion (IC) engines and gas turbines used solely for instructional purposes at research, teaching, or educational facilities.

2.3 Portable internal combustion engines which are at a location for less than 72 consecutive hours.

2.4 Any engine mounted on, within, or incorporated into any vehicle, train, ship, boat, or barge used to provide propulsion for the vehicle, train, ship, boat, or barge.

2.5 Any engine mounted on, within, or incorporated into any vehicle, train, ship, boat, or barge used to provide propulsion for the vehicle, train, ship, boat, or barge and which is also used to supply mechanical or electrical power to ancillary equipment (e.g., crane, drill, winch, etc.) which is affixed to or is a part of the vehicle, train, ship, boat, or barge.

(Adopted 10/19/83; Amended 7/17/91; 6/7/95; 5/17/00; 8/1/01)

2-1-115 Exemption, Particulate Sources at Quarries, Mineral Processing and Biomass Facilities: The following potential $PM_{2.5}$ and PM_{10} sources are exempt from the requirements of sections 2-1-301 and 302, provided that the source does not require permitting pursuant to Section 2-1-319.

115.1 Sources located at quarrying; mineral or ore handling or processing; concrete production; asphaltic concrete production; marine bulk transfer stations; concrete or asphaltic concrete recycling; vehicle shredding; glass manufacturing; handling or processing of cement, coke, lime, flyash, fertilizer, or catalyst; or other similar facility which meets one of the following:

1.1 Mixer and other ancillary sources at concrete or aggregate product production facilities with a maximum rated production capacity less than 15 cubic yards (yd^3) per hour;
1.2 Other source at a facility with a maximum throughput less than 5000 tons per year;
1.3 Operating, loading and unloading a crusher or grinder which processes exclusively material with a moisture content greater than or equal to 20 percent by weight;
1.4 Operating, loading and unloading the following sources which process exclusively material with a moisture content greater than or equal to 5 percent by weight:
1.4.1 Screen or other size classification;
1.4.2 Conveyor, screw, auger, stacker or bucket elevator;
1.4.3 Grizzly, or other material loading or unloading;
1.4.4 Storage silos;
1.4.5 Storage or weigh hopper/bin system.
1.5 Haul or access roads;
1.6 Drilling or blasting.

115.2 Sources located at biomass recycling, composting, landfill, POTW, or related facilities, including, but not limited to, the following:
2.1 Tub grinder powered by a motor with a maximum output rating less than 10 horsepower;
2.2 Hogger, shredder or similar source powered by a motor with a maximum output rating less than 25 horsepower;
2.3 Other biomass processing/handling sources at a facility with a total throughput less than 500 tons per year.

(Amended 6/7/95; 5/17/00)

2-1-116 Exemption, Furnaces, Ovens and Kilns: The following equipment is exempt from the requirements of Sections 2-1-301 and 302, provided that the source does not require permitting pursuant to Section 2-1-319.

116.1 Porcelain enameling furnaces, porcelain enameling drying ovens, vitreous enameling furnaces or vitreous enameling drying ovens.
116.2 Crucible furnaces, pot furnaces, induction furnaces, cupolas, electric arc furnaces, reverbatories, or blast furnaces with a capacity of 1000 lbs or less each.
116.3 Crucible furnaces, pot furnaces, or induction furnaces for sweating or distilling that process 100 tons per year of all metals or less.
116.4 Drying or heat-treating ovens with less than 10 million BTU per hour capacity provided that a) the oven does not emit pollutants other than combustion products and b) the oven is fired exclusively with natural gas (including compressed natural gas), liquefied petroleum gas (e.g. propane, butane, isobutane, propylene, butylenes, and their mixtures), or any combination thereof.
116.5 Ovens used exclusively for the curing of plastics which are concurrently being vacuum held to a mold, or for the softening and annealing of plastics.
116.6 Ovens used exclusively for the curing of vinyl plastisols by the closed mold curing process.
116.7 Ovens used exclusively for curing potting materials or castings made with epoxy resins.

116.8 Kilns used for firing ceramic ware, heated exclusively by natural gas, liquefied petroleum gas, electricity or any combination thereof.

116.9 Parts cleaning, bake-off, and similar ovens that meet both of the following:

9.1 Oven is equipped with a secondary combustion chamber or abated by a fume incinerator; and

9.2 Internal oven volume is 1 cubic yard or less.

116.10 Electric ovens used exclusively for curing or heat-treating where no significant off-gassing or evaporation of any air contaminants occurs.

(Adopted 10/19/83; Amended 7/17/91; 6/7/95; 5/17/00)

2-1-117 Exemption, Food and Agricultural Equipment: The following equipment is exempt from the requirements of Sections 2-1-301 and 302, provided that the source does not require permitting pursuant to Section 2-1-319.

117.1 Smokehouses or barbecue units in which the maximum horizontal inside cross sectional area does not exceed 20 square feet.

117.2 Equipment at facilities other than restaurants, cafeterias or other retail operations, which is used to dry, cook, fry, bake, or grill less than 1000 tons per year of food products.

117.3 Any oven with a total production of yeast leavened bakery products of less than 10,000 pounds per operating day, averaged over any period of seven consecutive days, and which is heated either electrically or exclusively by natural gas firing with a maximum capacity of less than 10 million BTU per hour.

117.4 Equipment used exclusively to grind, blend, package, or store tea, cocoa, spices, or coffee.

117.5 Equipment used to dry, mill, grind, blend, or package less than 1000 tons per year of dry food products such as seeds, grains, corn, meal, flour, sugar, and starch.

117.6 Equipment used to convey, transfer, clean, or separate less than 1000 tons per year of dry food products or waste from food production operations.

117.7 Storage equipment or facilities containing dry food products; which are not vented to the outside atmosphere, or which handle less than 1000 tons per year.

117. 8 Coffee, cocoa and nut roasters with a roasting capacity of less than 15 pounds of beans or nuts per hour; and any stoners or coolers operated in conjunction with these roasters.

117.9 Containers, reservoirs, tanks, or loading equipment used exclusively for the storage or loading of beer, wine or other alcoholic beverages.

117.10 Fermentation tanks for beer or wine. Fermentation tanks used for the commercial production of yeast for sale are not exempt.

117.11 Brewing operations at facilities producing less than 3 million gallons per year of beer.

117.12 Fruit sulfuring operations at facilities producing less than 10 tons per year of sulfured fruits and vegetables.

(Adopted 10/19/83; Amended 4/16/86; 7/1791; 6/7/95; 5/17/00)

2-1-118 Exemption, Surface Preparation and Cleaning Equipment: The following equipment is exempt from the requirements of Sections 2-1-301 and 302, provided that the source does not require permitting pursuant to Section 2-1-319.

118.1 Permanent abrasive blasting source, as defined by Regulation 12, Rule 4, that has a confined volume less than 100 cubic feet (ft^3) and is abated by a particulate filter.

118.2 Blast cleaning equipment using a suspension of abrasive in water.

118.3 Portable abrasive blasting equipment used on a temporary basis within the District.

118.4 Equipment, including solvent cold cleaners using an unheated solvent mixture for surface preparation, cleaning, wipe cleaning, fluxing or stripping by use of solutions with a VOC content less than or equal to 50 grams per liter (0.42 lb/gal).

118.5 Equipment using a heated solvent mixture for steam cleaning, surface preparation, fluxing, stripping, wipe cleaning, washing or drying products, provided that a) only solutions containing less than 2.5 percent VOC (wt) are used; and b) any combustion sources used in the process are exempt under Section 2-1-114.

118.6 Equipment or operations which use unheated solvent and which contain less than 1 gallon of solvent or have a liquid surface area of less than 1 ft^2. This exemption does not apply to solvent stations at semiconductor manufacturing operation fabrication areas or aerospace stripping operations.

118.7 Deleted December 21, 2004

118.8 Batch solvent recycling equipment where all of the following apply:

8.1 Recovered solvent is used primarily on site (more than 50% by volume); and

8.2 Maximum heat input (HHV) is less than 1 million BTU per hour; and

8.3 Batch capacity is less than 150 gallons.

118.9 Wipe cleaning at a facility that meets one of the following:

9.1 net cleanup solvent usage less than 20 gallons per year from all wipe cleaning operations; or

9.2 emission to the atmosphere of less than 150 pounds per year of uncontrolled VOC from all wipe cleaning operations.

At a facility with total wipe cleaning emissions greater than 150 lb/yr, wipe cleaning operations may be grouped per Section 2-1-401.4.

118.10 Any solvent cleaning or surface preparation source which employs only non-refillable hand held aerosol cans.

118.11 Spray gun cleaning performed in compliance with Regulation 8, provided the cleaning is associated with a source, such as a spray booth, subject to the requirements of Section 2-1-301 and 302.

(Adopted 10/19/83; Amended 4/16/86; 8/2/89; 7/17/91; 6/7/95; 5/17/00; 12/21/04)

2-1-119 Exemption, Surface Coating and Printing Equipment: The following equipment and operations are exempt from the requirements of Sections 2-1-301 and 302, provided that the source does not require permitting pursuant to Section 2-1-319.

119.1 Any powder coating operation, or radiation cured coating operation where ultraviolet or electron beam energy is used to initiate a reaction to form a polymer network.

119.2 Any coating, adhesive, dipping, laminating, screening, masking, electrodeposition, resist application, or similar source or operation at any facility that is not operated or conducted as part of a graphic arts operation, which:

2.1 Consumes a total of less than 30 gallons of coating, adhesive, laminate or resist per year on a facility wide basis, or emits less than 150 pounds per year of uncontrolled VOC on a facility wide basis, resulting from the application of these materials; or

2.2 Uses exclusively materials that contain less than one percent VOC (wt).

At a facility with emissions from these sources or operations of greater than 150 lb/yr, these sources or operations may be grouped per Section 2-1-401.3.

119.3 Any coating source which employs only non-refillable hand held aerosol cans.

119.4 An oven associated with an exempt coating source, provided that the oven is electrically heated, or the oven is fired exclusively with natural gas, liquefied petroleum gas (e.g. propane, butane, isobutane, propylene, butylenes, and their mixtures) and the maximum firing rate is less than 10 million BTU per hour.

119.5 Any graphic arts operation that emits less than 400 pounds of uncontrolled VOC emissions per month on a facility-wide basis.

(Adopted 10/19/83; Amended 4/16/86; 7/17/91; 6/7/95; 5/17/00; 12/21/04; 11/19/08)

2-1-120 Exemption, Dry Cleaning Equipment: Any dry cleaning facility which uses (gross consumption) less than 200 gallons of petroleum solvent or any other non-halogenated solvent in any single year is exempt from the requirements of Sections 2-1-301 and 302, provided that the source does not require permitting pursuant to Section 2-1-319; the facility is in compliance with the registration requirement in Regulation 8, Rule 17, Section 404; and the equipment does not use solvent that contains perchloroethylene or more than 1% by weight of any other halogenated compound.

(Adopted 10/19/83; Amended 7/17/91; 6/7/95; 5/17/00; 3/4/09)

2-1-121 Exemption, Material Working and Handling Equipment: The following equipment is exempt from the requirements of Sections 2-1-301 and 302, provided that the source does not require permitting pursuant to Section 2-1-319.

121.1 Equipment used for buffing, carving, cutting, drilling, grinding, machining, planing, routing, sanding, sawing, shredding, stamping or turning of wood, ceramic artwork, ceramic precision parts, leather, metals, plastics, rubber, fiberboard, masonry, glass, silicon, semiconductor wafers, carbon or graphite, provided that organic emissions from the use of coolant, lubricant, or cutting oil are 5 ton/yr or less.

121.2 Equipment used for pressing or storing sawdust, wood chips or wood shavings.

121.3 Equipment used exclusively to mill or grind coatings and molding compounds in a paste form provided the solution contains less than one percent VOC (wt).

121.4 Tumblers used for the cleaning or deburring of metal products without abrasive blasting.

121.5 Batch mixers with a rated working capacity of 55 gallons or less.

121.6 Mixing equipment provided no material in powder form is added and mixture contains less than one percent VOC (wt).

121.7 Equipment used exclusively for the mixing and blending of materials at ambient temperature to make water based adhesives.

121.8 Equipment used exclusively for the mixing and packaging of lubricants or greases.

121.9 Presses used exclusively for extruding metals, minerals, plastics or wood.

121.10 Presses used for the curing of rubber products and plastic products. The use of mold release products or lubricants is not exempt unless the VOC content of these materials is less than or equal to 1 percent, by weight, or unless the total facility-wide uncontrolled VOC emissions from the use of these materials are less than 150 lb/yr.

121.11 Platen presses used for laminating.

121.12 Roll mills or calendars for rubber or plastics.

121.13 Equipment used exclusively for forging, pressing, rolling, stamping or drawing metals or for heating metals immediately prior to forging, pressing, rolling, stamping or drawing, provided that: (1) maximum fuel use rate is less than 10 million BTU/hr; (2) no lubricant with an initial boiling point less than 400^{o}F is used; and (3) organic emissions are 5 ton/yr or less.

121.14 Atmosphere generators used in connection with metal heat treating processes.

121.15 Equipment used exclusively for the sintering of glass or metals.

121.16 Equipment used exclusively for the melting or applying of wax containing less than one percent VOC (wt).

121.17 Equipment used exclusively for conveying and storing plastic pellets.

121.18 Solid waste transfer stations that receive or load out a total of all material less than 50 tons/day.

121.19 Inactive solid waste disposal sites which do not have an operating landfill gas collection system.

(Adopted 10/19/83; Amended 7/17/91; 6/7/95; 5/17/00)

2-1-122 Exemption, Casting and Molding Equipment: The following equipment is exempt from the requirements of Sections 2-1-301 and 302, provided that the source does not require permitting pursuant to Section 2-1-319.

122.1 Molds used for the casting of metals.

122.2 Foundry sand mold forming equipment to which no heat is applied, except processes utilizing organic binders yielding in excess of 0.25% free phenol by weight of sand.

122.3 Shell core and shell-mold manufacturing machines.

122.4 Equipment used for extrusion, compression molding and injection molding of plastics. The use of mold release products or lubricants is not exempt unless the VOC content of these materials is less than or equal to 1 percent, by weight, or unless the total facility-wide uncontrolled VOC emissions from the use of these materials are less than 150 lb/yr.

122.5 Die casting machines.

(Adopted 10/19/83; Amended 7/17/91; 6/7/95; 5/17/00)

2-1-123 Exemption, Liquid Storage and Loading Equipment: The following equipment is exempt from the requirements of Sections 2-1-301 and 302, provided that the source does not require permitting pursuant to Section 2-1-319.

123.1 Storage tanks and storage vessels having a capacity of less than 260 gallons.

123.2 Tanks, vessels and pumping equipment used exclusively for the storage or dispensing of any aqueous solution which contains less than 1 percent (wt)

organic compounds. Tanks and vessels storing the following materials are not exempt.

2.1 Sulfuric acid with an acid strength of more than 99.0% by weight.

2.2 Phosphoric acid with an acid strength of more than 99.0% by weight.

2.3 Nitric acid with an acid strength of more than 70.0% by weight.

2.4 Hydrochloric acid with an acid strength of more than 30.0% by weight.

2.5 Hydrofluoric acid with an acid strength of more than 30.0% by weight.

2.6 More than one liquid phase, where the top phase contains more than one percent VOC (wt).

123.3 Containers, reservoirs, tanks or loading equipment used exclusively for:

3.1 Storage or loading of liquefied gases.

3.2 Storage or loading of organic liquids or mixtures containing organic liquids; where the initial boiling point of the organics is greater than 302°F and exceeds the actual storage temperature by at least 180°F. This exemption does not apply to the storage or loading of asphalt or asphalt emulsion with a sulfur content equal to or greater than 0.5 wt%.

3.3 The storage or loading of petroleum oils with an ASTM D-93 (PMCC) flash point of 130°F or higher, when stored or loaded at a temperature at least 36°F below the flash point.

3.4 The storage or loading of lubricating oils.

3.5 The storage of fuel oils with a gravity of 40 API or lower and having a capacity of 10,000 gallons or less.

3.6 The storage or loading of liquid soaps, liquid detergents, tallow, or vegetable oils, waxes or wax emulsions.

3.7 The storage of asphalt or asphalt emulsion with a sulfur content of less than 0.5 wt%. This does not include the storage of asphalt cutback with hydrocarbons having an initial boiling point of less than 302°F.

3.8 The storage of wine, beer or other alcoholic beverages.

3.9 The storage of organic salts or solids in an aqueous solution or suspension, provided that no liquid hydrocarbon layer forms on top of the aqueous phase.

3.10 The storage or loading of fuel oils with a gravity of 25 API or lower.

3.11 The storage and/or transfer of an asphalt-water emulsion heated to 150°F or less.

123.4 Tank seal replacement. For any tank subject to Regulation 8, Rule 5, any new seal must comply with the applicable provisions of Regulation 8, Rule 5, and the District must receive written notification of the tank source number and seal type at least three days prior to the installation.

(Adopted 10/19/83; Amended 7/11/84; 7/17/91; 6/7/95; 5/17/00)

2-1-124 Exemption, Semiconductor Manufacturing: Semiconductor fabrication area(s) at a facility which complies with all of the following are exempt from the requirements of Sections 2-1-301 and 302, provided that the source does not require permitting pursuant to Section 2-1-319.

124.1 Net solvent usage is less than 20 gallons of VOC per year on a facility wide basis; or uncontrolled VOC emissions to the atmosphere resulting from the usage of solvent are less than 150 pounds per year of VOC on a facility wide basis, and

124.2 Maskant and/or coating usage is less than 30 gallons per year, on a facility wide basis; or uncontrolled VOC emissions from the application of maskant and coatings are less than 150 pounds per year on a facility wide basis.

(Adopted 10/19/83; Amended 1/9/85; 4/16/86; 7/17/91; 6/7/95; 10/20/99; 5/17/00)

2-1-125 Exemption, Printed Circuit Board Manufacturing Equipment: The following equipment is exempt from the requirements of Sections 2-1-301 and 302, provided that the source does not require permitting pursuant to Section 2-1-319.

125.1 Equipment used exclusively for:

1.1 Plating of printed circuit boards.

1.2 Buffing, polishing, carving, cutting, drilling, machining, routing, sanding, sawing, surface grinding or turning of printed circuit boards.

1.3 Soldering. This section does not exempt fluxing and finger cleaning (see Section 2-1-118.4).

(Adopted 10/19/83; Amended 7/17/91; 6/7/95; 5/17/00)

2-1-126 Exemption, Testing Equipment: The following equipment is exempt from the requirements of Sections 2-1-301 and 302, provided that the source does not require permitting pursuant to Section 2-1-319.

126.1 Equipment used for hydraulic or hydrostatic testing.

126.2 Bench scale laboratory equipment or processes used exclusively for chemical or physical analyses or experimentation, quality assurance and quality control testing, research and development, or similar bench scale equipment, excluding pilot plants.

126.3 Equipment used for inspection of metal products.

(Adopted 10/19/83; Amended 7/17/91; 6/7/95; 5/17/00)

2-1-127 Exemption, Chemical Processing Equipment: The following equipment is exempt from the requirements of Sections 2-1-301 and 302, provided that the source does not require permitting pursuant to Section 2-1-319.

127.1 Equipment used exclusively for the dyeing or stripping (bleaching) of textiles provided that only solutions containing less than one percent VOC (wt) are used.

127.2 Photographic process equipment by which an image is reproduced upon material sensitized to radiant energy.

127.3 Containers, reservoirs, or tanks used exclusively for electrolytic plating with, or electrolytic polishing of, or electrolytic stripping of the following metals: aluminum, brass, bronze, cadmium, copper, iron, nickel, tin, zinc and precious metals.

127.4 Containers, reservoirs, or tanks used exclusively for etching (not chemical milling), except where ammonia or ammonium-based etchants are used.

(Adopted 10/19/83; Amended 7/17/91; 6/7/95; 5/17/00)

2-1-128 Exemption, Miscellaneous Equipment: The following equipment is exempt from the requirements of Sections 2-1-301 and 302, provided that the source does not require permitting pursuant to Section 2-1-319.

128.1 Comfort air conditioning or comfort ventilating systems which are not designed to remove air contaminants generated by or released from specific units of equipment.

128.2 Refrigeration units except those used as, or in conjunction with, air pollution control equipment.

128.3 Vacuum producing devices in laboratory operations which are used exclusively in connection with other equipment which is exempted by this

Rule, and vacuum producing devices which do not remove or convey air contaminants from another source.

128.4 Water cooling towers and water cooling ponds not used for evaporative cooling of process water, or not used for evaporative cooling of water from barometric jets or from barometric condensers.

128.5 Natural draft hoods, natural draft stacks or natural draft ventilators.

128.6 Vacuum cleaning system used exclusively for industrial commercial or residential housekeeping purposes.

128.7 Equipment used to liquefy or separate oxygen, nitrogen or the rare gases from the air.

128.8 Equipment used exclusively to compress or hold dry natural gas, excluding drivers.

128.9 Equipment used exclusively for bonding lining to brake shoes.

128.10 Equipment used exclusively for the manufacture of water emulsions of waxes, greases or oils.

128.11 Brazing, soldering or welding equipment.

128.12 Pharmaceutical manufacturing equipment with annual VOC emissions less than 150 pounds per source. Material working and handling equipment such as mills, grinders, blenders, granulators, tablet presses, capsule fillers, packagers, and conveyors are only exempt if the source also processes less than 100 tons per year of pharmaceutical products.

128.13 Equipment used exclusively to blend or package cosmetics.

128.14 Any wastewater (oil-water) separator, as defined in Regulation 8, Rule 8, which processes less than 200 gallons per day of waste water containing organic liquids.

128.15 Exploratory drilling activities for methane recovery at waste disposal sites, for natural gas or for oil. Production wells for the above operations are not exempt.

128.16 Passive aeration of soil, only if:

16.1 The duration of the passive aeration operation will not exceed three months, and

16.2 The soil is not being used as a cover material at a landfill.

128.17 Ozone generators which produce less than 1 pound per day of ozone.

128.18 Any source or operation which exclusively uses consumer products regulated by the California Air Resources Board (California Code of Regulations Title 17, Article 2, Sections 94507-94517).

128.19 Any source or operation deemed by the APCO to be equivalent to a source or operation which is expressly exempted by Sections 2-1-113 through 128.

128.20 Wastewater pumping stations where no treatment is performed, excluding any drivers.

128.21 Modification, replacement, or addition of components that have only fugitive emissions during routine operation (e.g. valves, flanges, pumps, compressors, relief valves, process drains) at existing permitted equipment at petroleum refineries, chemical plants, bulk terminals or bulk plants, provided that:

21.1 the modification, replacement or addition of the components will not result in any increase in emissions of any source at the facility (other than the fugitive emissions from the components being modified, replaced or added) in such a manner as to result in a modification of

such source as defined in Section 2-1-234 (e.g., through debottlenecking of a source);

21.2 the total allowable fugitive emissions from all additional components installed pursuant to this exemption at a given process unit during any consecutive twelve month period do not exceed 10 lb/day (or, for components that are not associated with a process unit, the total allowable fugitive emissions from all additional components installed at the facility that are not associated with a process unit during any twelve-month period do not exceed 10 lb/day), based on the maximum fugitive emissions rate allowed under District regulations;

21.3 the components installed satisfy the "typical control technology" listed in the BACT/TBACT Workbook;

21.4 the components meet applicable requirements of Regulation 8 rules; and

21.5 fugitive emissions from the components are included when calculating emissions from the equipment on which the components are installed for purposes of applying District regulations to that equipment (e.g., BACT and offsets requirements).

128.22 Fuel cells that use phosphoric acid, molten carbonate, proton exchange membrane, solid oxide or equivalent technologies.

128.23 Structure demolition that does not involve asbestos or asbestos containing materials.

(Adopted 10/19/83; Amended 7/16/86; 7/17/91; 6/7/95; 5/17/00; 11/15/00; 12/21/04)

2-1-129 **Major Facility Review:** Notwithstanding the exemptions listed in this section, every source exempted by this Rule shall be included in any application for a synthetic minor or major facility review permit required by Regulation 2, Rule 6.

(Adopted 12/3/93; Amended 2/1/95; 5/17/00)

2-1-130 **Effect of Explanatory Notes:** The explanatory notes that are included in italics following certain provisions in Regulation 2 are intended to help readers better understand the regulatory context of these provisions. They are not intended to be binding as regulatory requirements. Where such notes are provided, it is the text of the regulatory provision itself, and not the text of the notes, that establishes the binding legal requirements of the provision.

2-1-200 DEFINITIONS

2-1-201 [Deleted December 19, 2012]

2-1-202 **Complete Application:** An application that contains all of the information required under Regulation 2-1-402.

(Amended 7/17/91; 11/20/91; 5/17/00; 12/21/04)

2-1-203 **Fugitive Emissions:** Fugitive emissions are all emissions from unintended openings in process equipment, emissions occurring from miscellaneous activities relating to the operation of a facility, and those emissions which could not reasonably pass through a stack, chimney, vent or other functionally equivalent opening.

(Adopted October 19, 1983)

2-1-204 [Deleted December 19, 2012]

2-1-205 [Deleted December 19, 2012]

2-1-206 [Deleted December 19, 2012]

2-1-207 Organic Compound, Non-Precursor (NPOC): The following are considered non-precursor organic compounds:

methane; ethane; methylene chloride (dichloromethane); 1,1,1-trichloroethane (methyl chloroform); 1,1,2-trichloro-1,2,2-trifluoroethane (CFC–113); trichlorofluoromethane (CFC–11); dichlorodifluoromethane (CFC–12); chlorodifluoromethane (HCFC–22); trifluoromethane (HFC–23); 1,2-dichloro 1,1,2,2-tetrafluoroethane (CFC–114); chloropentafluoroethane (CFC–115); 1,1,1-trifluoro 2,2-dichloroethane (HFC–123); 1,1,1,2-tetrafluoroethane (HFC–134a); 1,1-dichloro 1-fluoroethane (HCFC–141b); 1-chloro 1,1-difluoroethane (HCFC–142b); 2-chloro-1,1,1,2-tetrafluoroethane (HCFC–124); pentafluoroethane (HFC–125); 1,1,2,2-tetrafluoroethane (HFC–134); 1,1,1-trifluoroethane (HFC–143a); 1,1-difluoroethane (HFC–152a); parachlorobenzotrifluoride (PCBTF); cyclic, branched, or linear completely methylated siloxanes; acetone; perchloroethylene (tetrachloroethylene); 3,3-dichloro-1,1,1,2,2-pentafluoropropane (HCFC–225ca); 1,3-dichloro-1,1,2,2,3-pentafluoropropane (HCFC–225cb); 1,1,1,2,3,4,4,5,5,5-decafluoropentane (HFC 43–10mee); difluoromethane (HFC–32); ethylfluoride (HFC–161); 1,1,1,3,3,3-hexafluoropropane (HFC–236fa); 1,1,2,2,3-pentafluoropropane (HFC–245ca); 1,1,2,3,3-pentafluoropropane (HFC–245ea); 1,1,1,2,3-pentafluoropropane (HFC–245eb); 1,1,1,3,3-pentafluoropropane (HFC–245fa); 1,1,1,2,3,3-hexafluoropropane (HFC–236ea); 1,1,1,3,3-pentafluorobutane (HFC–365mfc); chlorofluoromethane (HCFC–31); 1 chloro-1-fluoroethane (HCFC–151a); 1,2-dichloro-1,1,2-trifluoroethane (HCFC–123a); 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxy-butane ($C_4F_9OCH_3$ or HFE–7100); 2-(difluoromethoxymethyl)-1,1,1,2,3,3,3-heptafluoropropane ($(CF_3)_2CFCF_2OCH_3$); 1-ethoxy-1,1,2,2,3,3,4,4,4-nonafluorobutane ($C_4F_9OC_2H_5$ or HFE–7200); 2-(ethoxydifluoromethyl)-1,1,1,2,3,3,3-heptafluoropropane ($(CF_3)_2CFCF_2OC_2H_5$); methyl acetate, 1,1,1,2,2,3,3-heptafluoro-3-methoxy-propane (n-$C_3F_7OCH_3$, HFE–7000), 3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-(trifluoromethyl) hexane (HFE–7500), 1,1,1,2,3,3,3-heptafluoropropane (HFC 227ea), methyl formate ($HCOOCH_3$), (1) 1,1,1,2,2,3,4,5,5,5-decafluoro-3-methoxy-4-trifluoromethyl-pentane (HFE–7300); propylene carbonate; dimethyl carbonate; and perfluorocarbon compounds which fall into these classes:

(i) Cyclic, branched, or linear, completely fluorinated alkanes;

(ii) Cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;

(iii) Cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and

(iv) Sulfur containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine.

In addition, any compound designated as having a negligible contribution to photochemical reactivity by the U.S. Environmental Protection Agency as published in the Federal Register shall be considered a Non-Precursor Organic Compound.

(Amended 7/17/91; 6/15/94)

2-1-208 Organic Compound, Precursor (POC): Any organic compound as defined in Regulation 1-233, excepting the non-precursor organic compounds as defined in Section 2-1-207.

(Adopted 3/17/82; Amended 7/17/91)

2-1-209 [Deleted December 19, 2012]

2-1-210 **Start-Up Period:** The period of time between initial operation and the issuance or denial of a permit to operate of a source or facility.

(Adopted October 19, 1983)

2-1-211 **CEQA:** The California Environmental Quality Act, Public Resources Code Section 21000 *et seq*.

(Adopted July 17, 1991)

2-1-212 **EIR:** Environmental Impact Report, as defined in Public Resources Code Section 21061.

(Adopted 7/17/91; Amended 5/17/00)

2-1-213 **Facility:** Any source, building, structure or installation that emits or may emit any air pollutant; or any aggregation of such sources, buildings, structures or installations that are (i) located on one or more contiguous or adjacent properties; (ii) are under common ownership or control; and (iii) are considered to be in the same major industrial grouping (identified by the first two digits of the applicable code in *The Standard Industrial Classification Manual*). For purposes of this definition:~~,~~

213.1 ~~a~~ A Support Facility as defined in Section 2-1-242 is considered to be in the same major industrial grouping as the facility it supports, regardless of what code may nominally apply under *The Standard Industrial Classification Manual*.

213.2 A source is considered to be under control of the owner or operator of a facility if it is owned, operated or maintained by an agent or contractor acting on behalf of the facility owner or operator, unless it remains at the facility for less than 12 consecutive months (or, in the case of multiple temporary sources that are used in succession at the facility to serve the same function at the same facility source, the total time period that all such temporary sources remain at the facility is less than 12 consecutive months).

(Adopted 11/3/93; Amended 12/21/04)

2-1-214 **Federally Enforceable:** All limitations and conditions that are enforceable by the Administrator of the U. S. EPA, including but not limited to (i) requirements developed pursuant to 40 CFR Parts 60 (NSPS), 61 (NESHAPS), 63 (HAP), 70 (State Operating Permit Programs) and 72 (Permits Regulation, Acid Rain); (ii) requirements contained in the State Implementation Plan (SIP) that are applicable to the District; (iii) District regulations approved pursuant to 40 CFR Part 51, Subpart I (NSR); (iv) requirements in any operating permit issued under an EPA-approved program that is a part of the SIP and expressly requires adherence to any permit issued under such program, including requirements of any District permit condition (excluding conditions that are not enforceable by the Administrator of the U.S. EPA); and (v) requirements in federal consent decrees that are enforceable by the Administrator of the U.S. EPA.

(Adopted November 3, 1993)

2-1-215 **Hazardous Air Pollutant (HAP):** Any pollutant that is listed pursuant to Section 112(b) of the federal Clean Air Act.

(Adopted 11/3/93; Amended 5/17/00)

2-1-216 [Deleted December 19, 2012]

2-1-217 **Potential to Emit:** The maximum capacity of a source or facility to emit a pollutant based on its physical and operational design. Any physical or operational limitation on the capacity of the source or facility to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of

material combusted, stored, or processed, shall be treated as a part of its design only if the limitation, or the effect it would have on emissions, is enforceable by the District or EPA (or both). A source or facility that exceeds an enforceable limitation is considered to have a potential to emit that is unconstrained by any such exceeded limit.

(Adopted 11/3/93; Amended 5/17/00)

2-1-218 **Regulated Air Pollutant:** Except for purposes of major facility review in connection with Regulation 2, Rule 6, for which the definition in Section 2-6-222 applies, a regulated air pollutant is any air pollutant that is subject to a regulation.

(Adopted 11/3/93; Amended 5/17/00)

2-1-219 [Deleted December 19, 2012]

2-1-220 [Deleted December 19, 2012]

2-1-221 **Source:** Any article, machine, equipment, operation, contrivance or related groupings of such which may produce and/or emit air pollutants.

(Adopted June 7, 1995)

2-1-222 **Toxic Air Contaminant (TAC):** An air pollutant that may cause or contribute to an increase in mortality or in serious illness or that may pose a present or potential hazard to human health. For the purposes of this rule, TACs consist of the substances listed in Table 2-5-1 of Regulation 2, Rule 5.

(Adopted 6/7/95; Amended 5/17/00; 6/15/05)

2-1-223 **Year, Month and Day:** Unless otherwise specified by regulation or by permit condition, a year shall be any rolling 12-month period, a month shall be a calendar month, and a day shall be a calendar day.

(Adopted June 7, 1995)

2-1-224 **Responsible Laboratory Management Practices:** For the purposes of meeting the laboratory exemption of Section 2-1-113.2.12, Responsible Laboratory Management Practices include all of the following measures for minimizing the emissions of toxic air contaminants:

224.1 Open container procedures involving materials that contain volatile toxic air contaminants (TACs) shall be avoided where feasible.

224.2 Open container storage of volatile hazardous chemical wastes shall be avoided.

224.3 Training for laboratory employees handling hazardous materials shall include information about minimizing the emissions of volatile TACs. These employees shall be directed to avoid open container procedures involving volatile TACs where feasible, and to avoid open container storage of hazardous chemical waste.

224.4 Fume hoods shall be posted with notices reminding employees to avoid open container procedures using volatile TACs where feasible. Laboratories shall be inspected periodically, but not less than annually, to confirm that these notices are present.

224.5 Laboratory fume hoods shall be monitored periodically to assure proper face velocity.

224.6 Evaporation of any hazardous chemical waste containing TACs as a means of disposal shall be expressly forbidden.

(Adopted June 7, 1995)

2-1-225 [Deleted December 19, 2012]

2-1-226 **Statewide Portable Equipment Registration Program**: A uniform system for statewide registration and regulation of portable internal combustion and associated

equipment, implemented by the Air Resources Board pursuant to Section 41750 et seq. of the Health and Safety Code.

(Adopted October 7, 1998)

2-1-227 **Substantial Use**: Substantial use of an Authority to Construct consists of one or more of the following: purchase or acquisition of the equipment that constitutes the source; ongoing construction activities other than grading or installation of utilities or foundations; a contract or commitment to complete construction of the source within two years.

(Adopted October 7, 1998)

2-1-228 **Particulate Matter (PM):** Any airborne finely divided solid or liquid material with an aerodynamic diameter smaller than 100 microns.

(Adopted October 7, 1998)

2-1-229 **PM_{10}:** Particulate matter with aerodynamic diameter smaller than or equal to a nominal 10 microns. PM_{10} emissions shall include gaseous emissions from a source or activity that condense to form particulate matter at ambient temperatures.

(Adopted October 7, 1998)

2-1-230 **Functionally Equivalent:** Performing the same, or equivalent, function as the object of comparison. A functionally equivalent replacement source performs the same function for the process as the source being replaced, although emissions and other characteristics may differ. A replacement that performs additional functions is not considered to be functionally equivalent.

(Adopted October 7, 1998)

2-1-231 **Semiconductor Fabrication Area:** A physically identifiable area in a semiconductor manufacturing facility where one or more specific operations in the fabrication of semiconductors or related solid state devices occurs and the equipment used to perform those operations. The semiconductor fabrication area shall not include crystal growth, circuit separation, or encapsulation. All semiconductor fabrication equipment may be grouped into a single fabrication area, or multiple fabrication areas may be established to correspond to product lines or clean room environments.

(Adopted October 20, 1999)

2-1-232 **New Source:** Any source that has not been in existence before, including any source that meets at least one of the following criteria (except sources that lose a permit exemption or exclusion in accordance with Regulation 2-1-424):

232.1 Any source constructed or proposed to be constructed after March 7, 1979, but which never had a valid District authority to construct or permit to operate.

232.2 Any source which was not in operation for a period of one year or more and did not hold a valid District permit to operate during this period of non-operation, occurring after March 7, 1979.

232.3 Any relocation of an existing source to a non-contiguous property, ~~except for a portable source~~unless such relocation is authorized under a permit to operate at multiple locations pursuant to Section 2-1-413.

232.4 Any replacement of a source, including an identical replacement of a source, occurring after March 7, 1979, regardless of when the original source was constructed.

232.5 Any replacement of an identifiable source within a group of sources permitted together under a single source number for the purpose of District permitting convenience.

232.6 "Rebricking" of a glass furnace where changes to the furnace design result in a change in heat generation or absorption.

(Adopted May 17, 2000)

2-1-233 **Alter:** To make any physical change, change in the method of operation, or other similar change at an existing source that may affect air pollutant emissions and that does not qualify as a modification under the criteria set forth in Section 2-1-234. The APCO may impose permit conditions in an authority to construct or permit to operate for an alteration to ensure that the change authorized by the authority to construct or permit to operate will not result in a modification under Section 2-1-234. Other forms of the word alter, including altered and alteration, shall be defined based on the meaning of the root word "alter".

(Adopted 5/17/00; Amended 11/15/00)

2-1-234 **Modify:** To make any physical change, change in method of operation, change in throughput or production, or other similar change at an existing source, that results in an increase in emissions that is either of the following:

234.1 Increase in Potential To Emit: An increase in the source's daily or annual potential to emit, determined according to the definition in Section 2-1-217 and the following requirements.

1.1 Any legally enforceable limitation on a source's operations that has the effect of limiting emissions may be taken into account in determining a source's potential to emit, as provided for in Section 2-2-217. Such limits may include direct limitations on the source's emissions and surrogate limits on operating conditions such as production rate or capacity that have the effect of limiting emissions. An hourly emissions limit may be multiplied by 24 to determine daily potential to emit and a daily emissions limit may be multiplied by 365 to determine annual potential to emit, unless the source cannot operate at its full permitted limit for 24 hours per day or 365 days per year or there is some other reason why short-term permit limits do not accurately represent longer-term potential to emit. A permit limit that applies to combined emissions from multiple sources does not establish an individual source's potential to emit, unless the limit imposes an effective, legally enforceable limitation specifically on the emissions from the individual source.

1.2 For sources whose emissions are not limited by any legally enforceable limitation (or that cannot physically operate to the full extent of such limitation), the source's potential to emit shall be determined by the source's actual physical ability to emit air pollution. A source's potential to emit shall be determined by the most relevant and reliable technical information available regarding the source's operation, which may include design information, engineering specifications, or other information. A source's potential to emit shall take into account any limitation on the effective capacity of the source as a result of the capacity of any upstream or downstream process that acts as a "bottleneck" (i.e., a limit on the ability of the source to operate at maximum capacity).

1.3 For emissions toxic air contaminants and hazardous air pollutants, a change is not a modification unless the increase in the source's potential to emit results in an increase in cancer risk (as defined in

Regulation 2-5-206) greater than 1.0 in a million (10^{-6}) or an increase in chronic hazard index (as defined in Regulation 2-5-208) greater than 0.20. An increase in emissions of less than the trigger levels specified in Table 2-5-1 in Regulation 2, Rule 5 shall be presumed not to cause an increase in cancer risk of greater than 1.0 in a million or an increase in chronic hazard index of greater than 0.20.

234.2 Increase Over Actual Emissions Baseline: An increase that is a "major modification" under either of the following definitions:

2.1 Non-Attainment NSR Pollutants: For NOx, VOC, $PM_{2.5}$, and SO_2, a "major modification" as defined in 40 C.F.R. section 51.165(a)(1)(v);

2.2 Other Federal NSR Pollutants: For other pollutants, a "major modification" as defined in 40 C.F.R. section ~~51.166(b)(2)~~52.21(b)(2)(i).

The following provisions shall apply for purposes of implementing and applying this Subsection 234.2:

2.3 For purposes of determining whether an increase in emissions constitutes a "major modification" under Subsections 234.2.1 and/or 234.2.2, ~~all~~ the ~~provisions of the major NSR requirements under 40 C.F.R. Sections 51.165 and 51.166, respectively, are incorporated by reference and shall be used in implementing this Section, including (but not limited to): all~~ definitions in 40 C.F.R. ~~S~~sections 51.165(a)(1)(i)-(xlii) and ~~51.166~~52.21(b)(1)-(52), and ~~;~~ the applicability provisions in 40 C.F.R. ~~sub~~sections 51.165(a)(2)(ii)(A)-(F) and 52.21(a)(2)(ii)-(iv), are incorporated by reference and shall be used in implementing and applying this Subsection 234.2~~51.166(a)(7)~~. The term "Administrator" as used in these provisions shall be interpreted to mean the Administrator of the U.S. Environmental Protection Agency in 40 C.F.R. sections 52.21(b)(3), (b)(17), (b)(37)(i), (b)(43), (b)(48)(ii)(*c*), and (b)(49)-(51), and in all referenced provisions in 40 C.F.R. section 51.165; and it shall be interpreted to mean the APCO in all other provisions.

2.4 For any project at a "major stationary source" as defined in 40 C.F.R. sections 51.165(a)(1)(iv) or 52.21(b)(1) that (i) does not result in an increase in potential to emit as specified in subsections 234.1.1 through 234.1.3, and (ii) does not constitute a "major modification" under the definitions in subsections 234.2.1 and 234.2.2 above based on the calculation methods specified in 40 C.F.R. sections 51.165(a)(1)(xxviii)(B)(*1*)-(*3*) and 52.21(b)(41)(ii)(*a*)-(*c*), the ~~;~~ owner/operator of such project shall comply with the ~~and the~~ documentation, monitoring, recordkeeping, and reporting requirements ~~in~~ set forth in 40 C.F.R. sections~~subsections~~ 51.165(a)(6)(i)-(vi) and 52.21(r)(6)(i)-(vi) for each pollutant for which there is a reasonable possibility that the project may result in a significant emissions increase within the meaning of 40 C.F.R. sections 51.165(a)(6)(vi) and 52.21(r)(6)(vi)~~(a)(7) and subsections 51.166(r)(6) and (r)(7)~~.

2.5 The owner/operator of any project that is required to maintain any documentation pursuant to Subsection 234.2.4 above shall make

such documentation available for review upon request by the APCO, EPA, or any member of the public on the same terms as applicable under the requirements contained in 40 C.F.R. section 70.4(b)(3)(viii).

Other forms of the word modify, including modified and modification, shall be defined based on the meaning of the root word "modify".

(Adopted 5/17/00; Amended 11/15/00; 6/15/05)

2-1-235 [Deleted, December 19, 2012]

2-1-236 [Deleted, December 19, 2012]

2-1-237 **BACT/TBACT Workbook:** District guidelines setting forth emission limitations and/or control technologies constituting BACT and TBACT for a number of source types or categories.

(Adopted June 15, 2005)

2-1-238 **Clean Air Act:** The federal Clean Air Act, as amended in 1990, including the implementing regulations.

(Adopted June 15, 2005)

2-1-239 **Agricultural Source:** A source of air pollution, or group of such sources located on the same property or on contiguous properties under common ownership or control, used in the production of crops~~,~~ or the raising of fowl or animals; but excluding any source or group of sources at a facility that maintains domesticated animals in corrals, pens, or other restricted areas for commercial purposes, and feeds them by means other than grazing, in numbers equal to or exceeding any of the following thresholds on any day: ~~located on contiguous property under common ownership or control that meets any of the following criteria:~~1,000 milk-producing dairy cows; 3,500 beef cattle; 7,500 calves, heifers, or other cattle; 100,000 turkeys; 650,000 chickens other than laying hens; 650,000 laying hens; 3,000 swine; 15,000 sheep, lambs, or goats; 2,500 horses; 650,000 ducks; or 30,000 rabbits or other animals.

~~239.1 Is a confined animal facility as defined under Regulation 2, Rule 10;~~

~~239.2 Is an internal combustion engine used in the production of crops or the raising of fowl or animals, including, but not limited to, an engine subject to Article 1.5 (commencing with Section 41750) of Chapter 3 of Part 4 of Division 26 of the California Health and Safety Code, except an engine that is used to propel implements of husbandry as that term is defined in Section 36000 of the Vehicle Code, as that section existed on January 1, 2003;~~

~~239.3 Is a Major Facility, as that term is defined in Regulation 2, Rule 6, or that is a source that is otherwise subject to regulation by the District pursuant to Division 26 of the California Health and Safety Code or the federal Clean Air Act (42 U.S.C. Sec. 7401 eq.).~~

(Adopted July 19, 2006)

2-1-240 **Graphic Arts Operation:** Any gravure, flexographic printing, digital printing, screen printing, letterpress, and lithographic printing operation; any associated coating laminating, and adhesive operation to produce a printed product; and the use of solvents for any surface preparation and cleanup for any operation stated above.

(Adopted November 19, 2008)

2-1-241 **$PM_{2.5}$:** Particulate matter with aerodynamic diameter smaller than or equal to a nominal 2.5 microns. $PM_{2.5}$ emissions shall include gaseous emissions from a source or activity that condense to form particulate matter at ambient temperatures.

2-1-242 **Support Facility:** A facility that conveys, stores, or otherwise significantly assists in the production of the principal product of another facility. Per Section 2-1-213, a

support facility is considered part of the principal facility that it supports for permitting purposes under Regulation 2.

2-1-300 STANDARDS

2-1-301 Authority to Construct: Any person who, after July, 1972, puts in place, builds, erects, installs, modifies, modernizes, alters or replaces any article, machine, equipment or other contrivance, the use of which may cause, reduce or control the emission of air contaminants, shall first secure written authorization from the APCO in the form of an authority to construct. Routine repairs, maintenance, or cyclic maintenance that includes replacement of components with identical components is not considered to be an alteration, modification or replacement for the purpose of this Section unless the APCO determines the changes to be non-routine. The use or operation of the source shall initiate the start-up period in accordance with Section 2-1-411.

(Amended 3/17/82; 10/19/83; 7/17/91; 5/17/00)

2-1-302 Permit to Operate: Before any person, as described in Section 2-1-401, uses or operates any article, machine, equipment or other contrivance, the use of which may cause, reduce or control the emission of air contaminants, such person shall first secure written authorization from the APCO in the form of a permit to operate.

302.1 Permit to Operate, MFR: Any facility subject to the requirements of Regulation 2, Rule 6, Major Facility Review, shall comply with the permitting requirements included in that Rule in addition to securing a permit to operate under this Rule.

302.2 Permit to Operate, Accelerated Permitting Program: Unless subject to any of the provisions of Sections 2-1-316 through 319, a temporary permit to operate may be obtained to authorize operation of a new source or a modification or alteration of an existing source under this Section pending full review for the following categories of operation:

2.1 A new source or a modification of an existing source if the following conditions are satisfied:

1.1 The source will not have the potential to emit POC, NPOC, NOx, SO_2, $PM_{2.5}$, PM_{10}, or CO in an amount of 10 pounds or more on any day, determined without taking into account the effect of any abatement device or equipment; or the source has been pre-certified under Section 2-1-415; and

1.2 The source will not have the potential to emit toxic air contaminants in an amount that exceeds any of the trigger levels set forth in Table 2-5-1 of Regulation 2, Rule 5, determined without taking into account the effect of any abatement device or equipment; and

1.3 The source is not subject to the public notice requirements of Section 2-1-412.

2.2 An abatement device that is a replacement for an existing abatement device, provided that the replacement will not increase the potential to emit any regulated air pollutant from the abatement device and the source(s) whose emissions it abates.

2.3 An alteration of an existing source, as defined in Section 2-1-233.

An applicant seeking a permit for a new, modified or altered source that is in any of the preceding categories may apply for a temporary permit to operate under the Accelerated Permitting Program by submitting (i) a permit application form and source data form(s) properly filled out with all required information; (ii) payment of applicable fees (the minimum permit fee required to install and operate each source); (iii) a statement explaining which of the categories in subsections 2.1 through 2.3 above the source is in; (iv) a certification that the source meets all of the requirements of that category; (v) a certification that the source is not subject to Sections 2-1-316 through 2-1-319; and (vi) a certification that the applicant has reviewed all applicable New Source Performance Standards and has determined that the application will comply. The APCO shall issue a temporary Permit to Operate promptly upon determining that the application contains all of the elements required by (i)-(vi) of the preceding sentence. The owner or operator of the source may begin construction or operation of the source, or of the modification or alteration of the source, immediately upon receipt of the temporary Permit to Operate. The APCO shall complete a full review of the application and take final action in accordance with Section 2-1-408 within the time period provided for in that section. Any applicable offset requirements under Regulation 2, Rule 2, Sections 302 and 303 shall be satisfied before final permit issuance. The temporary Permit to Operate shall cease to be effective upon final action by the APCO under Section 2-1-408 (or if the permit application is canceled or withdrawn prior to such final action). During periods that the source is operating under the temporary Permit to Operate, the operator shall keep records sufficient to demonstrate that emissions do not exceed applicable qualifying levels for the Accelerated Permitting Program as set forth in subsections 2.1 through 2.3 above.

302.3 Permit to Operate, Temporary Operation: A temporary permit may be obtained to allow an operator to test equipment, processes, or new formulations. A temporary permit may also be obtained for a temporary source which replaces critical equipment during scheduled maintenance. The APCO may issue a non-renewable temporary Permit to Operate a temporary operation at any source, subject to the following:

- 3.1 The proposed operation will comply with all requirements of Regulation 1 and Regulations 5 through 12.
- 3.2 The permit shall expire 3 months after issuance.
- 3.3 The operator shall provide offsets, at a ratio of 1.15 to 1, for all increased emissions of NO_x, POC, SO_2, $PM_{2.5}$, and PM_{10} resulting from the use of the temporary permit.
- 3.4 The operator shall certify that the temporary operation is for one of the following purposes:
  - 4.1 Equipment testing
  - 4.2 Process testing, including new formulations
  - 4.3 Temporary replacement of an existing permitted source with an identical or functionally equivalent source
- 3.5 The operator shall comply with the provisions of Regulation 2-2-301, except that the cost-effectiveness analysis shall consider the short duration of the operation.

(Amended 11/3/93; 6/7/95; 10/7/98; 11/15/00)

2-1-303 **Fees:** Persons subject to this Regulation shall pay the fees required, as set forth in Regulation 3.

2-1-304 **Denial, Failure to Comply With Applicable Requirements:** The APCO shall deny an authority to construct or a permit to operate if the APCO finds that the subject of the application would not or does not comply with any emission limitations or other regulations of the District (including but not limited to the BACT and offsets requirements in Regulations 2-2-301 through 2-2-303), or with applicable permit conditions or federal or California laws or regulations, or if any required fees have not been paid. Such denial shall not be based solely on the type of construction or design of equipment.

(Amended March 17, 1982)

2-1-305 **Conformance with Authority to Construct:** A person shall not put in place, build, erect, install, modify, modernize, alter or replace any article, machine, equipment, or other contrivance for which an authority to construct has been issued except in a manner substantially in conformance with the authority to construct. If the APCO finds, prior to the issuance of a permit to operate, that the subject of the application was not built substantially in conformance with the authority to construct, the APCO shall deny the permit to operate.

(Amended December 21, 2004)

2-1-306 **Mandated Reductions Not Applicable:** Emission reductions resulting from requirements of federal, state or District laws, rules or regulations shall not be banked or allowed as emission offsets or emission reduction credits unless a complete application for such banking or emission reduction credits was filed with the District at least 90 days prior to the adoption date of such laws, rules or regulations. Only emission reduction credits exceeding the emission reductions required by measures described in the Air Quality Management Plan or required by permits or orders; and reductions achieved by measures not specified in the Air Quality Management Plan shall be banked or allowed as emission offsets or emission reduction credits.

(Amended 10/7/81; 7/17/91; 6/15/94)

2-1-307 **Failure to Meet Permit Conditions:** A person shall not operate any article, machine, equipment or other contrivance, for which an authority to construct or permit to operate has been issued, in violation of any permit condition imposed pursuant to Section 2-1-403.

(Adopted 3/17/82; Amended 7/17/91)

2-1-308 **Fugitive Emissions:** Fugitive emissions shall be included as emissions from a source or facility except as required under this Regulation.

(Adopted 10/19/83; Amended 7/17/91)

2-1-309 **Canceled Application:** The APCO may cancel an application for an authority to construct and a permit to operate if, within 90 days after the application was deemed incomplete, the applicant fails to furnish the requested information or pay all appropriate fees. The 90 day period may be extended for an additional 90 days upon receipt of a written request from the applicant and written approval thereof by the APCO. The APCO shall notify the applicant in writing of a cancellation, and the reasons therefore. A cancellation shall become effective 10 days after the applicant has been notified. The cancellation shall be without prejudice to any future applications.

(Adopted April 6, 1988)

2-1-310 **Applicability of CEQA:** Except for permit applications which will be reviewed as ministerial projects under Section 2-1-311 or which are exempt from CEQA pursuant

to Section 2-1-312, all proposed new and modified sources for which an authority to construct must be obtained from the District shall be reviewed in accordance with the requirements of CEQA.

310.1 For those District permit applications which must be reviewed in accordance with the requirements of CEQA, the District will not normally be a Lead Agency under CEQA. Rather, pursuant to CEQA, the Lead Agency will normally be an agency with general governmental powers, such as a city or county, rather than a special purpose agency such as the District.

310.2 The issuance of an authority to construct and of a permit to operate for the same new or modified source or stationary source are considered to be parts of the same project for the purposes of CEQA.

310.3 The APCO shall not authorize, on an interim basis or otherwise, the installation or operation of any proposed new or modified source, the permitting of which is subject to the requirements of CEQA, until all of the requirements of CEQA have been satisfied.

(Adopted 7/17/91; Amended 10/21/92)

2-1-311 Ministerial Projects: An application for a proposed new or modified source or stationary source will be classified as ministerial and will accordingly be exempt from the CEQA requirement of Section 2-1-310 if the District's engineering evaluation and basis for approval or denial of the permit application for the project is limited to the criteria set forth in Section 2-1-428 of this rule and to the specific procedures, fixed standards and objective measurements set forth in the District's Permit Handbook and BACT/TBACT Workbook. The method for determining whether a given permit application will be classified as ministerial is set forth in Section 2-1-427.

(Adopted 7/17/91; Amended 10/7/98)

2-1-312 Other Categories of Exempt Projects: In addition to ministerial projects, the following categories of projects subject to permit review by the District will be exempt from the CEQA review, either because the category is exempted by the express terms of CEQA (subsections 2-1-312.1 through 312.9) or because the project has no potential for causing a significant adverse environmental impact (subsections 2-1-312.10 and 312.11). Any permit applicant wishing to qualify under any of the specific exemptions set forth in this Section 2-1-312 must include in its permit application CEQA-related information in accordance with subsection 2-1-426.1. In addition, the CEQA-related information submitted by any permit applicant wishing to qualify under subsection 2-1-312.11 must demonstrate to the satisfaction of the APCO that the proposed project has no potential for resulting in a significant environmental effect in connection with any of the environmental media or resources listed in Section II of Appendix I of the State CEQA Guidelines.

312.1 Applications to modify permit conditions for existing or permitted sources or facilities that do not involve any increases in emissions or physical modifications.

312.2 Permit applications to install air pollution control or abatement equipment.

312.3 Permit applications for projects undertaken for the sole purpose of bringing an existing facility into compliance with newly adopted regulatory requirements of the District or of any other local, state or federal agency.

312.4 Permit applications submitted by existing sources or facilities pursuant to a loss of a previously valid exemption from the District's permitting requirements.

312.5 Permit applications submitted pursuant to the requirements of an order for abatement issued by the District's Hearing Board or of a judicial enforcement order.

312.6 Permit applications relating exclusively to the repair, maintenance or minor alteration of existing facilities, equipment or sources involving negligible or no expansion of use beyond that previously existing.

312.7 Permit applications for the replacement or reconstruction of existing sources or facilities where the new source or facility will be located on the same site as the source or facility replaced and will have substantially the same purpose and capacity as the source or facility replaced.

312.8 Permit applications for cogeneration facilities which meet the criteria of Section 15329 of the State CEQA Guidelines.

312.9 Any other project which is exempt from CEQA review pursuant to the State CEQA Guidelines.

312.10 Applications to deposit emission reductions in the emissions bank pursuant to Regulation 2, Rule 4 or Regulation 2, Rule 9.

312.11 Permit applications for a proposed new or modified source or sources or for process changes which will satisfy the “No Net Emission Increase" provisions of District Regulation 2, Rule 2, and for which there is no possibility that the project may have any significant environmental effect in connection with any environmental media or resources other than air quality. Examples of such projects include, but are not necessarily limited to, the following:

11.1 Projects at an existing stationary source for which there will be no net increase in the emissions of air contaminants from the stationary source and for which there will be no other significant environmental effect;

11.2 A proposed new source or stationary source for which full offsets are provided in accordance with Regulation 2, Rule 2, and for which there will be no other significant environmental effect;

11.3 A proposed new source or stationary source at a small facility for which full offsets are provided from a small facility bank established by the APCO pursuant to Regulation 2-4-414, and for which there will be no other significant environmental effect;

11.4 Projects satisfying the "no net emission increase" provisions of District Regulation 2, Rule 2 for which there will be some increase in the emissions of any toxic air contaminant, but for which the District staff’s health risk screening analysis shows that the project will not result in a cancer risk (as defined in Regulation 2-5-206) greater than 1.0 in a million (10^{-6}) and will not result in a chronic hazard index (as defined in Regulation 2-5-208) greater than 0.20, and for which there will be no other significant environmental effect.

(Adopted 7/17/91; Amended 5/17/00; 12/21/04; 6/15/05)

2-1-313 Projects Not Exempt From CEQA Review: Notwithstanding the exemptions from CEQA review set forth in Section 2-1-312, such exemptions shall not apply to any project covered by the categories set forth in subsections 2-1-312.1 through 312.9 where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances, or due to cumulative impacts of

successive projects of the same type in the same place over time. Such projects shall be reviewed in accordance with the requirements of CEQA.

(Adopted 7/17/91; Amended 6/15/05)

2-1-314 Case-by-Case CEQA Determinations: Notwithstanding the requirement of Section 2-1-311, the District shall, for any permit applications which were deemed complete by the District on or before July 17, 1991, review said permit applications on a case-by-case basis in order to determine whether the District's evaluation of the permit application will involve any element of discretion. If as a result of this case-by-case-review, the District determines that the evaluation of the permit application will not involve any element of discretion on its part, then the application may be treated as a ministerial project so long as all of the following conditions are met:

314.1 The District makes a specific written finding to this effect as part of its determination that the permit application is complete;

314.2 The District will merely apply the law to the facts as presented in the permit application; and

314.3 The District's evaluation of the permit application and its decision regarding whether to issue the permit will be limited to the criteria set forth in Section 2-1-428.

(Adopted July 17, 1991)

2-1-315 Denial, Failure to Mitigate Significant Adverse Environmental Impacts: For any application for which the District is a Lead Agency under CEQA, where significant adverse environmental impacts have been identified in the District's review of, or in the course of the public comment period on, said application, the APCO shall deny an authority to construct to such new or modified stationary source, as proposed, unless:

315.1 The applicant agrees to implement or carry out such available alternatives or mitigation measures which would, to the extent feasible, avoid or substantially lessen any such significant adverse environmental impacts as a condition for issuance of an authority to construct; or

315.2 The APCO finds that any such available, feasible alternatives or mitigation measures are within the responsibility and jurisdiction of another public agency, and such measures have been adopted by such other agency, or can and should be adopted by such other agency; or

315.3 The APCO finds that there are no feasible alternatives or measures to substantially mitigate the unavoidable adverse environmental effects associated with the project, but that the benefits of the project outweigh such unavoidable adverse environmental effects, and the APCO states in writing the reasons and overriding considerations to support the issuance of the authority to construct based on the Final EIR and other information in the record notwithstanding the unavoidable adverse environmental effects associated with the project.

(Adopted November 20, 1991)

2-1-316 New or Modified Sources of Toxic Air Contaminants or Hazardous Air Pollutants: Notwithstanding any exemption contained in Section 2-1-103 or Section 114 through 128, any new or modified source meeting any of the following criteria shall be subject to the requirements of Regulation 2, Rule 1, Section 301 and/or 302.

316.1 If a new or modified source emits one or more toxic air contaminants in quantities that exceed the trigger levels listed in Table 2-5-1 of Regulation 2-5 and the source did not have a valid exemption from Regulation 2-1-302

when the source was constructed or modified, then the source shall be subject to the requirements of Sections 2-1-301 and 302, unless the owner or operator of the source can demonstrate to the satisfaction of the APCO that the source:

1.1 Will comply with the TBACT requirement of Regulation 2-5-301 (if applicable); and

1.2 Will comply with the project risk limits of Regulation 2-5-302 (if applicable).

316.2 If a new or modified source, or group of related sources in a proposed construction or modification will emit 2.5 or more tons per year of any single hazardous air pollutant or 6.25 or more tons per year of any combination of hazardous air pollutants, then the source or group of sources shall be subject to the requirements of Sections 2-1-301 and 302.

(Adopted 4/16/86; Amended 7/17/91;Renumbered and Amended 6/7/95; Amended 5/17/00; 6/15/05)

2-1-317 Public Nuisance Sources: Notwithstanding any exemption contained in Section 2-1-103 or Section 114 through 128, any new or modified source meeting any of the following criteria shall be subject to the requirements of Regulation 2, Rule 1, Section 301 and/or 302. If any exempt source receives two or more public nuisance violations, under Regulation 1, Section 301 or Section 41700 of the California Health & Safety Code, within any consecutive 180-day period, then the source shall be subject to the requirements of Section 2-1-301 and 302. Such a source will be treated as loss of exemption source under Section 2-1-414, and will be subject to the annual permit to operate fee specified in Regulation 3. This section does not apply to a source that is exempt per section 2-1-113.

(Adopted 6/7/95; Amended 5/17/00)

2-1-318 Hazardous Substances: Notwithstanding any exemption contained in Section 2-1-103 or Section 114 through 128, any new or modified source meeting any of the following criteria shall be subject to the requirements of Regulation 2, Rule 1, Section 301 and/or 302. If a new or modified source at a facility in one of the 28 categories listed in Section 169(1) of the Clean Air Act that emits 100 tons per year of any PSD Pollutant as defined in Section 2-2-223, or at a facility not listed in any such category that emits 250 tons per year or more of any PSD Pollutant as defined in Section 2-2-223, emits any of the following air contaminants in excess of the quantities listed below, then it is subject to the requirements of Sections 2-1-301 and 302.

318.1 0.6 ton per year of lead,

318.2 0.007 ton per year of asbestos (excepting demolition, renovation, and waste disposal),

318.3 0.0004 ton per year of beryllium,

318.4 0.1 ton per year of mercury,

318.5 1 ton per year of vinyl chloride,

318.6 3 tons per year of fluorides,

318.7 7 tons per year of sulfuric acid mist, and

318.8 10 tons per year of reduced sulfur compounds (including hydrogen sulfide).

(Adopted 10/19/83; Renumbered and Amended 6/7/95; Amended 5/17/00)

2-1-319 Source Expressly Subject to Permitting Requirements: Notwithstanding any exemption contained in Section 2-1-103 or Sections 2-1-114 through 2-1-128, any source meeting any of the following criteria shall be subject to the requirements of Section 2-1-302:

319.1 The emission rate of any regulated air pollutant (except greenhouse gases) from the source is greater than 5 tons per year, after abatement.

319.2 The source is subject to the requirements of Section 2-1-316, 317, or 318.

(Adopted May 17, 2000)

2-1-320 Compliance With Material Representations Made In Connection With Permit Applications: In addition to the explicit conditions contained in an authority to construct and/or permit to operate, the owner and operator of a source of air pollutant emissions shall construct and operate the source in conformance with any representations made or information submitted to the APCO in connection with the application for such authority to construct and/or permit to operate, provided such representations or information were material to the APCO's decision to issue the authority to construct and/or permit to operate. Construction or operation of the source not in conformance with such material representations or information shall be a violation of this Regulation.

2-1-321 Compliance With Provisions of State Implementation Plan and Other Requirements of Local, California and Federal Law: Issuance of an authority to construct and/or permit to operate for a facility under this Rule shall not relieve the owner and operator of the facility from the responsibility to comply fully with all applicable provisions of the state implementation plan for California and all other requirements under local, California and federal law.

2-1-400 ADMINISTRATIVE REQUIREMENTS

2-1-401 Persons Affected: Any person who has been granted or requires an authority to construct shall secure a permit to operate. Any person who is not required to obtain an authority to construct and who is required to obtain a permit to operate shall secure a permit to operate. In addition, the following shall apply for a permit to operate for any source which is not subject to an exemption per Sections 2-1-103, 105, or 113 through 2-1-129:

401.1 On or before July 1, 1980, persons who operate a facility causing emissions of 2.5 tons per year or more of a regulated air pollutant.

401.2 On or before July 1, 1980, persons who operate gasoline terminals, bulk plants and facilities that dispense gasoline for sale or dispense more than 60,000 gallons of gasoline per year.

401.3 Persons who operate coating, adhesive, dipping, laminating, printing, screening, masking, electrodeposition, resist application, or similar source or equipment at any facility whose coating, adhesive, dipping, laminating, printing, screening, masking, electrodeposition, resist application, or similar source or equipment consume greater than 30 gallons of coating and emit 150 pounds of VOC per year or more on a facility wide basis, resulting from the applications of coatings. Upon request of the applicant, the APCO may group coating operations which individually emit less than 150 lb/yr into a single facility-wide source, or other convenient grouping.

401.4 Persons who operate surface preparation and cleaning equipment or operations which use unheated solvent solutions containing more than 10 percent VOC and which contain more than 1 gallon of solvent or have a liquid surface area of more than 1 $ft.^2$, including wipe cleaning operations with a net solvent usage greater than 20 gallons per year, and that emit 150 pounds of VOC per year or more, on a facility-wide basis. Upon request of

the applicant, the APCO may group wipe cleaning operations into a single facility-wide source, or other convenient groupings.

401.5 Persons who plan to modify an existing source or install a new source which qualifies for the Accelerated Permitting Program in Section 2-1-106 shall first submit a complete permit application, in accordance with Section 2-1-302.2.

401.6 Persons who operate a source that is subject to either loss of exemption or exclusion per section 2-1-414 or 2-1-424.

401.7 Persons who operate a source constructed after July 1, 1972.

401.8 On or before July 1, 2005, any person who operates a crematorium for the cremation of human remains.

(Amended 4/16/86; 1/7/87; 7/17/91; 6/7/95; 10/7/98; 5/17/00; 12/21/04)

2-1-402 Applications: Every application for an authority to construct or a permit to operate shall be submitted to the APCO on the forms specified, and shall contain all of the following information:

402.1 Sufficient information for the APCO to determine the emissions from the sources that are the subject of the application, and to quantify emissions from the sources of any emission reduction credits that will be relied upon as part of the application.

402.2 Any information requested by the APCO in order to determine the air quality impact from sources that are the subject of the application.

402.3 All applicable fees, as described in Regulation 3.

402.4 If the application is subject to the New Source Review requirements of Regulation 2, Rule 2, all information required under Section 2-2-401.

402.5 CEQA-related information that satisfies the requirements of Section 2-1-426.

402.6 A certification stating whether the source triggers the requirements of Section 2-1-412.

402.7 A specific designation of any information contained in the application that the applicant asserts is trade secret pursuant to Section 6254.7 of the Government Code. The applicant shall submit two copies of each page containing trade secret information. One copy shall be clearly labeled “Trade Secret,” and each trade secret item shall be clearly marked. The second copy shall be clearly labeled “Public Copy,” and each trade secret item shall be redacted. The applicant shall include, for each item which it asserts to be a trade secret, a statement signed by a responsible representative of the applicant identifying that portion of Government Code Section 6254.7(d) upon which the assertion is based and a brief statement setting forth the basis for this assertion.

402.8 Any other information requested by the APCO as necessary to determine whether the new, modified or altered source will comply with applicable regulatory requirements.

The application must contain sufficient information to enable the APCO to make a decision or a preliminary decision on the application and/or on any exemptions authorized by this Regulation. The APCO may consult with appropriate local and regional agencies to determine whether the application conforms with adopted plans and with local permit requirements.

2-1-403 Permit Conditions: Except as to permit applications reviewed in accordance with Section 2-1-311, the APCO may impose any permit condition that he deems reasonably necessary to insure compliance with federal or California law or District

regulations. For any permit application which was reviewed as a ministerial project in accordance with Section 2-1-311, the APCO shall only impose permit conditions as set forth in the District's Permit Handbook for the type of source being permitted. The APCO may require the installation of devices for measurement or analysis of source emissions or ground-level concentrations of air contaminants.

(Amended 7/17/91; 10/7/98)

2-1-404 Changes in Throughput and Hours of Operation: After a permit to operate has been issued, in accordance with subsections 2-1-401.1 through 401.4, changes in hours of operation, fuels, process materials or throughput are allowed only if emissions resulting from such changes are not of such quantity as would cause denial of an authority to construct after an air quality permit analysis made pursuant to the provisions of Rule 2 of this Regulation. "Change" is the use of a process or fuel not used in the prior 12 months, or a throughput level higher than the highest level in the prior 12 months or total monthly operating hours higher than any month in the prior 12 months.

404.1 The holder of a permit to operate shall advise the APCO not more than 30 days after any changes in hours of operation, fuels, process materials or throughput which might increase emissions.

404.2 The APCO shall act to revoke the permit to operate of any person who fails to comply with the requirements of this Section.

(Amended July 17, 1991)

2-1-405 Posting of Permit to Operate: A copy of the permit to operate, including all relevant permit conditions, shall be accessible to personnel who operate the equipment for which the permit has been issued. These documents shall be included on site in the operator's manual, or shall be accessible to the operators electronically.

(Amended 5/17/00; 11/15/00)

2-1-406 Transfer: An authority to construct or a permit to operate shall not be transferable from one facility to another. An authority to construct or a permit to operate shall not be transferable from one person to another without obtaining written permission of the APCO.

2-1-407 Authority to Construct Expiration: An authority to construct shall expire two years after the date of issuance, unless the authority to construct has been renewed. Upon receipt of a written request and any required fees prior to the expiration of the authority to construct, the APCO shall renew the authority to construct in writing if the APCO determines that the renewal complies with this section and that the holder of the authority to construct is not violating any provision or condition of the authority. If the APCO does not act on such a request prior to expiration of the authority to construct, the authority shall remain in effect until the APCO has acted to approve or deny the renewal request (up to a maximum of an additional 12 months).

407.1 The following requirements shall apply to renewals:

1.1 Except as provided in Sections 2-1-407.2 and 407.3, an authority to construct may be renewed one time for an additional two years.

1.2 Except for renewals pursuant to Section 2-1-407.3, renewal is contingent upon meeting the current BACT and offset requirements of Regulation 2-2-301, 302 and 303.

1.3 Except as provided in Sections 2-1-407.2 and 407.3, an authority to construct that has been renewed shall expire four years after the date of original issuance.

407.2 If the authority to construct was issued pursuant to an environmental impact report (EIR) that explicitly covered a construction period longer than four years, the authority to construct shall, upon request by the applicant, be renewed for additional two-year terms throughout the construction period covered by the EIR.

407.3 If substantial use of the authority to construct has begun, either during the initial term or during a renewal term, the authority to construct shall, upon request by the applicant, be renewed for additional two-year terms until the permit to operate is issued, or, if a term of less than two years is requested, for such term as is requested.

(Amended 7/17/91; Amended 10/7/98; 6/1/05)

2-1-408 Action on Applications: Except for applications subject to Section 2-1-412, the publication and public notice requirements of Section 2-2-404 or Section 2-10-402, or to the provisions of Rule 6 of this Regulation, the APCO shall notify the applicant in writing of approval, approval with conditions, or denial of the application within 35 working days of receipt of a completed application, unless the time is extended with the written consent of the applicant.

408.1 Notwithstanding this 35-working-day limit, the APCO shall not take final action for any project for which an Environmental Impact Report or a Negative Declaration has been prepared until a Final EIR for that project has been certified or a Negative Declaration for that project has been approved, and the APCO has considered the information in that Final EIR or Negative Declaration. For cases in which the 35 working-day time period has elapsed, the APCO shall take final action on the application within 30 days after the certification of the Final EIR or approval of the Negative Declaration, or after final resolution of any appeals from such certification or approval. This subsection shall not apply to any project that is exempt from the District's CEQA requirements pursuant to Section 2-1-311 or 2-1-312. Any substantive change to an application which occurs after the evaluation period has begun shall allow the APCO to start a new completeness review period, and to reset the 35 working-day limit after the application has been deemed complete.

(Amended 11/1/89; 7/17/91; 11/20/91; 11/3/93; 6/7/95; 10/7/98; 12/21/04; 7/19/06)

2-1-409 Regulations in Force Govern: The decision as to whether an authority to construct shall be granted or denied shall be based on federal, state and District BACT, offset, TBACT, and project risk regulations or standards in force on the date the application is declared by the APCO to be complete.

(Amended June 15, 2005)

2-1-410 Appeal: The following actions of the APCO may be appealed:

410.1 In accordance with Section 42302 of the Health and Safety Code an applicant for an authority to construct which has been denied may request, within 30 days after receipt of the written notice to deny, the Hearing Board of the District to hold a hearing on whether or not the authority to construct was properly denied.

410.2 In accordance with Section 42302.1 of the Health and Safety Code, within 30 days of any decision of the APCO, pertaining to the issuance of an authority to construct, any aggrieved person who, in person or through a representative, appeared, submitted written testimony, or otherwise participated in the action before the District may request the Hearing Board

of the District to hold a public hearing to determine whether the authority to construct was properly issued or for an order modifying or reversing that decision. Such appeals shall be filed in writing and contain a summary of the issues to be raised. The Hearing Board shall consider the appeal at a public hearing within 30 days of the filing of the appeal. The Hearing Board may reverse or modify the decision of the APCO if it determines that the decision was erroneous.

410.3 In accordance with Section 40724.6(g) of the Health and Safety Code, a permitholder of a large confined animal facility may appeal any District determination or decision made under Regulation 2, Rule 10, in accordance with Section 2-1-410.2.

(Amended 7/17/91; 11/20/91; 5/17/00; 7/19/06)

2-1-411 Permit to Operate, Final Action: The APCO shall take final action to approve, approve with conditions, or disapprove a permit to operate a source subject to this rule within 90 days after the initial date of the start-up period of the new or modified source, unless such time period is extended with the written concurrence of the APCO and the applicant. An authority to construct authorizes operation of the source during the start-up period. All conditions, specific or implied, of the authority to construct are in effect during the entire start-up period.

411.1 Notwithstanding the above, final action taken on permits issued pursuant to Rule 6 of this Regulation shall be in accordance with the provisions of Section 2-6-410.

411.2 A permit approved under this section must be signed by the permit holder or by a person authorized to sign on behalf of the permit holder.

(Adopted 10/19/83; Amended 7/17/91; 11/3/93; 10/7/98; 12/21/04)

2-1-412 Public Notice, Schools: Prior to approving an application for an authority to construct or permit to operate for a new or modified source located within 1000 feet of the outer boundary of a K-12 schoolsite and which results in the increase in emissions of any substance into the ambient air which has been identified by the California Air Resources Board or the APCO as a toxic air contaminant or a hazardous air contaminant or which is on the list required to be prepared pursuant to subdivision (a) of Section 25532 or Section 44321 subsections (a) to (f) inclusive of the Health and Safety Code, the APCO shall:

412.1 Prepare a public notice in which the proposed new or modified source, and the proposed emissions, are fully described.

412.2 Distribute the notice, prepared in accordance with subsection 2-1-412.1 at the expense of the applicant, to the parents or guardians of children enrolled in any school within one-quarter mile of the source and to each address within a radius of 1000 feet of the source. This notice shall be distributed at least 30 days prior to the date final action on the application is to be taken by the APCO. The APCO shall review and consider all comments received during the 30 days after the notice is distributed, and shall include written responses to the comments in the permit application file prior to taking final action on the application.

412.3 Failure of any person to receive the notice shall not affect the validity of the authority to construct or permit to operate issued by the APCO, if the APCO or applicant responsible for giving the notice has made a good faith effort to follow the procedures for giving the notice prescribed by law.

(Adopted 11/1/89; Amended 10/7/98; 5/17/00)

2-1-413 Permits for Operation of Equipment at Multiple Locations Within the District: Any person required to obtain an authority to construct and/or permit to operate under Sections 2-1-301 and/or 302 for a source that may be operated at multiple locations within the District can apply for a single multiple-location permit that will allow the source to operate at more than one location in the District. The APCO shall issue the permit, upon payment of standard filing, initial and permit to operate fees as set forth in Regulation 3, if the source satisfies all of the following requirements:

413.1 The source will not emit more than 10 tons per year of any regulated air pollutant, including POC, CO, NOx, $PM_{2.5}$, PM_{10}, NPOC or SO_2~~.~~, but excluding greenhouse gases. For $PM_{2.5}$ and PM_{10}, fugitive particulate emissions from haul road traffic shall not be counted toward the annual limit.

413.2 The source will comply with all applicable provisions of Regulation 2, Rule 5.

413.3 The source will not be operated within 1000 feet of the outer boundary of any K-12 school site, unless the applicable notice requirements of Health and Safety Code Section 42301.6 have been met.

413.4 Operation of the source will not cause a public nuisance per Regulation 1-301.

413.5 The operation must be exempt from CEQA, or must be covered by a chapter in the District's Permit Handbook.

413.6 The equipment will not cause a Synthetic Minor Facility to exceed a federally enforceable emission limit.

413.7 The source will not remain at the same facility for more than 12 consecutive months following initial operation (or, in the case a source that is used in seasonal operations that last less than 12 months, for more than the full length of a normal operating season). If multiple temporary sources are used in succession at the facility to serve the same function at the same facility source, the total time period that all such temporary sources remain at the facility is counted towards the 12-month (or operating season) limit.

If the source no longer satisfies any of these requirements, it shall be subject to the requirements of Regulation 2, Rules 1, 2, and 5, as if it were a new source.

(Adopted June 7, 1995)

2-1-414 Loss of Exemption, Public Nuisance: Any source subject to Section 2-1-317 shall be subject to permit conditions deemed necessary by the District to minimize the potential for future violations. If the owner/operator can demonstrate that the source has neither received a public nuisance violation nor received a confirmed complaint for a two year period after the permit was issued, then the owner/operator may submit a written petition to the APCO to remove the permit requirement. Such a petition is subject to APCO approval.

(Adopted June 7, 1995)

2-1-415 Source Pre-Certification Procedure: Any person may submit a written request to pre-certify a source as complying with applicable BACT requirements, for the purposes of qualifying the source for the Accelerated Permitting Program under Section 2-1-302.2.1.1. Such a request will be evaluated within 60 days of receipt of the information listed below. The APCO may also independently pre-certify a source. The APCO shall maintain a list of pre-certified equipment, and shall make this list

available to industry through the Public Information & Education Division. A pre-certification request shall include all of the following:

415.1 A complete description of the source, including make, model number, rated capacity and emission calculations at maximum operating rate;

415.2 Applicable BACT requirements;

415.3 Proposed permit conditions governing operation of the source; and

415.4 Applicable fees, as described in Regulation 3, Section 323.

(Adopted June 7, 1995)

2-1-416 Temporary Amnesty for Unpermitted Sources: The APCO has the authority to declare an amnesty period, during which the District may waive all or part of the penalty fees, including late fees and retroactive permit fees, for sources that are currently operating without valid Permits to Operate.

(Adopted 6/7/95; 12/21/04)

2-1-420 Suspension: The APCO may suspend a permit if, within a reasonable time, the holder of the permit willfully fails or refuses to furnish requested information, analyses, plans or specifications relating to emissions from the source for which the permit was issued. The APCO shall serve notice in writing of a suspension, and the reasons therefor, on the holder of the permit. A suspension shall become effective 5 days after notice has been served.

2-1-421 Appeal from Suspension: Within 10 days after the receipt of the notice of suspension, the permit holder may request the Hearing Board to hold a hearing to determine whether or not the permit was properly suspended.

2-1-422 Revocation: The APCO may request the Hearing Board to hold a hearing to determine whether an authority to construct and/or permit to operate should be revoked if it is found that the holder of an authority to construct or permit to operate is violating any applicable order, rule or regulation of the District, or is violating any provision or condition of the authority to construct or permit to operate.

(Amended May 17, 2000)

2-1-423 Hearings: Within 30 days after receipt of requests submitted pursuant to Sections 2-1-421 and 422, the Hearing Board shall hold a hearing as provided by Section 42308 of the California Health and Safety Code and may take action as authorized by Section 42309 of the California Health and Safety Code.

(Amended July 17, 1991)

2-1-424 Loss of Exemption or Exclusion: ~~Within 90 days of written notification by the APCO of the need for a permit~~ A~~a~~ny person who operates a source ~~which~~ that does not require a District permit because of a regulatory exemption or exclusion, ~~or, for a large confined animal facility subject to Regulation 2, Rule 10 in existence on July 17, 2006, within 180 days of that date,~~ but which becomes subject to a District permit requirement ~~who~~ because it loses ~~an~~ its exemption or exclusion ~~because~~ as a result of changes in federal, California or District laws or regulations, shall submit a complete permit application ~~for the subject source~~, as defined Section 2-1-202, for the subject source within 90 days of written notification by the APCO of the need for a permit. A person who holds a valid permit to operate for the subject source need not reapply.

(Adopted 4/16/86; Amended 6/7/95; 10/7/98; 7/19/06)

2-1-425 Sources of Toxic Air Contaminants: Any person who does not hold a valid permit to operate in accordance with Section 2-1-401 and emits, in quantities determined to be appropriate by the APCO, any toxic air contaminant, shall within 90 days of written notice by the APCO of the need for a permit to operate, complete a permit

application for the subject source, in accordance with the applicable requirements of Section 2-1-202 or Section 2-1-302.2.

(Amended June 7, 1995)

2-1-426 CEQA-Related Information Requirements: Unless a project for which an authority to construct is sought is exempt from the District's CEQA requirements pursuant to Section 2-1-311 or 2-1-312 of this Rule, applicants for authorities to construct shall provide, as part of a complete application, the following CEQA-related information:

426.1 A preliminary environmental study which shall describe the proposed project and discuss any potential significant adverse environmental impacts, alternatives to the project, and any necessary mitigation measures to minimize adverse impacts. The preliminary environmental study shall include all activities involved in the project and shall not be limited to those activities affecting air quality. In preparing the preliminary environmental study, the applicant may utilize the Environmental Information Form in Appendix H of the State CEQA Guidelines or an equivalent format specified by the APCO. (see also Appendix G, Significant Effects.) The preliminary environmental study shall list all other local, state and federal governmental agencies that require permits for the project and indicate any environmental documentation required by such agencies; or

426.2 When an agency other than the District is to be the Lead Agency under CEQA, either:

2.1 A Draft or Final Environmental Impact Report prepared by or under the supervision of the Lead Agency; or

2.2 A contract for the preparation of a Draft Environmental Impact Report executed by the Lead Agency together with the Initial Study prepared by the Lead Agency; or

2.3 A Negative Declaration prepared by the Lead Agency; or

2.4 A Notice of Preparation of a Draft EIR prepared by the Lead Agency;

2.5 A copy of the Initial Study prepared by the Lead Agency, or

2.6 A commitment in writing from another agency indicating that it has assumed the role of Lead Agency for the project in question.

(Adopted 11/20/91; Amended 10/7/98)

2-1-427 Procedure for Ministerial Evaluations: The District shall review each permit application prior to finding that it is complete in order to determine whether its evaluation of the permit application is covered by the specific procedures, fixed standards and objective measurements set forth in the District's Permit Handbook and BACT/TBACT Workbook. If the District determines that its evaluation of the permit application is covered by specific procedures, fixed standards and objective measurements set forth in the District's Permit Handbook and BACT/TBACT Workbook, the District's evaluation of that permit application will be classified as ministerial and the engineering evaluation of the permit application by the District will be limited to the use of said specific procedures, fixed standards and objective measurements. For such projects, the District will merely apply the law to the facts as presented in the permit application, and the District's decision regarding whether to issue the permit will be based only on the criteria set forth in Section 2-1-428 and in the District's Permit Handbook and BACT/TBACT Workbook.

(Adopted 11/20/91; Amended 10/7/98)

2-1-428 Criteria for Approval of Ministerial Permit Applications: If the District classifies a permit application as ministerial pursuant to Section 2-1-427, and as a result of its

evaluation of that permit application, the District determines that all of the following criteria are met, the issuance by the District of an Authority to Construct for the proposed new or modified source will be a mandatory ministerial duty.

428.1 The proposed new or modified source will comply with all applicable provisions of the District's Rules and Regulations and with all applicable provisions of state and federal law and regulations which the District has the duty to enforce;

428.2 The emissions from the proposed project can be calculated using standardized emission factors from published governmental sources, District source test results, established formulas from published engineering and scientific handbooks, material safety data sheets or other similar published literature, manufacturer's warranties or other fixed standards as set forth in the District's Permit Handbook and BACT/TBACT Workbook;

428.3 Where Best Available Control Technology is required, BACT for the proposed new or modified source can be determined based on the latest edition of the ARB's BACT/LAER Clearinghouse, on the District's own compilations of BACT levels for specific types of sources as set forth in the District's Permit Handbook and BACT/TBACT Workbook or on a more stringent BACT level proposed by the project proponent; and

428.4 If the proposed new or modified source involves the shutdown of an existing source, the Reasonably Available Control Technology applicable to the source to be shut down can be determined from existing provisions of the District's Rules and Regulations or from the District's own compilations of BACT levels for specific types of sources as set forth in District's Permit Handbook and BACT/TBACT Workbook.

428.5 For proposed new and modified sources that are subject to Regulation 2, Rule 5, the project meets the project risk requirement of Regulation 2-5-302.

428-6 Where Best Available Control Technology for Toxics (TBACT) is required pursuant to Regulation 2-5-301, TBACT for the proposed new or modified source can be determined based on TBACT determinations in the District's BACT/TBACT Workbook, an EPA MACT standard, a CARB ATCM, or a more stringent TBACT level proposed by the applicant that is applicable to the specific source type or source category being evaluated.

In addition, when the District has issued an authority to construct for a proposed new or modified source as a ministerial project, the issuance of the permit to operate for that source will also be a mandatory ministerial duty if the source will meet all the conditions imposed in connection with the issuance of the authority to construct and all applicable laws, rules and regulations enforced by the District.

(Adopted 11/20/91; Amended 10/7/98; 6/15/05)

2-1-429 Federal Emissions Statement: The owner or operator of any facility that emits or may emit oxides of nitrogen or volatile organic compounds shall provide the APCO with a written statement, in such form as the APCO prescribes, showing actual emissions of oxides of nitrogen and volatile organic compounds from that facility. At a minimum the emission statement shall contain all of the information contained in the Air Resources Board's Emission Inventory Turn Around Document as described in Instructions for the Emission Data System Review and Update Report. The statement shall also contain a certification by a responsible official of the company or facility that the information contained in the statement is accurate to the best knowledge of the individual certifying the statement. Effective November 1, 1994,

the statement shall be submitted to the District each year with the annual permit renewal. The APCO may waive this requirement for any class or category of facilities that emit less that 25 tons per year of oxides of nitrogen and volatile organic compounds, each taken separately, if the District provides the Air Resources Board with emission inventories of facilities emitting greater than 10 tons per year of either oxides of nitrogen or volatile organic compounds based on the use of emission factors acceptable to the Air Resources Board and the U.S. Environmental Protection Agency (EPA). A current list of classes and categories of facilities for which this requirement has been waived by the APCO will be kept by the District and made available upon request. Also, for purposes of reporting emission data to the Air Resources Board and to the EPA, the District will provide calendar year and peak ambient ozone season data determined through weighted averaging of current and prior year (if available) company/facility reported certified information. This Section is required by the provisions of Section 182(a)(3)(B) of the Clean Air Act.

(Adopted 11/4/92; Amended 6/15/94; 6/7/95; 12/21/04)

2-1-430 Maintenance of the Permit Handbook and BACT/TBACT Workbook: The APCO shall publish and maintain the Permit Handbook and BACT/TBACT Workbook as needed to reflect the current procedure for review and issuance of permits, and the most recent determination of BACT/TBACT for a given source category.

(Adopted October 7, 1998)

2-1-431 Date of Completion: The APCO shall deem an application to be complete on the date that the information and fees required to complete the application were received by the District.

(Adopted May 17, 2000)

2-1-432 Determination of Complete Application: Except for an application which is subject to the publication and public comment requirements of Section 2-2-404, the APCO shall determine whether an application for an authority to construct is complete not later than 15 working days following receipt of the application, or after a longer time period agreed upon by both the applicant and the APCO. If the APCO determines that the application is not complete, the applicant shall be notified in writing of the decision, specifying the information that is required. Upon receipt of any resubmittal of the application a new 15 working day period to determine completeness shall begin. For an application which is subject to the publication and public comment requirements of Section 2-2-404 or Section 2-10-402, the completeness review period(s) shall be 30 days. The application shall be deemed complete on the date of receipt of all information required for completeness. Upon determination that the application is complete, the APCO shall notify the applicant in writing. If applicable, such written notification shall include the District's determination that its evaluation of the application will be covered by the specific procedures, fixed standards and objective measurements set forth in the District's Permit Handbook and that the District's evaluation of that permit application will be classified as ministerial and will accordingly be exempt from CEQA review. Thereafter only information regarding offsets, or information to clarify, correct or otherwise supplement the information submitted in the application may be requested.

(Adopted 12/ 21/04; Amended 6/19/06)

2-1-500 MONITORING AND RECORDS

2-1-501 Monitors: Continuous emission monitors required pursuant to Section 2-1-403 shall comply with the provisions of Volume V of the Manual of Procedures.

(Adopted March 17, 1982)

2-1-502 **Burden of Proof:** Any person asserting that a source is exempt from the requirements of Regulation 2, Rule 1, Section 301 and/or 302, shall, upon the request of the APCO, provide substantial credible evidence proving to the APCO that the source meets all requirements necessary to qualify for the exemption.

(Adopted May 17, 2000)

2-1-600 MANUAL OF PROCEDURES

2-1-601 **Engineering Permitting Procedures:** The specific procedures for the engineering evaluation of particular types of sources as well as specific fixed standards and objective measurements upon which the District will rely in its evaluation of ministerial permit applications are set forth in the District's Permit Handbook and BACT/TBACT Workbook.

(Adopted 7/17/91; Amended 10/7/98)

2-1-602 **CEQA Guidelines:** The District's Guidelines for Environmental Processes under CEQA for those cases in which the District assumes the role of Lead Agency are set forth in Volume VII to the District's Manual of Procedures and in the Permit Handbook.

(Adopted 11/20/91; Amended 6/7/95)

2-1-603 **Particulate Matter Measurements:** $PM_{2.5}$ and PM_{10} shall be measured as prescribed in EPA Methods 201A and 202 (for measurements of emissions from specific sources) and in 40 C.F.R. Parts 50, 53 and 58 (for measurements of ambient concentrations). If such test methods cannot be used because the physical characteristics of the emissions being measured render such methods inappropriate (e.g., because of the emissions' high moisture content or high temperature), then another appropriate test method may be used upon prior written approval of the APCO and EPA.

(Adopted December 19, 2012)

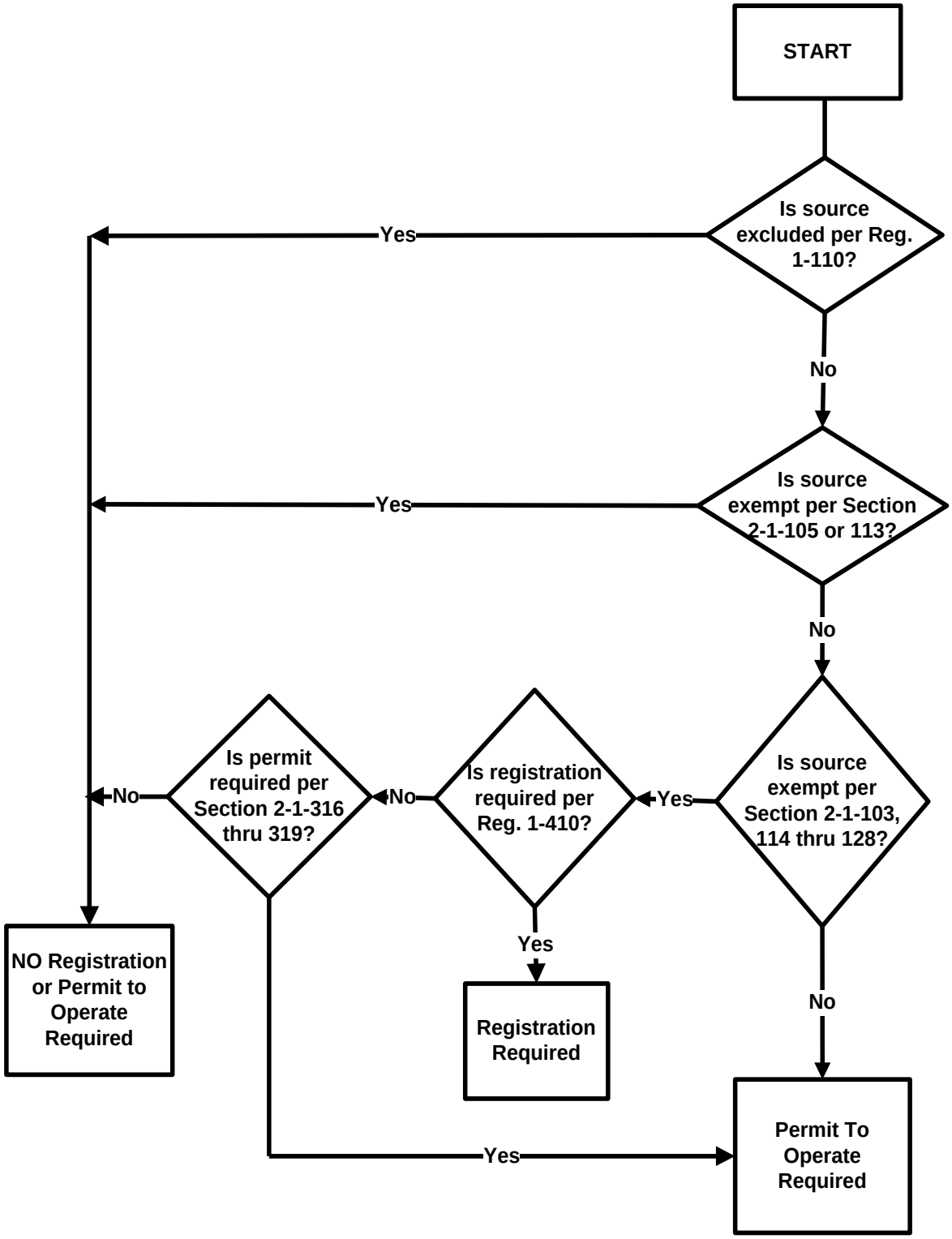
2-1-604 **Determining Compliance With Historical PM_{10} and $PM_{2.5}$ Emission Limits:** For purposes of determining a source's compliance with any PM_{10} or $PM_{2.5}$ emission limit established as a permit condition pursuant to Regulation 2 prior to August 31, 2016, the condensable portion of the source's PM_{10} or $PM_{2.5}$ emissions shall not be included, unless there is an affirmative indication that such condensable portion was intended to be included at the time the permit condition was adopted.

(Adopted December 19, 2012)

2-1-605 **Finality of Historical PM_{10} and $PM_{2.5}$ Regulatory Determinations:** Regulatory determinations regarding the applicability of or compliance with any of the requirements of Regulation 2 made before August 31, 2016, shall be final and shall not be invalid because they did not take into account the condensable portion of a source's $PM_{2.5}$ or PM_{10} emissions. Such historical determinations include (but are not limited to) prior determinations whether BACT and offsets requirements apply, prior determinations of the amount of a facility's cumulative increase, and prior determinations whether Title V permit requirements applied to a facility's operation. All such determinations made on or after August 31, 2016, shall include the condensable portion per the requirements of Sections 2-1-229 and 2-1-241, including (but not limited to) determinations regarding whether an existing facility's ongoing operations are subject to any applicable operating requirements such as Title V Major Facility Review requirements.

(Adopted December 19, 2012)

Regulation 2, Rule 1
Permit / Exemption Flow Chart



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REGULATION 2
PERMITS
RULE 2
NEW SOURCE REVIEW

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2-2-608 Facility Un-Offset Cumulative Increase Calculation Procedures

REGULATION 2
PERMITS
RULE 2
NEW SOURCE REVIEW

(Adopted December 19, 2012)

2-2-100 GENERAL

2-2-101 Description: This Rule applies to all new and modified sources that are subject to the requirements of Section 2-1-301 and/or 2-1-302. The purpose of this Rule is to implement the New Source Review provisions of the federal and California Clean Air Acts (including the federal non-attainment New Source Review, Prevention of Significant Deterioration, and Minor New Source Review provisions) and the no-net-increase requirements of the California Health and Safety Code, among other requirements.

2-2-102 Exemption, Emissions From Operation of Abatement Devices And Techniques: The BACT requirements of Section 2-2-301 shall not apply to emissions of secondary pollutants that are the direct result of the use of an abatement device or emission reduction technique implemented to comply with the BACT or BARCT requirements for control of another pollutant. However, the APCO shall require the use of Reasonably Available Control Technology (RACT) for control of emissions of such pollutants.

2-2-103 Incorporation by Reference of Federal PSD Provisions: Where federal PSD provisions in 40 C.F.R. Section 52.21 are incorporated by reference in this Rule, all associated procedures, definitions, and other regulatory provisions in the Code of Federal Regulations applicable for implementing such provisions are also incorporated by reference and shall be followed and applied by the APCO in implementing such provisions, including but not limited to all of the implementing definitions set forth in 40 C.F.R. Section 52.21(b), which include the definitions in Sections 52.21(b)(13) (baseline concentration), 52.21(b)(14) (major source baseline date), 52.21(b)(15) (baseline area), 52.21(b)(18) (secondary emissions), and 52.21(b)(50) (subject to regulation). Where such regulatory provisions are incorporated by reference, the incorporation is to the version of that regulatory provision in effect upon December 19, 2012.

2-2-200 DEFINITIONS

2-2-201 ~~**Adjustment to Emission Reductions for Federal Purposes**: An adjustment made, for purposes of the equivalence demonstration in 2-2-412, to an emission reduction due to changes in federal requirements between issuance of a banking certificate and its use. The adjustment is made as if the source providing the offsets were in operation, at the original baseline levels, on the date of credit use.~~ [Deleted _____, 2017]

2-2-202 Best Available Control Technology (BACT): An emission limitation, control device, or control technique applied at a source that is the most stringent of:

202.1 The most effective emission control device or technique that has been successfully utilized for the type of equipment comprising such a source; or

202.2 The most stringent emission limitation achieved by an emission control device or technique for the type of equipment comprising such a source; or

202.3 The most effective control device or technique or most stringent emission limitation that the APCO has determined to be technologically feasible for a source, taking into consideration cost-effectiveness, any ancillary health and environmental impacts, and energy requirements; or

202.4 The most effective emission control limitation for the type of equipment comprising such a source that is contained in an approved implementation plan of any state, unless the applicant demonstrates to the satisfaction of the APCO that such limitation is not achievable.

Under no circumstances shall BACT be less stringent than any emission control required by any applicable provision of federal, state or District laws, rules or regulations.

2-2-203 **Best Available Retrofit Control Technology (BARCT):** An emission limitation that has been adopted or proposed to be adopted as part of the current Clean Air Plan approved by the District pursuant to the California Clean Air Act of 1988 as implementing the maximum degree of emissions reduction achievable by a class or category of source, taking into account environmental, energy and economic impacts.

2-2-204 **California Coastal Waters:** The area bounded by (i) the coast of the State of California and (ii) the line established by starting at the point on the California coast at the California-Oregon border, and proceeding:

thence to 40.0°N, 125.5°W;
thence to 39.0°N, 125.5°W;
thence to 38.0°N, 124.0°W;
thence to 37.0°N, 123.5°W;
thence to 36.0°N, 122.5°W;
thence to 35.0°N, 121.5°W;
thence to 34.0°N, 120.5°W;
thence to 33.0°N, 119.5°W;
thence to 32.5°N, 118.5°W;

and thence to an ending point on the California coast at the California-Mexico border.

2-2-205 **Class I Area:** Point Reyes National Seashore and any other area designated as a Class I Area under Part C of the Clean Air Act. All other areas in the District are Class II Areas.

2-2-206 **Contemporaneous:** Occurring (i) within a five year period of time immediately prior to the date of a complete application for an authority to construct or permit to operate for a source; or (ii) on or after the date of a complete application for an authority to construct or permit to operate but prior to initial operation of the source (or for a source that is a replacement unit, as defined in 40 C.F.R. Section 51.165(a)(1)(xxi), that will replace an existing source in whole or in part, with respect to emission reduction credits being generated by the shutdown of the existing source being replaced, 90 days after initial operation of the replacement unit).

2-2-207 **Creditable:** For purposes of determining the net emissions increase associated with a new or modified source (or group of sources) under Section 2-2-220, an emission

increase or decrease is creditable if it has not been relied on by a permitting agency in issuing a PSD permit, including a federal PSD permit or an authority to construct applying the PSD provisions of Sections 2-2-304 through 2-2-307, which permit is still in effect at the time of initial operation of the source(s).

2-2-208 **Cumulative Increase:** The increase in the potential to emit a pollutant authorized by an authority to construct or permit to operate measured against prior actual or potential emissions, less any contemporaneous onsite emission reduction credits credited to the authority to construct or permit to operate, calculated in accordance with the procedures set forth in Section 2-2-607.

2-2-209 **Cumulative Increase Baseline Date:** April 5, 1991, for all pollutants except $PM_{2.5}$; and August 31, 2016, for $PM_{2.5}$.

2-2-210 **District BACT Pollutant:** Precursor organic compounds (POC), non-precursor organic compounds (NPOC), oxides of nitrogen (NOx), sulfur dioxide (SO_2), PM_{10}, $PM_{2.5}$, and carbon monoxide (CO).

2-2-211 **Emission Reduction Credit:** Emission reductions associated with a physical change, change in method of operation, change in throughput or production, or other similar change at a source that are in excess of the reductions required by applicable regulatory requirements, and that are real, permanent, quantifiable, and enforceable, as calculated in accordance with Section 2-2-605.

2-2-212 **Federal Land Manager:** With respect to any lands in the United States, the Secretary of the department with authority over such lands, or a subordinate acting under the authority of such Secretary.

2-2-213 ~~Fully Offset Source: A source with an emission cap or emission rate contained in a permit condition for which the permit applicant provided offsets and/or contemporaneous on-site emission reduction credits for the entire amount of the emission cap or emission rate. A source for which the District provided offsets from the Small Facility Banking Account is not a fully offset source (except where the District has been fully reimbursed for any offsets from the Small Facility Banking Account).~~[Deleted _____ 2017]

2-2-214 **Greenhouse Gases (GHGs)**: The air pollutant that is defined in 40 C.F.R. Section 86.1818-12(a), which is a single air pollutant made up of a combination of the following six constituents: carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. GHG emissions shall be measured ~~(i) based on total mass for purposes of determining whether a facility exceeds the 100/250 ton major PSD facility thresholds under Section 2-2-224.1; and (ii)~~ as CO_2 equivalent emissions (CO_2e) according to the methodology set forth in 40 C.F.R. Section 52.21(b)(49)(ii) for determining whether the emissions constitute a PSD pollutant as defined in Section 2-2-223, are a regulated NSR pollutant~~s~~ as defined in 40 C.F.R. Section 52.21(b)(50), or constitute significant emissions as defined in Section 2-2-227.1.

2-2-215 **Hazardous Air Pollutant (HAP):** Any pollutant that is listed pursuant to Section 112(b) of the federal Clean Air Act.

2-2-216 **Indian Governing Body:** The governing body of any tribe, band, or group of Indians subject to the jurisdiction of the United States and recognized by the United States as possessing power of self-government.

2-2-217 **Major Facility:** For purposes of the New Source Review requirements of Regulation 2, Rule 2, a major facility is a facility that has the potential to emit 100 tons per year or more of POC, NOx, SO_2, PM_{10}, $PM_{2.5}$, and/or CO. Fugitive emissions shall be

included in calculating the facility's potential to emit under this Section ~~if and only if the facility is in one of the 28 categories listed in Section 169(1) of the Clean Air Act~~as provided in Section 2-2-611. A physical change at a facility that does not otherwise qualify as a major facility is a new major facility if the change would constitute a major facility by itself.

2-2-218 **Major Modification*:** A new source as defined in Section 2-1-232, or a modified source as defined in Section 2-1-234, or any combination of such new and modified sources at a facility that are part of a single common project, that (i) are or will be located at an existing major facility and (ii) will cause an increase in emissions of a pollutant for which the facility is a major facility, calculated according to Section 2-2-604, of the following amounts or more:

POC:	40 tons per year
NOx:	40 tons per year
SO_2:	40 tons per year
PM_{10}:	15 tons per year
$PM_{2.5}$:	10 tons per year
CO:	100 tons per year

**Note that the term "Major Modification" is not used in Regulation 2, Rule 2 for purposes of applying the Rule's PSD requirements. The term "PSD Project" is used instead to define new facilities and modifications to existing facilities that are subject to the Rule's PSD requirements. See Section 2-2-224.*

2-2-219 **Net Air Quality Benefit:** A net improvement of air quality as determined by the APCO resulting from emission reduction credits impacting the same general area affected by the new or modified source and which will be consistent with reasonable further progress towards the attainment of the applicable air quality standard.

2-2-220 **Net Emissions Increase:** For purposes of applying the PSD provisions and NAAQS Protection requirements of this Rule, a net emissions increase from a new source or modified source (or group of such sources) is the sum of the new emissions from the new source(s) and/or the increase in emissions from the modified source(s), plus any other creditable contemporaneous emissions increases at the facility calculated according to Section 2-2-604, less any other creditable contemporaneous emissions decreases at the facility calculated according to Section 2-2-604.

2-2-221 **Offsets:** Offsets are any of the following:

221.1 banked emission reduction credits approved in accordance with District Regulation 2, Rule 4; or

221.2 banked emission reduction credits from adjacent Districts if the applicant demonstrates that the requirements of Clean Air Act Section 173(c)(1) (42 U.S.C. Section 7503(c)(1)) and Health and Safety Code Section 40709.6 have been met or do not apply;

that are provided to compensate for cumulative increases in emissions pursuant to Section 2-2-302 or 2-2-303.

2-2-222 **Pollutant-Specific Basis**: A term used to describe a regulatory requirement governing multiple pollutants. If a regulatory requirement applies on a pollutant-specific basis, the requirement applies only for the individual pollutant(s) for which a source or facility meets the relevant applicability criteria, and does not apply for pollutant(s) for which the source or facility does not meet the relevant applicability criteria.

2-2-223 **PSD Pollutant**: Any Regulated NSR Pollutant as defined in EPA's PSD Regulations at 40 C.F.R. Section 52.21(b)(50), except pollutants for which the San Francisco Bay

Area has been designated as non-attainment of a California or National Ambient Air Quality Standard. If a pollutant is subject to both federal and California ambient air quality standards, the pollutant shall be treated as a PSD Pollutant for (and only for) the ambient air quality standard(s) for which the San Francisco Bay Area has not been designated as non-attainment.

2-2-224 **PSD Project**: A new source as defined in Section 2-1-232, or a modified source as defined in Section 2-1-234, or a combination of such new or modified sources that are part of a single common project, that meets all of the following criteria:

224.1 Major PSD Facility: The source(s) are or will be located at a facility that has the potential to emit 100 tons or more per year of any ~~PSD pollutant~~Regulated NSR Pollutant as defined in 40 C.F.R. Section 52.21(b)(50)* (including fugitive emissions) if it is in one of the 28 categories listed in Section 169(1) of the Clean Air Act, or 250 tons or more per year of any Regulated NSR Pollutant as defined in 40 C.F.R. Section 52.21(b)(50)~~PSD Pollutant~~* (with fugitive emissions included only as specified in Section 2-2-611~~not including fugitive emissions~~) if it is not in a listed category; and

224.2 Significant Increase in Emissions of PSD Pollutant: ~~–~~The new emissions from the new source(s) and/or the increase in emissions from the modified source(s) calculated according to Section 2-2-604 constitute significant emissions of any PSD pollutant as defined in Section 2-2-227.1; and

224.3 Significant Net Increase in Emissions of PSD Pollutant: The net emissions increase associated with the new or modified source(s), as defined in Section 2-2-220, constitute significant emissions of any PSD pollutant as defined in Section 2-2-227.1.

Any physical change or change in method of operation that takes place at a facility that does not meet the Major PSD Facility criteria specified in subsection 224.1, but which change would constitute a Major PSD Facility under the criteria in subsection 224.1 by itself, is a PSD Project.

**Note that GHG emissions are not included for purposes of applying the 100/250 ton-per-year major PSD facility threshold in Section 2-2-224.1. GHGs are not a Regulated NSR Pollutant under 40 C.F.R. § 52.21(b)(50)~~, and therefore not a PSD Pollutant under Section 2-2-223,~~ unless they are emitted from a facility that exceeds the 100/250 ton-per-year major PSD threshold for some other pollutant besides GHGs. ~~Thus, for a facility to satisfy the major PSD facility test in Section 2-2-224.1, it must have emissions of some other Regulated NSR Pollutant besides GHGs that exceed the 100/250 ton-per-year threshold. For such facilities, GHG emissions are Regulated NSR Pollutants if there is an increase in emissions of 75,000 tons per year CO_2e or more. See Section 2-2-223; see also 40 C.F.R. § 52.21(b)(50)(iv) and 40 C.F.R. § 52.21(b)(49)(iv).~~*

2-2-225 **Reasonably Available Control Technology (RACT):** For sources that are to continue operating, RACT is the lowest emission limit that can be achieved by the specific source by the application of control technology taking into account technological feasibility and cost-effectiveness, and the specific design features or extent of necessary modifications to the source. For sources which are or will be shut-down, RACT is the lowest emission limit that can be achieved by the application of control technology to similar, but not necessarily identical categories of sources, taking into account technological feasibility and cost-effectiveness of the application of the control technology to the category of sources only and not to the shut-down source.

2-2-226 **Related Sources**: Two or more sources where the operation of one is dependent upon, supports or affects the operation of the other(s).

2-2-227 **Significant**: The term "significant" has the following meanings when used in the following contexts:

227.1 For determining whether an increase in emissions of a PSD pollutant is "significant" for purposes of the PSD provisions of this Rule, the increase is significant:

1.1 if it exceeds the values specified in the following table, or for a PSD pollutant that is not listed in the following table, if it is greater than zero; or

1.2 if it is from a source that is or would be located within 10 kilometers of a Class I area, and it would have an impact in such Class I area equal to or greater than 1 $\mu g/m^3$ (24-hour average).

227.2 For determining whether an increase in emissions is "significant" for purposes of the NAAQS Protection Requirement in Section 2-2-308 and the public notice requirement in Section 2-2-404, the increase is significant if it exceeds the values specified in the following table.

Pollutant	Significant Emissions Rate	
	kg/yr	(ton/yr)
Carbon monoxide	90,500	(100)
Nitrogen oxides	36,200	(40)
Sulfur dioxide	36,200	(40)
Total particulate matter	22,680	(25)
PM_{10}	13,575	(15)
$PM_{2.5}$*	9050	(10)
VOC*	36,200	(40)
GHGs**	67,875,000**	(75,000**)
Lead	530	(0.6)
Fluorides	2720	(3)
Sulfuric Acid Mist	6350	(7)
Hydrogen Sulfide	9050	(10)
Total Reduced Sulfur	9050	(10)
Reduced Sulfur Compounds	9050	(10)
Municipal waste combustor organics	3.2×10^{-3}	(3.5×10^{-6})
Municipal waste combustor metals	13,575	(15)
Municipal waste combustor acid gases	36,200	(40)
Municipal solid waste landfill emissions	45,250	(50)

**Pollutants for which the Bay Area is designated as non-attainment of a NAAQS are not subject to the PSD requirements in Sections 2-2-304 through 2-2-307 by operation of 40 C.F.R. Section 52.21(i)(2). $PM_{2.5}$ and VOC (as an ozone precursor) are therefore not subject to these PSD requirements as long as the Bay Area remains non-attainment for any $PM_{2.5}$ or ozone NAAQS, respectively.*

***Per Section 2-2-214, emissions of GHGs are measured as CO_2e for purposes of determining whether an emissions increase exceeds this significance threshold. Per Section 2-2-223 and 40 C.F.R. Sections 52.21(b)(50)(iv) and 52.21(b)(49)(iv)~~&(v)~~, increases in GHG emissions of less than 75,000 tons per year CO_2e are excluded from the definition of PSD pollutant and are not subject to the PSD requirements of Regulation 2, Rule 2.*

2-2-228 Federal Major NSR Source: A new major stationary source as defined in 40 C.F.R. section 51.165(a)(1)(iv), or a major modification as defined in 40 C.F.R. section 51.165(a)(1)(v).

2-2-229 Federal Offsets Baseline Shortfall: For purposes of the offsets equivalence demonstration provisions in Sections 2-2-412 and 2-2-415, the difference between:

229.1 The amount of offsets required for the Authority to Construct and/or Permit to Operate using the District's baseline calculation procedures under District Regulation 2, Rule 2; and

229.2 The amount of offsets that would be required under the federal baseline calculation procedures applicable under 40 C.F.R. section 51.165, including (but not limited to) the actual emissions baseline provision in 40 C.F.R. section 51.165(a)(3)(ii)(J).

A Federal Offsets Baseline Shortfall shall apply only in cases where (i) the amount of offsets required for the Authority to Construct and/or Permit to Operate is calculated using the baseline provision in Section 2-2-606.2 for modified sources for which offsets have previously been provided, and (ii) all of the previously-provided offsets were provided more than five years before the completeness date of the application for the Authority to Construct and/or Permit to Operate.

2-2-230 Federal Surplus-at-Time-of-Use Shortfall: For purposes of the offsets equivalence demonstration provisions in Sections 2-2-412 and 2-2-415, the difference between:

230.1 The amount of emission reduction credit provided in banking certificates surrendered in connection with an Authority to Construct and/or Permit to Operate in order to satisfy offsets requirements under Sections 2-2-302 and/or 2-2-303; and

230.2 The amount of emission reduction credit that would be associated with the emission reductions for which the banking certificates were issued if the emission reduction credit calculation for each emission reduction under Sections 2-2-605 and 2-2-603 is performed using an adjusted baseline emissions rate pursuant to subsection 2-2-603.6 that is based on the most stringent of any of the following regulations that is in effect at the time the banking certificate is surrendered for use as an offset: (i) any District regulation required for purposes of federal attainment demonstration requirements, (ii) any District regulation, or state regulation applicable to sources within the District, approved into the California State Implementation Plan, or (iii) any federal New Source Performance Standard or National Emission Standard for Hazardous Air Pollutants.

2-2-231 Equivalence Credit: For purposes of making the offsets equivalence demonstration pursuant to Section 2-2-412, emission reductions generated after November 15, 1990, that are any of the following:

231.1 Offsets: Emission reductions reflected in banking certificates from the District's emissions bank (or from an adjacent air district's bank pursuant to Section 2-2-221.2 or an earlier version of that provision governing the use of banked credits from an adjacent district) that were provided as offsets in

connection with an Authority to Construct and/or Permit to Operate issued for a new source or modification that was not a Federal Major NSR Source.

231.2 Onsite Contemporaneous Emission Reduction Credits: Onsite contemporaneous emission reduction credits that were credited pursuant to Section 2-2-607.2 (or an earlier version of that provision governing the use of onsite contemporaneous emission reduction credits) in calculating the amount of offsets required in connection with an Authority to Construct and/or Permit to Operate issued for a new source or modification that was not a Federal Major NSR Source, provided that the emission reductions have not been used to net out of major NSR applicability under Section 2-1-234.2.1.

231.3 Orphan $PM_{2.5}$ Emission Reductions: For $PM_{2.5}$, emission reductions that (i) occurred more than 5 years before the date of the equivalence demonstration, (ii) satisfy the requirements to be real, permanent, quantifiable, and enforceable sufficient to constitute Emission Reduction Credits under the definition set forth in Section 2-2-211, and (iii) have not been the subject of a request to bank the reductions in a banking application submitted under Regulation 2, Rule 4, or a request to use the reductions as a contemporaneous onsite emission reduction credits in connection with a New Source Review permit application under Regulation 2, Rule 2.

An emission reduction can qualify as an Equivalence Credit only if sufficient records exist to verify that the reduction meets the definition of an Equivalence Credit.

2-2-300 STANDARDS

2-2-301 Best Available Control Technology Requirement: An authority to construct and/or permit to operate for a new or modified source shall require BACT to control emissions of District BACT pollutants under the following conditions:

301.1 New Source: An authority to construct and/or permit to operate for a new source shall require BACT to control emissions of a District BACT pollutant if the source will have the potential to emit that pollutant in an amount of 10.0 or more pounds on any day as defined in Regulation 2-1-217;

301.2 Modified Source: An authority to construct and/or permit to operate for a modified source shall require BACT to control emissions of each District BACT pollutant for which the source is “modified” as defined in Section 2-1-234 for which:

2.1 the source, after the modification, will have the potential to emit that pollutant in an amount of 10.0 or more pounds on any day as defined in Regulation 2-1-217; and

2.2 the modification will result in an increase in emissions of that pollutant above baseline levels calculated pursuant to Section 2-2-604.

The BACT requirements in this Section shall apply on a pollutant-specific basis.

2-2-302 Offset Requirements, Precursor Organic Compounds and Nitrogen Oxides: Before the APCO may issue an authority to construct or permit to operate for a new or modified source at any facility that will have the potential to emit more than 10 tons per year of NOx or POC after the new or modified source is constructed (including emissions from cargo carriers per Section 2-2-610), offsets must be provided according to the following requirements:

302.1 If the facility will have the potential to emit more than 10 tons per year but less than 35 tons per year of NOx or POC after the new or modified source is constructed, offsets must be provided at a 1:1 ratio for any un-offset cumulative increase in emissions at the facility and any related sources since the baseline date determined in accordance with Section 2-2-608.

1.1 The APCO shall provide any required offsets from the Small Facility Banking Account in the District's Emissions Bank in accordance with Section 2-4-414, unless the Small Facility Banking Account is exhausted or the applicant (or any entity controlling, controlled by, or under common control with the applicant) owns or controls offsets.

1.2 If the Small Facility Banking Account is exhausted, or if the applicant owns or controls offsets, the applicant shall provide any required offsets.

1.3 A permit limit for which offsets have been provided from the Small Facility Banking account may not be higher than the source's maximum physical/design capacity to emit air pollutants, and may not be higher than is reasonably necessary to satisfy the applicant's operational requirements (including sufficient flexibility to allow for future changes in operational requirements).

302.2 If the facility will have the potential to emit 35 tons per year or more of NOx or POC after the new or modified source is constructed, the applicant shall:

2.1 Reimburse the Small Facility Banking Account for any cumulative increase for which offsets were previously provided from the Small Facility Banking Account; and

2.2 Provide federally-enforceable offsets at a 1.15:1 ratio for any un-offset cumulative increase in emissions at the facility and any related sources since the baseline date determined in accordance with Section 2-2-608.

302.3 An applicant may reimburse the Small Facility Banking Account under subsection 302.2.1 by reducing the cumulative increase associated with the permitting action(s) for which the District provided the Small Facility Banking Account credits. To do so, the applicant must request a lower emissions limit in a permit for which the Small Facility Banking Account credits were provided. Upon approval by the APCO, the amount by which the applicant must reimburse the Small Facility Banking Account shall be reduced by the difference between the old permit limit and the new permit limit.

302.4 The offset requirements in this Section shall be applied on a pollutant-specific basis.

2-2-303 Offset Requirements, $PM_{2.5}$, PM_{10} and Sulfur Dioxide: Before the APCO may issue an authority to construct or permit to operate for a new of modified source at a facility that will have the potential to emit 100 tons per year or more of $PM_{2.5}$, PM_{10} or sulfur dioxide after the new or modified source is constructed (including emissions from cargo carriers per Section 2-2-610), the applicant shall provide offsets according to the following requirements:

303.1 If the un-offset cumulative increase in emissions of $PM_{2.5}$, PM_{10} or sulfur dioxide at the facility and any related sources since the baseline date determined in accordance with Section 2-2-608 exceeds 1 ton per year, the applicant shall provide offsets at a 1:1 ratio for the un-offset cumulative increase since the baseline date.

303.2 NOx and/or sulfur dioxide offsets may be provided in place of PM_{10} offsets required under subsection 303.1 at offset ratios determined by the APCO to result in a net air quality benefit. Any approval of the use of NOx and/or sulfur dioxide offsets under this subsection shall be based on an analysis specific to the individual facility for which the determination is made, which shall include adequate modeling; and any such approval shall be granted only after public notice and an opportunity for public comment and with EPA concurrence.

303.3 Any NOx and/or sulfur dioxide offsets provided in place of PM_{10} offsets must be provided in addition to any NOx and/or sulfur dioxide offsets required independently as a result of the source's NOx and/or sulfur dioxide emissions.

303.4 The offset requirements in this Section shall be applied on a pollutant-specific basis.

2-2-304 PSD BACT Requirement: An authority to construct for a PSD Project shall require federal PSD Best Available Control Technology as defined in Section 169(3) of the federal Clean Air Act ("federal PSD BACT") for each PSD pollutant for which the net increase in emissions from the PSD Project will be significant as defined in Section 2-2-227.1. If federal PSD BACT is required for a pollutant under this Section, the authority to construct shall require federal PSD BACT for each new or modified source for which there will be an increase in emissions of that pollutant by any amount, calculated in accordance with Section 2-2-604. The APCO shall impose federal PSD BACT in an authority to construct subject to this Section according to and in satisfaction of all of the requirements applicable to federal PSD BACT under 40 C.F.R. Section 52.21(j), including any applicable exemptions from that Section's requirements under 40 C.F.R. Section 52.21(i).

2-2-305 PSD Source Impact Analysis Requirement: The APCO shall not issue an authority to construct for a PSD Project unless the APCO determines, for each PSD pollutant for which the net increase in emissions from the PSD Project will be significant as defined in Section 2-2-227.1, that the net increase in emissions from the PSD Project will not cause or contribute to a violation of (i) any applicable ambient air quality standard for such pollutant or (ii) any applicable PSD increment for such pollutant, as set forth in 40 C.F.R. Section 52.21(c). The APCO shall make such determination in accordance with the following procedures:

305.1 Pre-application Air Quality Analysis: The applicant shall prepare and submit an analysis of ambient air quality in the area that the PSD Project would affect for each PSD pollutant for which the net increase in emissions allowed by the authority to construct will be significant. The applicant's analysis shall be prepared according to and shall satisfy all of the requirements applicable to air quality analyses for federal PSD permitting under 40 C.F.R. Section 52.21(m)(1), including any applicable exemptions from that Section's requirements under 40 C.F.R. Section 52.21(i).

305.2 PSD Source Impact Analysis: The applicant shall demonstrate, for each PSD pollutant for which the net increase in emissions allowed by the authority to construct will be significant, that the net increase in emissions of such pollutant will not cause or contribute to a violation of (i) any applicable California or National Ambient Air Quality Standard for such pollutant or (ii) any applicable PSD increment for such pollutant, as set forth in 40 C.F.R. Section 52.21(c). The applicant's analysis and demonstration shall be

prepared according to and shall satisfy all of the requirements applicable to PSD source impact analyses for federal PSD permitting under 40 C.F.R. Section 52.21(k), including any applicable exemptions from that Section's requirements under 40 C.F.R. Section 52.21(i).

305.3 Air Quality Models: All estimates of ambient concentrations required under this Section shall be based on applicable air quality models, databases, and other requirements specified in Appendix W of Part 51 of Title 40 of the Code of Federal Regulations (Guideline on Air Quality Models). Where an air quality model specified in Appendix W is inappropriate, the model may be modified or another model substituted upon written approval by EPA and written approval by the APCO after public notice and opportunity for public comment under the procedures set forth in Section 2-2-404. Where modeling is conducted solely to evaluate compliance with a California air quality standard, any APCO-approved model may be used.

305.4 APCO Determination: The APCO shall determine, based on the applicant's submissions and any other relevant information, whether any net emissions increases of PSD pollutants that the authority to construct will authorize in significant amounts would cause or contribute to a violation of (i) any applicable California or National Ambient Air Quality Standard for such pollutant or (ii) any applicable PSD increment for such pollutant, as set forth in 40 C.F.R. Section 52.21(c), for any PSD pollutant. In making this determination, the APCO shall use the same procedures and be subject to the same requirements as are applicable to the Administrator for issuing federal PSD permitting under 40 C.F.R. Section 52.21(k), including any applicable exemptions that Section's requirements under 40 C.F.R. Section 52.21(i).

2-2-306 PSD Additional Impacts Analysis Requirements: Before issuing an authority to construct for a PSD Project, the APCO shall conduct the following additional impact analyses:

306.1 Visibility, Soils & Vegetation Impact Analysis: The applicant shall prepare and submit an analysis of the impairment to visibility, soils and vegetation that would occur as a result of the PSD Project and any commercial, residential, industrial, and other growth associated with the PSD Project. The applicant's analysis shall be prepared according to and shall satisfy all of the requirements applicable to air quality analyses for federal PSD permitting under 40 C.F.R. Section 52.21(o)(1), including any applicable exemptions that Section's requirements under 40 C.F.R. Section 52.21(i). The analysis need not address impacts on vegetation having no significant commercial or recreational value.

306.2 Associated Growth Analysis: The applicant shall prepare and submit an analysis of the air quality impact projected for the area as a result of general commercial, residential, industrial, and other growth associated with the PSD Project. The applicant's analysis shall be prepared according to and shall satisfy all of the requirements applicable to air quality analyses for federal PSD permitting under 40 C.F.R. Section 52.21(o)(2), including any applicable exemptions that Section's requirements under 40 C.F.R. Section 52.21(i).

306.3 APCO Review: The APCO shall review the applicant's additional impact analyses to ensure that they are complete and accurately reflect the circumstances associated with the PSD Project.

2-2-307 Consideration of Class I Area Impacts: If, within 30 days after receiving notice under Section 2-2-404 of a preliminary decision to issue an authority to construct for (i) a new major facility or a major modification of a major facility for NOx, VOC, SO_2 or $PM_{2.5}$ or (ii) a PSD Project, the Federal Land Manager with responsibility for administering any Class I Area provides the APCO with a demonstration that emissions from the project would have an adverse impact on the air quality-related values of the Class I Area (including visibility), the APCO shall promptly review and consider such demonstration. If the APCO concurs with such demonstration, or if the APCO concludes based on an independent review of the analysis submitted under Section 401.4 that the project will have such adverse impact, the APCO shall, after consultation with the Federal Land Manager and the applicant, deny the application for an authority to construct. If the APCO finds that such demonstration does not establish to the APCO's satisfaction that the project would have such adverse impact, the APCO shall explain its decision (or give notice of where such explanation can be obtained) in any subsequent notice of a public hearing held under Section 2-2-404.7.

2-2-308 NAAQS Protection Requirement: The APCO shall not issue an authority to construct for a new or modified source that will result in a significant net increase in emissions of any pollutant for which a National Ambient Air Quality Standard has been established unless the APCO determines, based upon a demonstration submitted by the applicant, that such increase will not cause or contribute to an exceedance of any National Ambient Air Quality Standard for that pollutant. Such demonstration shall be made using the procedures for PSD Air Quality Impact Analyses set forth in subsections 2-2-305.1 through 2-2-305.4. Such demonstration shall not be required for ozone. A PSD Air Quality Impact Analysis and determination for a new or modified source that satisfies the requirements of Section 2-2-305 shall satisfy the requirements of this Section for all pollutants included in such analysis.

2-2-309 Compliance Certification: The APCO shall not issue an authority to construct for a new major facility or a major modification of an existing major facility unless the applicant provides a list, certified under penalty of perjury, of all major facilities within the state of California owned or operated by the applicant or by any entity controlling, controlled by, or under common control with the applicant and demonstrates by certifying under penalty of perjury that they are either in compliance, or on a schedule of compliance, with all applicable state and federal emission limitations and standards. The APCO may request the applicant to provide any technical information used by the applicant to certify compliance.

2-2-310 Denial, Failure to Meet Permit Conditions: The APCO shall deny a permit to operate for a source if, after providing written notification to the applicant and an opportunity to remedy any violation, the source is operating in violation of any condition specified in the authority to construct, or if any other source used to provide emission reduction credits for the source that is owned or operated by the applicant is operating in violation of any permit condition limiting emissions such that the required emission reduction credits are not actually being provided.

2-2-400 ADMINISTRATIVE REQUIREMENTS

2-2-401 **Application:** An application for an authority to construct under this Rule shall conform to the requirements of District Regulation 2-1-402, and shall include the following:

401.1 A detailed description of the proposed new source(s) or modification(s) for which the authority to construct is sought, including at a minimum (i) a description of the nature, location, design capacity, and typical operating schedule of the source(s) or modification(s), including specifications and drawings showing its design and plant layout, and (ii) a detailed schedule for construction of the source(s) or modification(s).

401.2 All information necessary for the APCO to determine whether the application satisfies the requirements of this Rule, including but not limited to (i) a demonstration of how the application satisfies applicable BACT standards under Sections 2-2-301 and 2-2-304, and (ii) the PSD analyses and demonstrations required under Sections 2-2-305 and 2-2-306, if applicable.

401.3 CEQA-related information required under Section 2-1-426; and for a new major facility, and for a modification to a major facility that will increase emissions by more than 100 tons per year of carbon monoxide, 40 tons per year of precursor organic compounds, nitrogen oxides, or sulfur dioxide, or 10 tons per year of $PM_{2.5}$, an analysis of alternative sites, sizes, production processes, and environmental control techniques for such proposed source that demonstrates that benefits of the proposed source significantly outweigh the environmental and social costs imposed as a result of its location, construction or modification.

401.4 If the application is for (i) a new major facility or a major modification of major facility for NOx, VOC, SO_2 or $PM_{2.5}$ or (ii) a PSD Project, and the project may have an impact on air quality related values (including visibility) within any Class I area(s)~~will be located in or within 100 km of a Class I area~~, the application shall include an analysis of potential impacts to air quality related values (including visibility) in such Class I area(s) for review and consideration by the Federal Land Manager of such Class I area(s). The determination of whether a project may have an impact on air quality related values (including visibility) within a Class I Area shall be made according to the guidelines adopted by the Federal Land Managers' Air Quality Related Values Work Group in its Phase I Report—Revised (2010), Natural Resource Report NPS/NRPC/NRR—2010/232.

401.5 Any other information requested by the APCO.

2-2-402 **Notice to EPA and Federal Land Manager of Receipt of Permit Applications:** When the APCO receives a complete application for an Authority to Construct for a PSD Project, the APCO shall transmit a copy of the complete application to EPA Region IX. If the APCO receives a complete application for ~~(i) a new major facility or a major modification of a major facility for NOx, VOC, SO_2 or $PM_{2.5}$ or (ii) a PSD Project, and the project is located within 100 km of any Class I Area(s)~~a project that requires an analysis of any Class I area impacts under Section 2-2-401.4, the APCO shall transmit a copy of the complete application to the Federal Land Manager(s) with responsibility for ~~any such~~the Class I Area(s) involved within 30 days of receipt and at least 60 days prior to holding any public hearing on such application, and shall include the applicant's analysis of the anticipated impacts on air quality related values (including visibility) ~~visibility~~ in such Class I area(s). In addition, the APCO

shall also notify such Federal Land Manager(s) if the APCO receives any advance notification of any such application.

2-2-403 **Authority to Construct, Preliminary Decision:** If an application for an Authority to Construct is subject to the public notice and comment requirements of Section 2-2-404, the APCO shall make a preliminary decision as to whether an authority to construct shall be approved, or denied. The APCO shall make such preliminary decision within 90 days following the acceptance of the application as complete, provided that any fees required in accordance with Regulation 3 are paid; or within a longer time period if necessary to complete any PSD impact analyses required under Sections 2-2-305 and 2-2-306, if necessary to complete any CEQA analyses if the District is the CEQA Lead Agency, or if consented to by the applicant.

2-2-404 **Publication of Notice and Opportunity for Public Comment:** If the application is for (i) a new major facility or a major modification of an existing major facility, (ii) any new facility, or a modification of any existing facility, that will involve an increase in emissions of CO, NOx, SO_2, PM_{10}, $PM_{2.5}$, VOC, or lead, calculated in accordance with Section 2-2-604, in an amount that is significant as defined in Section 2-2-227.2, or (iii) a PSD Project, the APCO shall provide notice of the preliminary decision made under Section 2-2-403 according to the following procedures:

404.1 The APCO shall publish a notice stating the preliminary decision of the APCO and inviting written public comment on it. The notice shall state the location of the information available pursuant to Section 2-2-405, the procedures and deadlines for submitting written public comments, and the opportunity for requesting a public hearing pursuant to subsection 404.7.

404.2 If the application is for a PSD Project, the notice shall also state the degree of PSD increment consumed if a PSD increment consumption analysis has been conducted.

404.3 The APCO shall publish the notice prominently on the District's internet website in a manner that will provide the public with routine and ready access; and if the application is for a new major facility or a major modification of an existing major facility, or for a PSD Project, the APCO shall also publish the notice prominently in at least one newspaper of general circulation within the District.

404.4. The APCO shall transmit a copy of the notice to ARB; EPA Region IX; adjacent air districts; the chief executive(s) of the city and county where the facility is located; the California State Lands Commission; any Indian Governing Body whose lands may be affected by the new or modified source(s) that is the subject of the notice; any person who requests such specific notification in writing; and, if the application is for a project that requires an analysis of any Class I area impacts under Section 2-2-401.4~~is for a PSD Project located within 100 km of any Class I Area(s)~~, the Federal Land Manager(s) with responsibility for ~~any such~~the Class I Area(s) involved.

404.5 If the District is the CEQA Lead Agency with respect to the application, the APCO shall also ensure that the applicable CEQA notice and comment requirements are followed with respect to any CEQA document.

404.6 The APCO shall provide a period of at least 30 days following publication of the notice required under this Section for members of the public to submit written comments, and may extend the public comment period for good cause.

404.7 The APCO may elect to hold a public meeting to receive written and verbal comments from the public during the public comment period if the APCO finds that a public meeting is warranted and would substantially enhance public participation in the decision-making process. If the APCO elects to hold a public meeting, the APCO shall provide at least 30 days public notice of such meeting in the same manner as is required for the notice of preliminary decision, and the public comment period under Section 2-2-404.6 shall be extended, at a minimum, until the end of the public meeting.

2-2-405 Public Inspection: If an application for an Authority to Construct is subject to the public notice and comment requirements of Section 2-2-404, the APCO shall make available for public inspection, at District headquarters, the information submitted by the applicant, the APCO's preliminary decision to grant or deny the authority to construct including any proposed conditions and the reasons therefore, and any other relevant information on which the APCO's preliminary decision is based. Any such information shall also be transmitted, upon request, to ARB and EPA Region IX. In making information available for public inspection, the APCO shall consider any claims by the applicant regarding the confidentiality of trade secrets, as designated by the applicant prior to submission, in accordance with Section 6254.7 of the California Government Code.

2-2-406 Authority to Construct, Final Action: If an application for an Authority to Construct is subject to the public notice and comment requirements of Section 2-2-404, the APCO shall consider all public comments received and shall take final action on the application: (i) within 60 days after the close of the public comment period, or within 30 days after final approval of a CEQA Negative Declaration or Environmental Impact Report for the project (if applicable), whichever is later; and (ii) if the application is for a PSD Project, no later than one year after receipt of the complete application (unless a longer period is necessary and is consented to by the applicant). At the time of such final action, the APCO shall:

406.1 Prepare and make publicly available a written response to any public comments received explaining how the APCO has considered such comments in making a final decision; and

406.2 Provide written notice of the final decision to the applicant, ARB, EPA Region IX, any person who submitted comments during the public comment period or requested written notice of the final action, and, if the District is a Lead Agency under CEQA, in accordance with all applicable CEQA public notice and comment requirements.

2-2-407 Issuance, Permit to Operate: Before issuing a permit to operate for a source subject to the requirements of this Rule, the APCO shall ensure that the following requirements have been met:

407.1 The APCO shall ensure that all conditions specified in the authority to construct have been and are being complied with, or in the case of conditions with a future compliance date, that such conditions are reasonably expected to be complied with by the applicable compliance date.

407.2 If the permit is for a source for which the applicant complied with the offset provisions of Sections 2-2-302 or 2-2-303 with emission reduction credits generated after the application date:

2.1 The APCO shall ensure that such emission reduction credits took effect or will take effect no later than initial operation of the source (or, for a source that is a replacement unit, as defined in 40 C.F.R.

Section 51.165(a)(1)(xxi), that will replace an existing source in whole or in part, with respect to emission reduction credits being generated by the shutdown of the existing source being replaced, no later than 90 days after initial operation of the replacement unit); and

2.2 The APCO shall ensure that such emission reduction credits shall be maintained throughout the operation of the source.

2-2-408 Permit to Operate, Final Action: The APCO shall take final action to approve, approve with conditions, or disapprove a permit to operate a source subject to this Rule within 90 days after start-up of the new or modified source, unless such time period is extended with the written concurrence of the applicant.

2-2-409 Source Obligation, Relaxation of Enforceable Conditions: At such time as the applicability of any requirement of this Rule would be triggered by an existing source or facility, solely by virtue of a relaxation of any enforceable limitation on the capacity of the source or facility to emit a pollutant, then the requirements of this Rule shall apply to the source or facility in the same way as they would apply to a new or modified source or facility otherwise subject to this Rule.

2-2-410 Permit Conditions: The APCO may include any permit condition in an authority to construct or permit to operate that the APCO determines is necessary to ensure compliance with this Rule, including but not limited to conditions controlling the operation of the source, of its abatement equipment, or of sources used to generate emission reduction credits to comply with Sections 2-2-302 or 2-2-303. Such conditions may have a future effective date and may be made conditional on the results of source tests, ground level monitors or public complaints.

2-2-411 Offset Refunds: The APCO may refund offsets provided for an authority to construct or permit to operate, and waive any associated banking fees, under the following circumstances:

411.1 Where an applicant has provided offsets in excess of those required for an authority to construct or permit to operate, the APCO shall upon request of the applicant refund the difference between the amount of offsets provided and the amount of offsets required, as long as such request is made within 2 years of issuance of the authority to construct or within 6 months of issuance of the permit to operate.

411.2 Whenever a source for which the owner or operator has provided offsets is not constructed (or is constructed but never operated), and the authority to construct ~~or permit to operate~~ for the source has expired or has been surrendered by the applicant, the APCO shall upon request of the applicant refund the offsets provided in connection with the authority to construct ~~or permit to operate~~, as long as such request is made within 2 years of issuance or renewal of the authority to construct.

2-2-412 Demonstration of NOx, ~~and~~ POC and $PM_{2.5}$ Offset Program Equivalence: By March 1 of each year, or by a later date approved by EPA, the ~~District~~ APCO shall prepare and submit to EPA, and publish prominently on the District's website, an analysis demonstrating that the District's New Source Review program has obtained at least as many NOx, ~~and~~ POC and $PM_{2.5}$ offsets in total as would have been required under the federal offsets provisions set forth in 40 C.F.R. section 51.165 for the Federal Major NSR Sources (as defined in Section 2-2-228) permitted by the District during the previous calendar year. The demonstration shall be based on the following information:

412.1 Calculation of Offsets Shortfall for Each Federal Major NSR Source: The APCO shall calculate the offsets shortfall for each Federal Major NSR Source permitted during the previous calendar year, which shall be the sum of the Federal Offsets Baseline Shortfall as defined in Section 2-2-229 (if any) and the Federal Surplus-at-Time-of-Use Shortfall as defined in Section 2-2-230 (if any).

412.2 Calculation of Total Offsets Shortfall for All Federal Major NSR Sources: The APCO shall sum the offsets shortfalls calculated pursuant to subsection 412.1 (if any) for all for all Federal Major NSR Sources permitted during the previous calendar year to obtain the total offsets shortfall for the year.

412.3 Identification of Equivalence Credits Sufficient to Cover Total Offsets Shortfall: The APCO shall identify Equivalence Credits sufficient to equal or exceed the amount of the total offsets shortfall calculated pursuant to subsection 412.2 (if any), subject to the following requirements.

3.1 The APCO shall not include any Equivalence Credits that were relied on in a prior equivalence demonstration for an earlier year.

3.2 All Equivalence Credits used in the equivalence demonstration must be adjusted to reflect any (i) District regulation required for purposes of federal attainment demonstration requirements, (ii) District requirement, or a state requirement applicable to sources within the District, approved into the California State Implementation Plan, or (iii) federal New Source Performance Standard or Maximum Achievable Control Technology Standard, that is adopted or promulgated between the date the Equivalence Credit was generated and the date it is used for purposes of the equivalence demonstration. The APCO shall make such adjustments in accordance with an EPA-approved surplus-at-time-of-use adjustment methodology.

~~provided for all new and modified sources within the District, less adjustments to those offsets for federal purposes occurring between credit generation and use, exceed federal offset requirements for new major sources or major modifications at major stationary sources. Adjustment to emission reductions for federal purposes will be required if any of the following occur between the time the credit is generated and the time the credit is used:~~

~~412.1 BAAQMD adopts a relevant measure or rule that is required for purposes of federal attainment demonstration requirements.~~

~~412.2 A relevant rule or measure is approved into the State Implementation Plan applicable in the BAAQMD;~~

~~412.3 EPA promulgates a relevant final rulemaking for either a New Source Performance Standard or a Maximum Achievable Control Technology Standard.~~

~~The demonstration shall include:~~

~~412.4 Emission increases represented by all authorities to construct new major facilities and major modifications at major facilities issued during the three calendar years preceding the demonstration date;~~

~~412.5 A list of all emission reductions used to offset those emission increases;~~

~~412.6 The emission baselines that were used to calculate the emission reduction;~~

~~412.7 The source type, size and category that had generated the emission reduction credit;~~

~~412.8 All relevant rules that have been adopted or promulgated since the emission reduction had occurred.~~

~~412.9 Adjustments to emission reduction for federal purposes for all affected projects.~~

~~412.10 All of the above for as many non-major projects as are needed to demonstrate equivalence.~~

~~If the analysis fails to make the required demonstration, the District shall provide sufficient offsets to make up the difference out of the Small Facility Banking Account. If the Small Facility Banking Account does not contain the necessary surplus emission reductions, the District shall obtain the necessary surplus emission reductions.~~

2-2-413 **No Net Increase Status Report:** The APCO shall publish, in conjunction with the triennial update of the Clean Air Plan (CAP), a report demonstrating that the District's permitting program complies with the no-net-increase requirements of Section 40919(b) of the Health and Safety Code. This report shall demonstrate that sufficient offsets have been provided, as required by Section 2-2-302, for all permits issued during the previous three year CAP period. This report shall be forwarded to the California Air Resources Board, Stationary Source Division, for approval.

2-2-414 **BACT Workbook:** The APCO shall publish and periodically update a BACT Workbook specifying the BACT requirements for commonly permitted sources. BACT will be determined for a source on a case-by-case basis, using the workbook as a guidance document, as the most effective control device or technique or most stringent emission limitation that meets the requirements of Section 2-2-202.

2-2-415 **Additional Offset Requirements Where District Has Not Demonstrated NOx, POC or $PM_{2.5}$ Offset Program Equivalence:** If the APCO has not submitted the equivalence demonstration required by Section 2-2-412 by March 1 (or other EPA-approved date), the APCO shall require additional offsets for any subsequent Authority to Construct and/or Permit to Operate for a Federal Major NSR Source sufficient to make up for (i) any Federal Offsets Baseline Shortfall calculated pursuant to Section 2-2-229 and (ii) any Federal Surplus-at-Time-of-Use Shortfall calculated pursuant to Section 2-2-230. The APCO shall not issue an Authority to Construct or Permit to Operate for any Federal Major NSR Source unless the applicant has provided sufficient additional offset credits to make up for the shortfalls identified in the preceding sentence for that particular Authority to Construct or Permit to Operate. The APCO shall continue to require additional offsets sufficient to make up for such shortfalls for all Authorities to Construct and Permits to Operate for Federal Major NSR Sources issued after March 1 (or other EPA-approved date) until such time as the District has made the required equivalence demonstration for every year since 2017. The requirement to provide additional offsets under this Section shall apply on a pollutant-specific basis for each pollutant for which the APCO has not made the required equivalence demonstration.

2-2-500 **MONITORING AND RECORDS**

2-2-501 **Post-Construction Monitoring:** The APCO may require as a condition in an authority to construct that the owner or operator of a facility for which the authority to construct is issued must conduct such ambient air quality monitoring as the APCO determines is necessary to determine the effect that emissions from the facility may have, or are having, on air quality in the area.

2-2-600 MANUAL OF PROCEDURES

2-2-601 Ambient Air Quality Monitoring: Ambient air quality monitoring required pursuant to this Rule shall be conducted in accordance with the methods prescribed in the Manual of Procedures, Volume VI., and 40 C.F.R. Part 58, Appendix B.

2-2-602 Good Engineering Practice (GEP) Stack Height: Stack heights beyond what is consistent with good engineering practices shall not be allowed for purposes of air quality modeling undertaken as part of any air quality analysis prepared in connection with an application for an authority to construct as required by Sections 2-2-305 through 2-2-308. This requirement does not limit the actual height of a stack, as long as good engineering practice stack heights are used in any such modeling analyses. Good engineering practice stack height shall be determined according to 40 C.F.R. Section 52.100(ii) and EPA's *Guideline for Determining Good Engineering Practice Stack Height*, EPA Publication No. EPA-450/4-80-023R (June 1985).

2-2-603 Baseline Emissions Calculation Procedures: The following methodology shall be used to determine a source's baseline emissions for purposes of calculating an emissions increase or decrease from a source under Sections 2-2-604.2, 2-2-605.2~~1~~, and 2-2-606.3:

603.1 Determine Baseline Period Ending Date: The date on which the baseline period ends is determined as follows:

1.1 For determining the amount of an emissions increase from a new or modified source, the baseline period ends on the date on which the application for authority to construct/permit to operate the new or modified source is determined to be complete.

1.2 For determining the amount of a contemporaneous emissions increase under Section 2-2-220 for a physical change or change in the method of operation of a source that was not a modification of the source, the baseline period ends on the date the change was first implemented at the source.

1.3 For determining the amount of a contemporaneous onsite emission reduction credit or a contemporaneous emissions decrease under Section 2-2-220, the baseline period ends on the date on which the emission reduction becomes enforceable.

1.4 For determining the amount of an emission reduction credit for which a banking certificate is sought under Regulation 2, Rule 4, the baseline period ends the date on which the banking application is determined to be complete.

603.2 Determine Baseline Period: The baseline period is determined as follows:

2.1 For all pollutants other than greenhouse gases, the baseline period is the three-year period immediately preceding the baseline period ending date established under subsection 603.1.

2.2. For greenhouse gases, the baseline period is determined as follows:

2.2.1 For a new source, the baseline period is a period with zero throughput and emissions. For such sources, baseline emissions and adjusted baseline emissions are zero for all purposes under Section 2-2-603.

2.2.2 For an existing source that first operated less than 24 months before the date on which the application for authority to construct/permit to operate is determined to be complete,

the baseline period is a period with maximum potential throughput and emissions. For such sources, baseline emissions and adjusted baseline emissions are the source's pre-existing potential to emit for all purposes under Section 2-2-603.

2.2.3 For a modification to an existing electric utility steam generating unit as defined in 40 C.F.R. Section 51.166(b)(30) that has operated for 24 months or more prior to the date of application, the baseline period is any period of 24 consecutive months selected by the applicant within the 5-year period immediately preceding the baseline period ending date established under subsection 603.1, or other such time period that the APCO determines is more representative of normal source operation. For evaluating emissions from multiple sources, the same 24-month baseline period shall be used for all sources.

2.2.4 For a modification to any existing source other than an electric utility steam generating unit as defined in 40 C.F.R. Section 51.166(b)(30) that has operated for 24 months or more prior to the date of application, the baseline period is any period of 24 consecutive months selected by the applicant within the 10-year period immediately preceding baseline period ending date established under subsection 603.1. For evaluating emissions from multiple sources, the same 24-month baseline period shall be used for all sources.

603.3 Determine Baseline Throughput: Baseline throughput is the lesser of: (i) the actual average annual throughput during the baseline period; or (ii) the average permitted annual throughput during the baseline period, if limited by permit condition. If the applicant does not have sufficient verifiable records of the source's operation to substantiate its throughput during any portion(s) of the baseline period, the applicant is not entitled to credit for throughput during any such portion(s). Throughput shall be based on the source's operational parameter that correlates most closely to the source's emissions.

603.4 Determine Baseline Emissions: Baseline emissions are the actual average annual emissions during the baseline period (excluding any emissions that exceed any regulatory or permit limits). If the applicant does not have sufficient verifiable records of the source's operation to substantiate the emission rate during any portion(s) of the baseline period, the applicant is not entitled to credit for emissions during any such portion(s).

603.5 Determine Baseline Emissions Rate: The baseline emission rate is the emission rate per unit of throughput during the baseline period, calculated by dividing the source's baseline emissions by its baseline throughput.

603.6 Determine Adjusted Baseline Emissions Rate: The adjusted baseline emission rate shall be determined by adjusting the baseline emission rate downward, if necessary, to reflect the most stringent of RACT, BARCT, and applicable federal and District rules and regulations in effect or contained in the most recently adopted Clean Air Plan; except that for purposes of determining whether a source or group of sources constitutes a PSD Project

under Section 2-2-224, the adjusted baseline emission rate shall not be adjusted downward to a greater extent than required under the provisions of 40 C.F.R. Sections 51.166(b)(47)(i)(b) and 51.166(b)(47)(ii)(b) & (c).

603.7 Determine Adjusted Baseline Emissions: The adjusted baseline emissions is the adjusted baseline emissions rate multiplied by the baseline throughput (except where otherwise specified under sections 2-2-603.2.2.1 or 2-2-603.2.2.2).

2-2-604 Emission Increase/Decrease Calculation Procedures, New Sources and Changes at Existing Sources: The amount of any emissions increase (or decrease) associated with a new source, or with a physical change, change in the method of operation, change in throughput or production, or other similar change at an existing source, shall be calculated according to the following procedures:

604.1 New Source: The emissions increase associated with a new source is the source's potential to emit.

604.2 Change to Existing Source: The emissions increase (or decrease) associated with a physical change, change in the method of operation, change in throughput or production, or other similar change at an existing source (including a permanent shutdown of the source) shall be calculated as the difference between: (i) the source's potential to emit after the change; and (ii) the source's adjusted baseline emissions before the change, calculated in accordance with Section 2-2-603.

2-2-605 Emission Reduction Credit Calculation Procedures: The amount of emission reduction credits associated with a physical change, change in method of operation, change in throughput or production, or other similar change at a source shall be calculated according to the following procedures:

605.1 Eligibility for Credit: To qualify as emission reduction credits, the emission reductions associated with any such change: (i) must be enforceable through permit conditions; through relinquishment of the source's permit; through physical removal of the source such that reinstallation would require a new permit under Regulation 2; or in the case of source shutdown where no permit is required for the source being shut down, through an alternative legally-enforceable mechanism; and (ii) must be real, permanent, quantifiable, and in excess of any reductions required by applicable regulatory requirements. Emissions that were offset with credits from the Small Facility Banking Account cannot be used to generate emission reduction credits.~~Non-Fully-Offset Source: For a source that is not fully offset as defined in Section 2-2-213, the amount of emission reduction credits is the difference between: (i) the source's adjusted baseline emissions before the change calculated pursuant to Section 2-2-603; and (ii) the source's potential to emit after the change.~~

605.2 ~~Fully-Offset Source~~Calculating Amount of Credit: ~~-~~The amount of emission reduction credit associated with such a change shall be calculated as the difference between: (i) the source's adjusted baseline emissions before the change calculated pursuant to Section 2-2-603; and (ii) the source's potential to emit after the change.~~For a source that is fully offset as defined in Section 2-2-213, the amount of emission reduction credits is the difference between: (i) the source's potential to emit before the change, adjusted downward, if necessary, to reflect the most stringent of RACT, BARCT, and applicable federal and District rules and regulations in effect or contained in the most

~~recently adopted Clean Air Plan; and (ii) the source's potential to emit after the change.~~

~~To qualify as emission reduction credits, the emission reductions associated with any such change: (i) must be enforceable through permit conditions; through relinquishment of the source's permit; through physical removal of the source such that reinstallation would require a new permit under Regulation 2; or in the case of source shutdown where no permit is required for the source being shut down, through an alternative legally enforceable mechanism; and (ii) must be real, permanent, quantifiable, and in excess of any reductions required by applicable regulatory requirements. Emissions that were offset with credits from the Small Facility Banking Account cannot be used to generate emission reduction credits.~~

2-2-606 Potential-to-Emit (PTE) Increase Calculation Procedures for Purposes of Determining Cumulative Increase: For purposes of calculating cumulative increase under Section 2-2-607, the increase in a source's potential to emit associated with an authority to construct and/or permit to operate for the source shall be calculated according to the following procedures:

606.1 New Source: For a new source, the increase in potential to emit is the source's full potential to emit.

606.2 Modified Source – Offsets Previously Provided: For a modified source, if offsets have previously been provided for the source's emissions, then the increase in potential to emit associated with the modification is the difference between:

2.1 the source's potential to emit after the modification; and

2.2 the source's potential to emit before the modification, adjusted downward, if necessary, to reflect the most stringent of RACT, BARCT, and applicable federal and District rules and regulations in effect or contained in the most recently adopted Clean Air Plan

606.3 Modified Source – Offsets Not Yet Provided: For a modified source, if offsets have not previously been provided for the source's emissions, then the increase in potential to emit associated with the modification is the difference between:

3.1 the source's potential to emit after the modification; and

3.2 the source's adjusted baseline emissions before the modification calculated in accordance with Section 2-2-603.

For purposes of calculating the cumulative increase associated with a source, the source's emissions shall include emissions from cargo carriers (other than motor vehicles) associated with the source as specified in Section 2-2-610.

2-2-607 Cumulative Increase Calculation Procedures: The cumulative increase in emissions associated with an authority to construct and/or permit to operate for a source shall be calculated as:

607.1 Project Emissions Increase: the increase in potential to emit associated with the authority to construct/permit to operate determined in accordance with Section 2-2-606; minus

607.2 Contemporaneous Onsite Emission Reduction Credits: any contemporaneous onsite emission reduction credits at the facility calculated in accordance with Section 2-2-605 that are credited to the authority to construct/permit to operate.

The cumulative increase associated with an authority to construct/permit to operate issued in the past shall be determined using the increase in potential to emit and contemporaneous onsite emissions reductions credits calculated at the time of issuance of the authority to construct/permit to operate. Emission reduction credits may not be double-counted (*e.g.*, an emission reduction credit may not be applied to the cumulative increase calculation for more than one authority to construct/permit to operate).

2-2-608 Facility Un-Offset Cumulative Increase Calculation Procedures: For purposes of applying the emission offset provisions of Sections 2-2-302 and 2-2-303, a facility's un-offset cumulative increase in emissions since the baseline date shall be calculated using the following procedures:

608.1 Project Cumulative Increase: The cumulative increase from the project being permitted shall be determined in accordance with Section 2-2-607.

608.2 Prior Un-Offset Cumulative Increase: For each previous authority to construct/permit to operate issued for the facility, and for any related source as defined in Section 2-2-226, after the cumulative increase baseline date as specified in Section 2-2-209 (but excluding any authority to construct/permit to operate issued because a source lost its permit exemption per Section 2-1-424 and any authority to construct/permit to operate for a source that has been permanently removed from service), the un-offset cumulative increase shall be determined by:

2.1 Calculating the cumulative increase associated with each previous authority to construct/permit to operate issued for the facility, and for any related source as defined in Section 2-2-226, determined in accordance with Sections 2-2-607; and

2.2 Subtracting any offsets provided in connection with the authority to construct/permit to operate (including any offsets provided from the District's Small Facility Banking Account).

608.3 Facility Un-Offset Cumulative Increase: The facility's un-offset cumulative increase shall be determined by adding (i) the project cumulative increase calculated according to Section 2-2-608.1 and (ii) the un-offset cumulative increase from each previous authority to construct/permit to operate issued for the facility, and for any related source as defined in Section 2-2-226, after the cumulative increase baseline date as specified in Section 2-2-209 (but excluding any authority to construct/permit to operate issued because a source lost its permit exemption per Section 2-1-424 and any authority to construct/permit to operate for a source that has been permanently removed from service) calculated according to Section 2-2-608.2. Offsets shall be provided for the facility's un-offset cumulative increase multiplied by the applicable offset ratio specified in Section 2-2-302 and 2-2-303.

2-2-609 Official Record of Cumulative Increases and Offsets: The APCO may establish and maintain a database or other accounting document to record the cumulative increase (including project cumulative increase and associated emission reduction credits) and offsets associated with each authority to construct/permit to operate issued for a facility. In calculating the un-offset cumulative increase associated with a previous authority to construct/permit to operate under Section 2-2-608.2, the APCO may rely on the data specified in such document as conclusive, unless the APCO has information that indicates that some other data is more accurate.

Records of cumulative increase and offsets shall be updated as necessary to ensure that they are current and accurate.

2-2-610 **Facility Emissions Calculation Procedures, Cargo Carriers:** For purposes of applying the offset requirements of Sections 2-2-302 and 2-2-303, a facility's potential to emit and cumulative increase shall be calculated including emissions from cargo carriers (other than motor vehicles) associated with the sources at the facility. When applying these offset requirements, facilities that include cargo loading or unloading from cargo carriers other than motor vehicles shall include the cargo carriers as part of the source that receives or loads the cargo. Accordingly, all emissions from such cargo carriers while operating in the District, or within California Coastal Waters up to 11 nautical miles (12.66 statute miles) from the Golden Gate Bridge (and any additional areas of California Coastal Waters adjacent to the District if cargo carrier emissions in such areas would have a substantial impact on air quality within the District), shall be included as part of the source's emissions. Emissions from cargo carriers shall not be included for purposes of applying any other provisions of this Regulation, including the BACT and PSD requirements.

2-2-611 **Emission Calculation Procedures, Fugitive Emissions:** Any fugitive emissions from a source shall be included in calculating the source's emissions for all purposes under this Rule; except that for purposes of determining whether a facility's emissions exceed the 100/250 ton per year thresholds in Section 2-2-217 (for a "Major Facility") and Section 2-2-224.1 (the first element in the definition of "PSD Project"), fugitive emissions shall be included only if the facility is in one of the 28 categories listed in Section 169(1) of the Clean Air Act or is in any other stationary source category that was being regulated under section 111 or 112 of the Clean Air Act as of August 7, 1980.

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REGULATION 2
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(Adopted March 7, 1984)

2-4-100 GENERAL

2-4-101 Banking: The banking of emission reduction credits is intended to provide a mechanism for sources to obtain offsets under the New Source Review regulations contained in Regulation 2, Rule 2 of the District and is not intended to recognize any pre-existing vested right to emit air pollutants.

(Amended June 15, 1994)

2-4-200 DEFINITIONS

2-4-201 Emission Reduction Credit: As defined in Section 2-2-211.

(Amended 7/17/91; 6/15/94; 10/7/98; 12/19/12)

2-4-202 Deleted May 17, 2000

2-4-203 Bankable Pollutants: Emission reduction credits of the following pollutants may be deposited in the emissions bank: precursor organic compounds, non-precursor organic compounds, particulate matter, PM_{10}, $PM_{2.5}$, sulfur dioxide, nitrogen oxides, and carbon monoxide.

(Amended 7/17/91; 6/15/94; 12/19/12)

2-4-204 Reasonably Available Control Technology: As defined in Regulation 2-1-209.

(Amended July 17, 1991)

2-4-300 STANDARDS

2-4-301 Bankable Reductions: An applicant may bank emission reductions if and only if the APCO determines (i) that the reductions satisfy all of the criteria necessary to constitute Emission Reduction Credits as defined in Section 2-2-211, including but not limited to the requirements that the reductions are real, permanent, quantifiable, and enforceable, and are calculated in accordance with Section 2-2-605; and (ii) that banking the reductions is ~~All emission reduction credits as defined in Section 2-4-201~~ not prohibited by Section 2-4-303 ~~are bankable~~. The APCO may include a condition in an authority to construct involving reductions pursuant to subsections 2-4-301.1, 301.2, or 301.5, stating that the emission reduction shall be eligible for banking after being demonstrated by source test or other means acceptable to the APCO, including emission factors. Any regulatory change adopted 90 or more days after a complete application for an authority to construct shall not affect the potential for bank deposits resulting from reductions at sources covered by that authority to construct. The following are examples of bankable reductions:

301.1 Emission reduction credits resulting from the installation of a level of control greater than required by regulation are bankable, including installation of BACT where BACT is not required.

301.2 Emission reduction credits due to the installation of different processes or equipment which emit less than the previous process or equipment that performed the same function.

301.3 Emission reduction credits due to the effective operation and maintenance of abatement equipment if the applicant accepts a condition on the permit specifying a lower level of emissions than otherwise required by District regulations.

301.4 Emission reduction credits resulting from switching to a fuel which results in less emissions, provided the applicant agrees to a condition on the appropriate permit specifying the fuel to be used in the future.

301.5 Emission reduction credits of fugitive emissions if the reductions are quantified by source tests or other methods approved by the APCO.

301.6 Other emission reduction credits, such as 1) limitations on the type or quantity of fuel burned, 2) solvent recovery projects, and 3) limitations on throughput.

~~301.7 Emission reduction credits which would result from changes to specific limiting conditions in an authority to construct or permit to operate issued since March 7, 1979, provided that the emissions associated with those limiting conditions have been offset pursuant to the requirements of Regulations 2-2-302 or 303.~~

(Amended 7/17/91; 6/15/94; 12/19/12)

2-4-302 Bankable Reductions for Closures: Emission reduction credits not prohibited by Section 2-4-303 are bankable. The following restrictions apply:

302.1 Closure of sources, where the reduction is permanent at the source, but it is unclear whether the reduction will be replaced by an emissions increase elsewhere within the District, are bankable only if the applicant accepts a condition restricting use of the deposits to offsetting emission increases in the same or closely related industries. For example, the closure of public utility power generation facilities could be bankable if use is restricted to offsetting emission increases from other power generation facilities (including resource recovery and cogeneration facilities). Closure of petroleum or petroleum product storage tanks at refineries could be bankable if use is restricted to offsetting emission increases at other petroleum or petroleum products storage tanks, or to offset emission increases at the associated refinery.

302.2 Issuance of a Banking Certificate for emission reductions resulting from a closure cancels the permit to operate. The reduction shall be enforceable through a condition in the Banking Certificate and through enforcement of Regulation 2-1-302 pertaining to operating without a permit.

~~302.3 The permanency of closures shall be demonstrated through removal of the source from the District, rendering it inoperative, destruction of the source, or by inclusion of appropriate conditions in the Banking Certificate providing for automatic cancellation of the Banking Certificate if emissions resume and replacement by the applicant of the emission reduction credit if the deposit has been transferred or withdrawn.~~

(Amended 7/17/91; 6/15/94; 5/17/00)

2-4-303 Limitations on Deposits: The following cannot be banked:

303.1 Emission reduction credits achieved during periods in which a moratorium on banking deposits is in effect pursuant to Section 2-4-410. After removal of the moratorium, they may subsequently be banked. The period of the moratorium shall not be considered "normal operation" for the purpose of determining the bankable emissions.

303.2 Emission reductions from closure of sources where the demand for the services or product would merely shift to other sources in the District, with little or no decrease in emissions basin-wide.

2.1 The APCO may, at his or her discretion, require submittal of data to document that reductions from the closure of such types of operations will not result in such a shift, and could therefore be banked.

2.2 Only the net reduction (if any) shall be banked for shutdowns of manufacturing operations where the operation is being transferred elsewhere within the same stationary source or to a different stationary source owned by the applicant within the District.

303.3 Emission reductions due to the shutdown or closure of sources or the installation of controls on sources excluded from District regulations pursuant to Regulation 1-110 or exempt from permit requirements pursuant to Regulation 2-1.

303.4 Transfer of ownership of an emission source if the source remains operable and within the District.

303.5 Emission reductions at facilities belonging to companies which have received unreimbursed offsets from the Small Facility Emissions Bank. Once these

offsets have been reimbursed, the remaining emission reductions may be banked.

(Amended 7/17/91; 6/15/94; 10/7/98; 5/17/00)

2-4-304 Limitations on Use of Deposits: Emission reduction credits may not be used to:

304.1 Exempt a source from Best Available Control Technology (BACT) requirements contained in subsections 2-2-301.1 and 301.2 of Regulation 2.

304.2 Exempt a source from emission limitations established in Regulation 10 (New Source Performance Standards).

304.3 Exempt a source from any other air pollution control requirements whatsoever of Federal, State, or District laws, rules and regulations.

(Amended 7/17/91; 6/15/94)

2-4-305 Use of Withdrawals: Bank deposits may be withdrawn by the depositor or by any other person to whom they have been transferred by the depositor for use in meeting the requirements to obtain offsets specified in Rule 2 of this Regulation.

(Amended July 17, 1991)

2-4-400 ADMINISTRATIVE REQUIREMENTS

2-4-401 Banking Application: An application to deposit or re-evaluate an emission reduction in the emissions bank shall be submitted on forms specified by the APCO. No banking application shall be accepted from a stationary source for pollutants which are the subject of a variance, abatement order or other similar formal order, until compliance with the emission limitations which are the subject of the variance or order is achieved.

(Amended December 19, 2012)

2-4-402 Complete Banking Application: The APCO shall determine whether a banking application is complete not later than 30 calendar days following receipt of the application, or after a longer time period agreed upon in writing by both the applicant and the APCO. If the APCO determines that the application is not complete, the applicant shall be notified in writing of the decision, specifying the information that is required. The applicant shall have 90 days to submit the requested information. Upon receipt of all requested information, a new 30 day period to determine completeness shall be initiated. If, at the end of 90 days, no data is submitted or the application is still incomplete, the APCO may cancel the banking application with written notification to the applicant. Upon a determination that the application is complete, the APCO shall notify the applicant in writing. Thereafter, only information to clarify, correct, or otherwise supplement the information submitted in the application, may be requested. Withdrawal of a banking application by an applicant shall result in cancellation of the application; any re-submittal may be evaluated using a new application completion date.

(Amended 7/17/91; 6/15/94; 5/17/00)

2-4-403 Preliminary Decision: Within 60 days following the acceptance of a banking application as complete, which is not subject to the publication, public comment and inspection requirements of Section 2-4-405, or, with the consent of the applicant, such longer period as may be agreed upon, the APCO shall make a preliminary decision and notify the applicant in writing as to whether the APCO intends to approve, conditionally approve, or deny the application.

(Amended July 17, 1991)

2-4-404 Preliminary Decision, Major Deposits: Within 90 days following the acceptance of a banking application as complete, which is subject to the publication, public comment and inspection requirements of Section 2-4-405, or, with the consent of the applicant, such longer period as may be agreed upon, the APCO shall make a preliminary decision and notify the applicant in writing as to whether the APCO intends to approve, conditionally approve, or deny the application.

(Adopted July 17, 1991)

2-4-405 Publication, Public Comment and Inspection: Before approving the banking of any emission reduction in excess of 40 tons per year of any pollutant, the re-evaluation of PM_{10} emission reduction credits under Section 2-4-416 resulting in an increase of more than 40 tons per year or before declaring a moratorium on further banking of emission reductions, the APCO shall cause to be published in at least one newspaper of general

circulation within the District, and be sent to any individual submitting a written request to the APCO for notification, a notice stating the preliminary decision of the APCO to approve the banking of emission reductions or to declare a moratorium on further banking of emission reductions and inviting written public comment. The APCO shall make available for public inspection at District headquarters the information submitted by the applicant, the APCO's analysis, and the preliminary decision to grant or deny the banking application, including the reason therefore and any proposed conditions. The confidentiality of trade secrets shall be considered in accordance with Section 6254.7 of the Government Code. Such information shall also be transmitted to adjacent air pollution control districts, the California Air Resources Board, and the U.S. EPA.

(Renumbered, Amended 7/17/91; Amended 12/19/12)

2-4-406 **Public Meeting:** During the 30-day period following the date of publication, which may be extended by the APCO, the APCO may, based on the receipt of written comments, elect to hold a public meeting to receive oral and written comments from the public. After considering all such comments, the APCO shall, within 30 days of the close of the comment period, make a final decision concerning such banking.

(Renumbered July 17, 1991)

2-4-407 **Banking Certificate:** The APCO shall issue a banking certificate within 30 days of the issuance of the preliminary decision for an approved deposit not subject to Section 2-4-405, or within 30 days of the close of the public comment period if the banking application is approved. The certificate shall identify the owner of the certificate, the quantity of the emission reduction credits of each pollutant for deposit in the emissions bank in tons per year, the location of the facility at which the reduction was created, any conditions on use of the emission reduction credits, and any other data deemed appropriate by the APCO.

(Renumbered, Amended 7/17/91; Amended 6/15/94)

2-4-408 **Appeal to the Hearing Board, Banking:** Any person dissatisfied with the decision of the APCO regarding the approval or disapproval of an application for banking air contaminants may appeal that decision within 30 calendar days in accordance with the provisions of Regulation 2-1-410.

(Renumbered, Amended 7/17/91; Amended 5/17/00)

2-4-409 **Protection and Duration of Deposits:** Deposits are permanent until used by the depositor or any party to whom the depositor has transferred the deposit. Changes in offset ratios shall not apply to emission reduction credits already used. After issuance of the Banking Certificate confirming the deposit, subsequent changes in regulations to require the type of reduction banked shall not reduce or eliminate the deposit.

(Renumbered 7/17/91; Amended 6/15/94)

2-4-410 **Moratorium on Banked Emissions:** If the APCO determines that additional mandatory emission reductions will be necessary to attain an ambient air quality standard, the APCO may declare a full or partial moratorium on banking deposits of the applicable air contaminant, after opportunity for public comment as provided in Sections 2-4-405 and 406. Such a moratorium shall be lifted after the APCO determines that the Bay Area Air Quality Plan demonstrates attainment of such standards.

(Renumbered, Amended July 17, 1991)

2-4-411 **Banking Register:** The District shall maintain a “banking register”, which shall consist of a record of all deposits, deposit applications, withdrawals, and transactions. A summary of the data in the banking register shall be available to the public upon request and the District emission inventory shall explicitly include all outstanding deposits appearing in the summary as current existing emissions.

(Renumbered, Amended July 17, 1991)

2-4-412 **Withdrawal Procedures for Deposits:** The following are procedures to be used for the withdrawal of banked emission reduction credits:

412.1 Deposits shall be withdrawn in accordance with the offset ratios in effect at the time of withdrawal as specified in Regulations 2-2-302 and 303.

412.2 The owner of record shown in the District's banking register shall surrender the Banking Certificate in order to withdraw the banked emission reduction credit. If the entire deposit is used, the District shall retain the Certificate; if the

deposit is partially used, the District shall retain the old Certificate and issue a new Certificate identifying the remaining portion of the deposit.

412.3 If the deposit is transferred for later use, the owner of record shall submit the old Certificate signed by the owner of record and by the new owner; the District shall retain the old Certificate, issue a new Certificate in the name of the new owner for the amount transferred, and issue a new Certificate to the existing owner for any portion not transferred.

412.4 If the deposit is transferred for use in an application for an authority to construct which requires offsets, the owner of record shall submit the old Certificate signed by the owner of record and by the new owner; the District shall retain the old Certificate, issue a new Certificate to the owner of record for any portion of the deposit not transferred, and identify use of the deposit in the authority to construct issued to the user of the deposit. No Certificate shall be issued to the user.

412.5 For any transferred deposit, the creator of the deposit shall continue to have enforceable conditions in the appropriate permits to operate to assure permanency of the emission reduction and shall be held liable for compliance with those conditions; the user of any transferred bank deposit shall not be held liable for any failure of the creator to comply with District requirements.

(Renumbered, Amended 7/17/91; Amended 6/15/94)

2-4-413 Annual Report, Banking: The APCO shall provide an annual report to the Board of Directors on all banking transactions which have occurred during the preceding year.

(Renumbered July 17, 1991)

2-4-414 Small Facility Banking Account: The APCO may establish a small facility banking account and grant offsets. The APCO may fund the Small Facility Banking Account by deposit of unclaimed emission reductions resulting from source or facility closures, and by a small facility growth allowance established in the Clean Air Plan adopted by the District. In no event, may the APCO grant offsets in an amount that exceeds the amount contained in the Small Facility Banking Account. Allocation of credits shall conform to the requirements of Section 40919(a)(2) of the Health and Safety Code. If an applicant holds banked emission reduction credits, those credits must be used as a source of offsets prior to the APCO approving offsets from the small facility banking account (this includes bankable emission reduction credits held by other District facilities owned by the applicant). For the purposes of determining the amount of offsets granted by the APCO, any banked emission reduction credits that have been sold during the three years preceding a complete permit application shall be considered to be held by the applicant. Allocations from the small facility banking account cannot be transferred or banked by the recipient.

(Adopted 7/17/91; Amended 6/15/94; 10/7/98; 5/17/00; 12/21/04)

2-4-415 Military Base Closure Banking Account: The APCO shall establish a banking account for each military facility or base subject to termination of military operations. The APCO shall, in accordance with the provisions of this rule, bank the emission reduction credits for each military facility or base. The designated base reuse commission shall be entitled to the use of the banked emission reduction credits for projects within the jurisdiction of the base reuse commission, provided that the emission reduction credits have not been banked by the military facility or base.

(Adopted June 15, 1994)

2-4-416 Re-evaluating PM_{10} Emission Reduction Credits: The owner of PM_{10} banked emission reduction credits (ERCs) that were approved but not used prior to December 19, 2012 may request the District to re-evaluate those banked ERCs for the purpose of: converting PM_{10} to PM_{10} and $PM_{2.5}$; and/or including the condensable portion of PM_{10} that was not included in the original evaluation.

(Adopted December 19, 2012)

2-4-600 MANUAL OF PROCEDURES

2-4-601 Emission Calculation Procedures: The emission calculation procedures contained in Regulation 2-2-600 shall be applicable to this Rule.

(Amended July 17, 1991)

2-4-602 Calculation Procedure for Converting Filterable PM_{10} to Filterable $PM_{2.5}$: Existing PM_{10} emission reduction credits can be converted to $PM_{2.5}$ by multiplying the amount of PM_{10} by a District-approved conversion factor, based on the type of source that originally generated the PM_{10} credits. Acceptable conversion factors may include, but are not necessarily limited to the following:

602.1 For common source categories, the District will maintain a list of PM_{10} to $PM_{2.5}$ conversion factors in the Permit Handbook;

602.2 A comparison of AP-42 or other generally accepted emission factors for PM_{10} and $PM_{2.5}$;

602.3 Source specific emission test data comparing PM_{10} and $PM_{2.5}$ emission rates;

602.4 Emission test data comparing PM_{10} and $PM_{2.5}$ emission rates from a similar source.

(Adopted December 19, 2012)

2-4-603 Calculation Procedure for Including Condensable PM_{10} or $PM_{2.5}$: The adjustment to add condensable (back-half) particulate to an existing credit will be based on the following:

603.1 The applicant must demonstrate the original credits were based solely on filterable particulate;

603.2 The applicant must identify the ratio of filterable to condensable PM_{10} and provide supporting documentation;

603.3 The amount of condensable PM_{10} will be determined by multiplying the amount of original filterable PM_{10} by the ratio from section 2-4-603.2;

603.4 The condensable portion of PM_{10} will be reduced if necessary, based on data that indicates a lower filterable PM_{10} emission rate than was used in the original evaluation.

603.5 The original amount of filterable PM_{10} will not be adjusted.

(Adopted December 19, 2012)

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REGULATION 2
PERMITS
RULE 6
MAJOR FACILITY REVIEW

(Adopted November 3, 1993)

2-6-100 GENERAL

2-6-101 Description: The purpose of this rule is to implement the operating permit requirements of Title V of the federal Clean Air Act as amended in 1990. This rule shall apply to major facilities, Phase II acid rain facilities, subject solid waste incinerator facilities and any facility in a source category designated by the Administrator of the EPA in a rulemaking as requiring a Title V permit. This rule also provides a means by which facilities may avoid the Title V or other requirements by limiting their potential to emit. This rule shall not alter any other requirements of applicable federal, state, or District orders, rules or regulations, except for monitoring, recordkeeping, and reporting requirements that are subsumed using the permit shield. (Amended 10/20/99, 5/2/01)

2-6-110 Exemption, Asbestos: Any demolition or renovation of an asbestos-containing source that requires a permit solely because it is subject to Regulation 11, Rule 2, Asbestos Demolition, Renovation, and Manufacturing, is exempt from this regulation.

2-6-111 Exemption, Wood Heaters: Any wood heater that requires a permit solely because it is subject to Regulation 10, Subpart AAA, is exempt from this regulation.

2-6-112 Exemption, Motor Vehicles: Engines used to propel motor vehicles, as defined in the California Vehicle Code, are exempt from this regulation.

2-6-113 Exemption, Registered Portable Engines: Portable internal combustion engines, except gas turbines, that are registered in accordance with Health and Safety Code Section 41753 are exempt from this regulation.

(Adopted 10/20/99; Amended 4/16/03)

2-6-114 Exemption, Non-Road Engines: Engines as defined by 40 CFR Part 89 are exempt from this regulation. (Adopted 10/20/99)

2-6-200 DEFINITIONS

2-6-201 Administrative Permit Amendment: A non-substantive amendment to a major facility review permit. The following amendments are administrative amendments: changes in recordkeeping format that are not relaxations of applicable requirements, the correction of typographical errors, changes in permit format that are not alterations of applicable requirements, changes in source descriptions that are not alterations of applicable requirements, changes in the descriptions of applicable requirements that add detail but do not affect substantive requirements, deletion of requirements containing sunset dates that have passed, the identification of administrative changes at a facility (such as a replacement of the facility's responsible official or a change in ownership or operational control of the facility which involves no physical or operational changes to the facility), the deletion of sources, the approval of a District rule into the SIP, the imposition of more frequent emission monitoring requirements, and changes to applicable requirements and related monitoring that are not federally enforceable.

(Amended 10/20/99, 4/16/03)

2-6-202 Applicable Requirements: Air quality requirements with which a facility must comply pursuant to the District's regulations, codes of California statutory law, and the federal Clean Air Act, including all applicable requirements as defined in 40 CFR 70.2.

(Amended 10/20/99, 5/2/01)

2-6-203 **Clean Air Act:** The federal Clean Air Act, as amended in 1990, including the implementing regulations.

2-6-204 **Designated Facility:** Any facility, other than a major facility, phase II acid rain facility, or subject solid waste incinerator facility, as defined by this rule, that falls within a source category designated as subject to the requirements of Title V of the federal Clean Air Act by the EPA Administrator in a rulemaking. (Amended 10/20/99)

2-6-205 **Early Reduction Demonstration:** A 90% reduction in hazardous air pollutants or a 95% reduction in particulate hazardous air pollutants achieved pursuant to Section 112(i)(5) of the federal Clean Air Act.

2-6-206 **Facility:** As defined in Section 2-1-213.

(Amended 10/20/99, 5/2/01, 12/19/2012)

2-6-207 **Federally Enforceable:** As defined in Section 2-1-214.

(Amended 10/20/99, 5/2/0112/19/2012)

2-6-208 **Fossil Fuel:** Natural gas, petroleum, and coal, or any form of solid, liquid, or gaseous fuel derived from such materials for the purpose of creating useful heat.

2-6-209 **Fugitive Emissions:** All emissions from unintended openings in process equipment, emissions occurring from miscellaneous activities relating to the operation of a facility, and emissions that could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening.

2-6-210 **Hazardous Air Pollutant:** Any pollutant that is listed pursuant to Section 112(b) of the Clean Air Act.

2-6-211 **Independent Power-Production Facility:** A facility that generates electricity and fulfills the following conditions:

211.1 The facility must be nonrecourse project-financed as defined in 10 CFR 715;

211.2 The facility must sell 80 percent or more of its electrical output at wholesale;

211.3 Direct public utility ownership of the equipment must not exceed 50 percent; and

211.4 Deleted 5/2/01

211.5 The facility must be required to hold allowances under Title IV of the Clean Air Act. (Amended 5/2/01)

2-6-212 **Major Facility:** For the purposes of Regulation 2, Rule 6, a major facility is either of the following:

212.1 Major Facility (Regulated Air Pollutants): A facility that has the potential to emit 100 tons per year or more of any regulated air pollutant, as defined in Section 2-6-222~~*~~. For fugitive emissions of regulated air pollutants, only the fugitive emissions from facility categories listed in 40 CFR 70.2 "Definitions - Major source (2)" shall be included in determining whether the facility is a major facility. Once any facility is determined to be a major facility, all fugitive emissions from the facility shall be included in calculating the facility's emissions.

212.2 Major Facility (Hazardous Air Pollutants): A facility that has the potential to emit 10 tons per year or more of a single hazardous air pollutant, 25 tons per year or more of a combination of hazardous air pollutants, or such lesser quantity as the EPA Administrator may establish by rule. All fugitive emissions of hazardous air pollutants are included in determining a facility's potential to emit. For radionuclides, the definition of a major facility shall be specified by the EPA Administrator by rule.

~~*Note that GHG is a "regulated air pollutant" only if emitted from a facility in an amount of 100,000 tons per year or more of CO_2e. See Section 2-6-222.6. Thus, for a facility to be a major facility for GHG, it must emit (i) 100 tons per year CO2e or more on an absolute mass basis in order to be a "major" emitter, and (ii) 100,000 tons per year or more CO_2e in order to be a major emitter of a "regulated air pollutant".~~

(Amended 10/20/99, 12/19/2012)

2-6-213 **Major Facility Review (MFR):** Plantwide review of sources, emissions, and regulatory requirements at facilities including, but not limited to, major facilities, phase II acid rain facilities, subject solid waste incinerator facilities, and designated facilities, which are potentially subject to the permitting requirements of Regulation 2, Rule 6, and of Title V of the Clean Air Act.

2-6-214 **Major Facility Review Permit:** An operating permit issued to a major facility, phase II acid rain facility, subject solid waste incinerator facility, or designated facility, pursuant to the requirements of this rule.

2-6-215 **Minor Permit Revision:** Any revision to a federally enforceable condition in a major facility review permit that:

215.1 is not a significant permit revision; and

215.2 is not an administrative permit amendment.

215.3 Deleted 10/20/99 (Amended 10/20/99)

2-6-216 **Operating Scenarios:** All modes of facility operation to be permitted, including normal operating conditions, start-up, and shutdown. This shall include all planned or reasonably foreseeable process, feed, and product changes. Operating scenarios must meet all applicable requirements.

2-6-217 **Phase II Acid Rain Facility:** A facility that includes fossil-fueled combustion equipment that is used to generate electricity for sale, or is otherwise subject to 40 CFR 72, except for the following equipment:

217.1 A fossil-fueled combustion device built before November 15, 1990, and that did not, as of November 15, 1990, and does not currently, serve a generator with a nameplate capacity of greater than 25 MW;

217.2 A cogeneration facility with a fossil-fueled combustion device that sells less than 219,000 MW-hrs annually or less than one-third of its potential electric output capacity to any utility power distribution system;

217.3 A solid waste incinerator that burns fossil fuels for less than 20 percent (on a BTU basis) of the total energy input during any calendar year; or

217.4 A qualifying facility or an independent power production facility that meets both of the following conditions:

4.1 Possession as of November 15, 1990 of qualifying power purchase commitments to sell at least 15 percent of its total planned net output capacity; and

4.2 The net output capacity of the equipment cannot exceed 130 percent of the planned net output capacity.

217.5 Simple combustion turbines that commenced operation before November 15, 1990;

217.6 A fossil-fueled combustion device that, during 1985, and as of November 15, 1990, and currently, does not serve a generator that produced or produces electricity for sale; and

217.7 A fossil-fueled combustion device that commenced commercial operation on or after November 15, 1990, and serves a generator with a capacity not greater than 25 MW, burns fuel with a sulfur content that is less than 0.05 percent, and that complies with the requirements of 40 CFR 72.7.

217.8 A fossil-fueled combustion device that supplies only incidental electricity for sale and that complies with the requirements of 40 CFR 72.14.

217.9 A fossil-fueled combustion device that is permanently retired and that complies with the requirements of 40 CFR 72.8. (Amended 5/2/01)

2-6-218 **Potential to Emit:** As defined in Section 2-1-217. (Amended 10/20/99, 4/16/03)

2-6-219 **Preconstruction Permit or Review:** A review of construction plans prior to construction, including:

219.1 District evaluation of an application for an authority to construct issued pursuant to District Regulation 2, Rule 1;

219.2 District evaluation of an application for an authority to construct issued pursuant to District Regulation 2, Rule 2;

219.3 A preconstruction review to determine the ability of a proposed source or source modification to comply with applicable New Source Performance Standards pursuant to District Regulation 10;

219.4 A preconstruction review conducted prior to a significant modification to a major facility review permit for a physical or operational change that would be prohibited by an existing federally enforceable condition;

219.5 A preconstruction review conducted prior to a physical or operational change to a synthetic minor facility that would increase the facility's potential to emit

to above the threshold for a major facility. Such review must be associated with an application for a major facility review permit for said facility.

(Amended 10/20/99)

2-6-220 **Qualifying Facility:** One of two types of power-generating facilities pursuant to Title 16, Section 796, of the United States Code:

220.1 A cogeneration facility that is not owned by a public utility and is certified by the Federal Energy Regulatory Commission as a qualifying facility; or

220.2 A power production facility that is not owned by a public utility, has an output capacity not greater than 80 MW, uses biomass, waste, renewable resources, geothermal resources, solar energy, wind energy, or any combination of the above as its primary energy source, and is certified by the Federal Energy Regulatory Commission as a qualifying facility.

2-6-221 **Qualifying Power Purchase Agreement:** As defined in 40 CFR 72.2.

2-6-222 **Regulated Air Pollutant:** For the purposes of Major Facility Review under Regulation 2, Rule 6, the following are regulated air pollutants:

222.1 Nitrogen oxides and volatile organic compounds;

222.2 Any pollutant for which a national ambient air quality standard has been promulgated;

222.3 Any Class I or Class II ozone depleting substance subject to a standard promulgated under Title VI of the Clean Air Act; ~~and~~

222.4 Any pollutant that is subject to any standard promulgated under Section 111 of the Clean Air Act; and~~.~~

222.5 Any pollutant that is subject to any standard or requirement promulgated under Section 112 of the Clean Air Act including sections 112(g), (j), and (r).

~~222.6 Greenhouse gases, but only at facilities that have the potential to emit 100,000 tons per year or more of CO_2e greenhouse gases.~~

Total suspended particulate and greenhouse gases are~~is~~ not ~~a~~ regulated air pollutants for purposes of major facility review under this Rule.

(Amended 10/20/99, 5/2/01, 12/19/12)

2-6-223 **Responsible Official:** The responsible official will vary depending upon the type of facility, and shall be designated as follows:

223.1 Corporation: The responsible official shall be a president, secretary, treasurer, or vice president in charge of a principal business function or shall otherwise be a duly authorized representative if:

1.1 the representative is responsible for the overall operation of the facility, and

1.2 either the duly authorized representative is responsible for the operation of facilities that employ more than 250 persons or that have gross annual sales or expenditures exceeding $25 million in 1980 dollars or the APCO has approved a petition from the original responsible official to allow the duly authorized representative to be the responsible official.

223.2 Partnership or Sole Proprietorship: general partner or proprietor.

2.1 Partnership of Corporations: The responsible official shall be the responsible official of any of the partner corporations.

223.3 Municipality, State, Federal, or Other Public Agency: The principal executive officer or ranking elected official.

223.4 Phase II Acid Rain Facilities: The designated representative pursuant to 40 CFR 72.20 through 72.25.

2-6-224 **Schedule of Compliance:** Shall have the meaning given to it in 40 C.F.R. Part 70.

(Amended 4/16/03)

2-6-225 **Severability Clause:** A statement in a permit issued under this rule that, in the case of a challenge to any part of the permit by EPA, the facility's owner or operator, or any other person, the remaining parts of the permit will remain valid.

2-6-226 **Significant Permit Revision:** Any revision to a federally enforceable condition contained in a major facility review permit that can be defined as follows:

226.1 The incorporation of a change considered a major modification under 40 CFR Parts 51 (NSR) or 52 (PSD);

226.2 The incorporation of a change considered a modification under 40 CFR Parts 60 (NSPS), 61 (NESHAPS), or Section 112 of the Clean Air Act (HAP);

226.3 Any significant change or relaxation of any applicable monitoring, reporting or recordkeeping condition;

226.4 The establishment of or change to a permit term or condition allowing a facility to avoid an applicable requirement, including:

4.1 a federally enforceable emission limit assumed in order to avoid classification as a modification under any provision of Title I of the federal Clean Air Act, or

4.2 an alternative hazardous air pollutant emission limit pursuant to Section 112(i)(5) of the Clean Air Act;

226.5 The establishment of or change to a case-by-case determination of any emission limit or other standard;

226.6 The establishment of or change to a facility-specific determination for ambient impacts, visibility analysis, or increment analysis on portable sources; or

226.7 The incorporation of any requirement promulgated by the U. S. EPA under the authority of the Clean Air Act provided that three or more years remain on the permit term. (Amended 10/20/99)

2-6-227 Simple Combustion Turbine: Rotary engine driven by a gas under pressure that is created by the combustion of any fuel, including combined cycle engines, and excluding engines with auxiliary firing.

2-6-228 Source: Any article, machine, equipment, operation, contrivance or related groupings of such that may produce and/or emit any regulated air pollutant or hazardous air pollutant.

2-6-229 Subject Solid Waste Incinerator Facility: Any source that burns solid waste material (except hazardous waste as defined by RCRA) from commercial, industrial, or general public sources in a category for which a New Source Performance Standard (NSPS) has been adopted after November 15, 1990. (Amended 10/20/99)

2-6-230 Synthetic Minor Facility: A facility which, by imposition of enforceable permit conditions, has its potential to emit limited to below the threshold levels for a major facility as defined by Section 2-6-212 and is not otherwise required to apply for a major facility review permit under Regulation 2, Rule 6. (Amended 10/20/99)

2-6-231 Synthetic Minor Operating Permit: A District operating permit that has been modified to include conditions imposing enforceable permit conditions on a facility or source. A synthetic minor operating permit is subject to all the provisions of District Regulations 1, 2, and 3, including, but not limited to, permitting, compliance, and fee requirements. (Amended 10/20/99)

2-6-232 Synthetic Minor Operating Permit Revision: A revision to a term or condition of a synthetic minor operating permit that establishes a synthetic minor limit or that specifies the monitoring or recordkeeping requirements necessary to verify ongoing compliance with a synthetic minor limit. (Adopted 2/1/95, Amended 10/20/99)

2-6-233 Permit Shield: One of the following:

233.1 Non-applicable Requirements**:** A provision in a major facility review permit that identifies and justifies specific federally enforceable regulations and standards which the APCO has confirmed are not applicable to a source or group of sources. Enforcement actions and litigation may not be initiated against the source or group of sources covered by the shield based on those identified regulatory and statutory provisions.

233.2 Subsumed Requirements**:** A provision in a major facility review permit that identifies and justifies specific federally enforceable applicable requirements for monitoring, recordkeeping and/or reporting which are subsumed because other applicable requirements for monitoring, recordkeeping, and reporting in the permit will assure compliance with all emission limits. Enforcement actions and litigation may not be initiated against the source or group of sources covered by the shield based on those identified applicable requirements.

(Adopted 2/1/95; Amended 10/20/99, 5/2/01)

2-6-234 Deleted 10/20/99

2-6-235 **Actual Emissions:** The emissions of regulated or hazardous air pollutants from a facility for any 12-month period. The basis for determining actual emissions shall be, as appropriate: throughputs of process materials; throughputs of materials stored; usage of materials; data provided in manufacturer's product specifications, material volatile organic compound (VOC) content reports or laboratory analyses; valid continuous emission monitoring data; source test data; other information required by this rule and applicable District, State or Federal regulations; or information requested in writing by the APCO. The effect of abatement devices shall be considered. All calculations of actual emissions shall use District approved methods, including emission factors and assumptions. (Adopted 10/20/99)

2-6-236 **Modified Source or Facility (for Section 2-6-309):** As defined in Regulation 2-1-234. (Adopted 10/20/99; Amended 5/2/01)

2-6-237 **Potential to Emit Demonstration:** An analysis showing that a facility does not have a potential to emit at or above the thresholds for a major facility as defined in Section 2-6-212. (Adopted 10/20/99)

2-6-238 **Process Statement:** A report on permitted sources from an owner or operator of a facility containing one or more of the following, as requested by the APCO: throughputs of process materials; throughputs of materials stored; usage of materials; fuel usage; any available continuous emissions monitoring data; hours of operation; and any other information required by this rule or requested in writing by the APCO.

(Adopted 10/20/99)

2-6-239 **Significant Source:** A source that has a potential to emit of more than 2 tons per year of any regulated air pollutant ~~except GHG, more than 2,000 tons per year of GHG (measured as CO_2e),~~ or more than 400 pounds per year of any hazardous air pollutant.

(Adopted 10/20/99)

2-6-240 **State Implementation Plan (SIP):** A state plan to attain or maintain the National Ambient Air Quality Standards pursuant to Section 110 of the Clean Air Act that has been approved by EPA. (Adopted 10/20/99)

2-6-241 **12-month Period:** A period of twelve consecutive months determined on a rolling basis with a new 12-month period beginning on the first day of each calendar month.

(Adopted 10/20/99)

2-6-242 **Affected State:** State whose air quality may be affected by a facility and that is contiguous to the State of California or a state that is within 50 miles of a permitted source within the District. (Adopted 10/20/99; Amended 5/2/01)

2-6-243 **Final Action:** The issuance, denial, revocation or revision of a permit.

(Adopted 5/2/01)

2-6-244 **CFR:** Code of Federal Regulations. (Adopted 5/2/01)

~~**2-6-245** **Greenhouse Gases (GHG):** The air pollutant that is defined in 40 CFR Section 86.1818-12(a), which is a single air pollutant made up of a combination of the following six constituents: carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. GHG emissions shall be measured (i) based on total mass for purposes of determining whether a facility exceeds the 100-ton per year major facility threshold under Section 2-6-212.1; and (ii) as CO_2 equivalent emissions (CO_2e) calculated in accordance with Section 2-6-246 for purposes of determining whether the emissions constitute a regulated air pollutant as defined in Section 2-2-222.6, as well as for applying the provisions of Sections 2-6-239 (significant source definition), 2-6-312 (major facility review, smaller facilities), and 2-6-423.2 (permit content for synthetic minor operating permits).~~

~~**2-6-246** **CO_2 equivalent emissions (CO_2e):** A measure of GHG emissions computed by multiplying the mass of emissions of each of the six greenhouse gases in the pollutant GHGs by the gas' associated global warming potential as set forth in Table A–1 to subpart A of 40 CFR 98, Global Warming Potentials; and then summing the resultant value for each gas to compute of the amount of GHG emissions measured as CO_2e.~~

2-6-24<u>5</u>~~7~~ **Maximum Achievable Control Technology (MACT):** A limit on emissions of hazardous air pollutants that reflects the maximum degree of reduction in emissions that the APCO determines is achievable, taking into consideration the cost of

achieving such emission reduction and any non-air-quality health and environmental impacts and energy requirements. A determination of what constitutes Maximum Achievable Control Technology shall be made on a case-by-case basis in accordance with the provisions of Section 112(j) of the Clean Air Act.

2-6-300 STANDARDS

2-6-301 Major Facility Review Requirement: Any major facility as defined in Section 2-6-212 shall undergo major facility review in accordance with the requirements of this rule.

(Amended 12/19/2012)

2-6-302 Major Facility Review Requirements for Phase II Acid Rain Facilities: Any Phase II acid rain facility shall undergo major facility review in accordance with the requirements of this rule, even if such facility is not classified as a major facility under Section 2-6-212; and shall comply with the requirements of Sections 405, 406, 408, 409, 411, and 412 of the Clean Air Act. (Amended 10/20/99)

2-6-303 Major Facility Review Requirements for Subject Solid Waste Incinerator Facilities: Any subject solid waste incinerator facility shall undergo major facility review in accordance with the requirements of this rule, even if such facility is not classified as a major facility under Section 2-6-212. Major facility review permits issued under this Section for such facilities, including new, modified and existing facilities, shall include all applicable New Source Performance Standards.

(Amended 10/20/99; 12/19/12)

2-6-304 Major Facility Review Requirement for Designated Facilities: Any designated facility shall undergo major facility review in accordance with the requirements of this rule, even if such facility is not classified as a major facility under Section 2-6-212.

(Amended 10/20/99)

2-6-305 Operational Flexibility: A facility may make a change to the facility or operation without requiring a major facility review permit revision in accordance with the procedures and restrictions set forth in Section 2-6-417 if the change is not a modification pursuant to Title I of the Clean Air Act and does not exceed any emissions allowable under federally enforceable provisions of the permit. Such change shall in no way affect the obligation of the permittee to comply with any applicable requirement including the requirement to obtain an Authority to Construct under Rule 2-1. This provision shall not apply to the phase II acid rain portion of any facility subject to this Rule. (Amended 2/1/95)

2-6-306 Emissions Trading: The APCO shall allow emissions trading within a facility that has a major facility review permit in accordance with the procedures and restrictions set forth in Section 2-6-418. This provision shall not apply to the phase II acid rain portion of any facility subject to this Rule. (Adopted 5/2/01)

2-6-307 Non-compliance, Major Facility Review: Any facility subject to the requirements of this regulation that is not in compliance with any federally enforceable permit condition, any federally enforceable applicable requirement set forth in its major facility review permit, or the requirement to apply for a major facility review permit is in violation of the Clean Air Act and shall be subject to enforcement action, permit termination, permit revocation and reissuance, and/or denial of a permit renewal. Moreover, a facility subject to major facility review which has not submitted a timely and complete permit application by the deadlines set forth in Section 2-6-404 shall not operate. (Amended 2/1/95, 10/20/99)

2-6-308 Major Facility Review and Other District Permitting Requirements: Submittal of a complete application or an administrative permit amendment request in accordance with this rule shall in no way affect, and shall not constitute compliance with, the requirements for authorities to construct and permits to operate as set forth in Regulation 2, Rules 1 and 2.

2-6-309 Prohibited Modifications: A person shall not modify any source or operation covered by a major facility review permit issued under this rule unless such modification is either: (1) included in an operating scenario addressed in the permit;

(2) authorized under this rule; or (3) permitted by the APCO pursuant to an application for a revision to the permit. (Amended 10/20/99)

2-6-310 **Synthetic Minor Operating Permit Requirement:** Any major facility which elects to accept enforceable permit conditions such that the facility becomes a synthetic minor facility, and is not otherwise subject to major facility review, shall apply for a synthetic minor operating permit. Any facility that files false information with the District in order to obtain a synthetic minor operating permit is in violation of the Clean Air Act and District Regulations and shall be subject to enforcement action. A synthetic minor facility is not subject to the obligations of a major facility unless facility fails to comply with the synthetic minor limits or it becomes a designated facility. (Amended 10/20/99)

2-6-311 **Non-compliance, Synthetic Minor Facilities:** Any facility subject to the requirements of a synthetic minor operating permit that is not in compliance with any permit condition set forth in its synthetic minor operating permit shall be subject to enforcement action, permit termination, permit revocation and reissuance, and/or denial of a permit renewal. (Amended 2/1/95, 10/20/99, 5/2/01)

2-6-312 **Major Facility Review, Smaller Facilities:** Any facility with actual emissions as defined by Section 2-6-235 that exceed any threshold below shall apply for a major facility review permit unless the facility demonstrates that its potential to emit is below the major facility thresholds defined in Section 2-6-212, or the facility has applied for and received a synthetic minor permit.

312.1 25 tons per year of any regulated air pollutant ~~except GHG~~, excluding fugitive emissions per Section 2-6-212;

312.2 2.5 tons of any hazardous air pollutant per year including all fugitive emissions of the hazardous air pollutant; or

312.3 6.25 tons of all hazardous air pollutants per year including all fugitive emissions of hazardous air pollutants.~~;~~

~~312.4 25,000 tons of GHG (measured as CO_2e), excluding fugitive emissions per Section 2-6-212.~~

For the purpose of this Section, "actual emissions" shall be the maximum emissions for any consecutive 12-month period ending on or after July 24, 1995. ~~A permit application or potential-to-emit demonstration required under this Section shall be submitted within 12 months after the date actual emissions first exceed the threshold levels specified in subsections 312.4, or within 12 months after **[effective date of regulation]**, whichever is later.~~

(Adopted 10/20/99; Amended 5/2/01)

2-6-313 **Denial, Failure to Comply:** The APCO shall deny a major facility review permit after providing written notification to the applicant, if the facility, or any source therein, is in violation of any applicable requirement and the facility cannot obtain a compliance schedule in accordance with the Health and Safety Code. (Adopted 5/2/01)

2-6-314 **Revocation:** The APCO may request the Hearing Board to hold a hearing to determine whether a major facility permit should be revoked if it is found that the holder of the permit is violating any provision in the permit or any applicable requirement. (Adopted 5/2/01)

2-6-315 **Case-by-Case MACT Requirement:** The APCO shall require Maximum Achievable Control Technology to limit emissions of hazardous air pollutants in any major facility review permit issued for a facility that meets the following criteria:

315.1 the facility has the potential to emit 10 tons per year or more of any single hazardous air pollutant, or 25 tons per year or more of any combination of hazardous air pollutant; and

315.2 the facility is in a category or subcategory of sources listed by EPA under Section 112(c) of the Clean Air Act; and

315.3 EPA has not promulgated a National Emission Standard for Hazardous Air Pollutants for the category or subcategory of sources by the deadline established under Section 112(e) of the Clean Air Act.

2-6-400 **ADMINISTRATIVE REQUIREMENTS**

2-6-401 **Deleted 10/20/99**

2-6-402 **Fees:** Any facility subject to the requirements of this rule shall pay any applicable fees specified in District Regulation 3, Fees, including Schedule P.

2-6-403 **Application for Major Facility Review Permit, Permit Renewal, or Permit Revision:** The responsible official for any major facility, phase II acid rain facility, subject solid waste incinerator facility, or designated facility shall apply for a major facility review permit, permit renewal, or permit revision in accordance with all the requirements of this rule. (Amended 2/1/95)

2-6-404 **Timely Application for a Major Facility Review Permit:** The responsible official for a facility subject to the requirements of Section 403 of Regulation 2, Rule 6, shall submit an application for a major facility review permit to the APCO and to EPA in a timely manner as described below:

404.1 The initial application for a major facility review permit shall be submitted by the applicant within 12 months after the facility becomes subject to Regulation 2, Rule 6.

404.2 An application for a five-year renewal of the terms and conditions of a major facility review permit shall be submitted by the applicant at least 6 months but no earlier than 12 months prior to the date on which the five-year period for the validity of the terms and conditions of the permit expires.

404.3 An application for a significant permit revision shall be submitted by the applicant prior to commencing an operation associated with a significant permit revision. Where an existing federally enforceable major facility review permit condition would prohibit such change in operation, the responsible official must request preconstruction review and obtain a major facility review permit revision before commencing the change.

404.4 An application for a minor permit revision shall be submitted by the applicant prior to commencing any operation associated with the minor permit revision.

404.5 A phase II acid rain facility shall apply for a major facility review permit in accordance with the deadlines in Section 404.1 of this rule.

404.6 Any major facility subject to Section 112(j) of the federal Clean Air Act must submit an application for a major facility review permit no later than 18 months after the date the U. S. Environmental Protection Agency fails to promulgate any emission standard listed pursuant to Clean Air Act Section 112(c)(1) according to the schedule promulgated under Clean Air Act Section 112(e).

404.7 Deleted 10/20/99

404.8 Deleted 12/19/2012

(Amended 2/1/95; 10/20/99)

2-6-405 **Complete Application for a Major Facility Review Permit:** All applications for an initial major facility review permit, for a significant revision to an existing major facility review permit, and for a five-year renewal of the terms and conditions of a major facility review permit shall contain the following information in addition to the information required by Regulation 2-1-202:

405.1 All relevant BAAQMD permit application forms;

405.2 A description of the facility's processes and products (by Standard Industrial Classification Code) including any associated with an operating scenario identified by the facility;

405.3 A statement certifying that any fee required by District Regulation 3 has been paid;

405.4 Identification and description of:

4.1 each permitted source at the facility

4.2 each source or other activity that is exempt from the requirement to obtain a permit or excluded from District rules or regulations under Regulation 2, Rule 1, and a citation of the section of the rule under which it is exempted or excluded;

405.5 A list, including citation and description, of all applicable requirements for each source;

405.6 A calculation and summary of annual emissions (including fugitive emissions) of regulated air pollutants~~,~~ and hazardous air pollutants~~, and GHGs~~ from each source or emission-producing activity if the source or activity is a

significant source of an air pollutant as defined by Section 2-6-239. Emission calculations and summaries for pollutants emitted below the significance thresholds are not required for such sources or activities that have emissions of other pollutants above these thresholds. The above emission calculations shall also be submitted for any alternate operating scenarios that are submitted with the application;

405.7 A description of the compliance status of the facility with respect to all applicable requirements;

405.8 A compliance statement as follows:

8.1 A statement that the facility will continue to comply with all applicable requirements with which it is currently in compliance;

8.2 A statement that the facility will meet all applicable requirements on a timely basis as requirements become effective during the permit term and a narrative of how the facility will achieve compliance with all applicable requirements if the facility is not currently doing so; and

8.3 A copy of any schedule of compliance applicable to the facility's operations regarding air quality which has been issued by the District's Hearing Board, the California Air Resources Board, or any court of competent jurisdiction;

405.9 A compliance certification by a responsible official of the facility that the application forms and all accompanying reports and other required compliance certifications are true, accurate, and complete based on information and belief formed after reasonable inquiry; and

405.10 All information required by Volume II of the District's Manual of Procedures.

An application may reference, rather than explicitly list, certain pre-existing information and be considered initially complete. The type of information that may be referenced includes District-issued rules, regulations, permits and published protocols; pollutant emission inventories and supporting calculations; emission monitoring reports, compliance reports and source tests; annual emissions statements; process and abatement equipment lists and descriptions; current operating and pre-construction permit terms; and permit application materials previously submitted. However, the Summary Forms and the Certification of Compliance must be completed in full. Any applicant who fails to submit any relevant facts or who has submitted incorrect information in a permit application shall submit the supplementary facts or corrected information upon becoming aware of such failure or incorrect submittal. In addition, the applicant must provide additional information as necessary to address any requirements that become applicable. Applications for significant permit revisions shall include the above information only for those sources that will be modified. A copy of all applications and subsequent documents pertaining to the applications shall be sent to EPA by the applicant.

(Amended 4/5/95, 10/20/99, 5/2/01)

2-6-406 Application for a Minor Permit Revision: An application for a minor permit revision to a major facility review permit shall contain:

406.1 A description of the proposed change, the emissions resulting from the proposed change, and any new applicable requirements that will apply if the change occurs;

406.2 A draft permit including the proposed change;

406.3 A request by the responsible official that the minor revision procedures be used;

406.4 A certification by the responsible official that the proposed change is a minor revision as defined in Section 2-6-215; and

406.5 All documents or information required by Section 2-6-405 as they pertain to sources affected by the minor revision.

A facility that has submitted an application for a minor revision may proceed with the revision if the facility complies with the proposed permit terms and conditions. If the facility fails to comply with the proposed terms during the time that the application is being processed, the existing permit terms and conditions may be enforced against it.

(Amended 10/20/99)

2-6-407 Application Shield: A facility shall not be subject to enforcement action for not possessing a major facility review permit if the facility fulfills the following three conditions:

407.1 The facility has filed with the APCO a complete and timely application for an initial major facility review permit or for a five-year renewal of an existing major facility review permit;

407.2 The APCO has not acted on the application; and

407.3 The facility has honored all requests from the APCO for further information relating to the application by the date specified in writing of the request.

If the facility has not submitted a timely and complete application, the period of non-compliance shall be the period between the submittal deadline and the actual submittal. (Amended 10/20/99)

2-6-408 Completeness Determination: The APCO shall determine whether a major facility review permit application is complete as follows:

408.1 Application for an initial permit, for a five-year renewal or for a significant permit revision: The APCO shall determine completeness no later than 60 calendar days following receipt of the application. Unless the APCO requests additional information or otherwise notifies the applicant of incompleteness within 60 days of receipt of the application, the application shall be deemed complete as of the date of receipt.

408.2 An application for a minor permit revision: The APCO shall determine completeness within 30 days of receipt of the application. Unless the APCO requests additional information or otherwise notifies the applicant of incompleteness within 30 days of receipt of the application, the application shall be deemed complete as of the date of receipt. The APCO will determine whether the revision qualifies as a minor revision during the 30-day period.

408.3 After an application is deemed complete, the APCO may request in writing additional information necessary to evaluate or take final action on the permit. The facility shall have until the date specified in writing to respond to these requests. The APCO may declare a major facility review permit application incomplete if a facility fails to respond to a request for additional information.

(Amended 10/20/99)

2-6-409 Permit Content: A major facility review permit shall contain the following information and provisions:

409.1 A listing of all applicable requirements including emission limitations, permit conditions and operational or throughput standards or limits that apply to the facility, and a reference to the origin of each such requirement;

409.2 Testing, monitoring, reporting and recordkeeping requirements:

2.1 All applicable requirements for monitoring, recordkeeping and reporting, including applicable test methods and analysis procedures;

2.2 Additional requirements for testing, monitoring, reporting and recordkeeping sufficient to assure compliance with the applicable requirements. Where the applicable requirement does not require periodic monitoring or testing, the permit shall contain periodic monitoring sufficient to yield reliable data from the relevant time periods that is representative of the source's compliance with the permit;

409.3 A restatement of the requirement of District Regulation 1-440 that the facility's owner or operator must provide the APCO with reasonable access to the premises of the facility;

409.4 A restatement of the requirement of District Regulation 1-441 and of Section 2-6-501 that the facility's owner or operator must provide the information, records, and reports requested or specified by the APCO;

409.5 A severability clause to ensure the continued validity of permit requirements in the event of a challenge to any portion of the permit;

409.6 The duration of the major facility review permit, not to exceed five years;

409.7 A statement that: (a) the owner or operator of the facility must comply with all permit conditions and limitations set forth in the major facility review permit; (b) an application for a change in the permit by the owner or operator of the facility does not revoke or limit the applicability of any permit condition in the permit; (c) the major facility review permit does not convey a property right or exclusive privilege; and (d) the facility must keep a record in a contemporaneous log when the facility changes any aspect of its operations from one permitted scenario to another;

409.8 Provisions specifying the conditions under which the permit may be reopened for cause and modified, revoked, reissued, or terminated, prior to the end of the term;

409.9 Deleted 5/2/01.

409.10 A schedule of compliance containing the following elements:

10.1 A statement that the facility shall continue to comply with all applicable requirements with which it is currently in compliance;

10.2 A statement that the facility shall meet all applicable requirements on a timely basis as requirements become effective during the permit term; and

10.3 If the facility is out of compliance with an applicable requirement at the time of issuance, revision, or reopening, the schedule of compliance shall contain a plan by which the facility will achieve compliance. The plan shall contain deadlines for each item in the plan. The schedule of compliance shall also contain a requirement for submission of progress reports by the facility at least every six months. The progress reports shall contain the dates by which each item in the plan was achieved and an explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

409.11 Terms and conditions for reasonably anticipated operating scenarios;

409.12 Terms and conditions for any approved permit shield;

409.13 A provision for payment of fees required by Regulation 3;

409.14 An identification of those terms and conditions of the permit which are not federally enforceable because they are not derived from any requirement of the Clean Air Act;

409.15 For Phase II acid rain facilities, all acid rain provisions of a permit shall be contained in a separate and complete section of the permit. This section shall contain a permit condition prohibiting emissions exceeding the allowances that a facility holds under Title IV of the Clean Air Act;

409.16 Any terms and conditions for emissions trading approved under Section 2-6-418;

409.17 A requirement for annual compliance certifications, unless compliance certifications are required more frequently than annually in an applicable requirement or by the APCO;

409.18 A requirement for reports of all required monitoring at least once every six months,

409.19 All requirements and provisions pertaining to major facility review permits as set forth in Volume II of the District's Manual of Procedures, and

409.20 A certification requirement for all documents submitted pursuant to a major facility review permit. The certification shall state that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. The certifications shall be signed by a responsible official for the facility.

(Amended 2/1/95, 10/20/99, 5/2/01)

2-6-410 Final Action for Initial Permit Issuance, Five-Year Renewal, Reopenings, and Revisions: The APCO shall take final action on each major facility review permit application as follows:

410.1 The APCO shall take final action on an application for an initial permit, a significant permit revision, or a permit renewal within eighteen months after receipt of an application that has been deemed complete. No permit shall be

issued until after all required EPA and public review. If a facility submits a timely and complete application for renewal, all terms and conditions of the permit shall remain in effect until the renewal permit has been issued or denied.

410.2 The APCO shall take action to issue or deny a minor permit revision within 90 days of receipt of the application or within 15 days after the end of the EPA Administrator's 45-day review, whichever is later;

410.3 After the APCO has reopened an existing permit for cause, pursuant to Section 2-6-415, the APCO shall take final action to modify, revoke and reissue, or terminate that permit within 12 months after the date on which the permit is formally reopened.

410.4 The APCO shall take final action on an application containing an early reduction demonstration within nine months after the APCO determines that the application is complete.

410.5 Submittal of applications for, and the permitting, revision, and reopenings of the acid rain portion of a major facility review permit shall occur in accordance with the deadlines set forth in Title IV of the Clean Air Act and the regulations promulgated thereunder.

410.6 Notwithstanding the deadline set forth in subsection 410.1 above, for existing facilities that become subject to MFR on the date that the program receives EPA approval, the APCO shall take final action by July 1, 2001.

(Amended 2/1/95, 10/20/99)

2-6-411 Reports to EPA and Public Petitions for Major Facility Review Permits: For all initial applications, five-year renewals, and proposed minor and significant permit revisions pursuant to this Rule, the APCO shall submit to EPA for review and comment each proposed permit and each final major facility review permit. The EPA review shall be subject to the following:

411.1 EPA shall have 45 days from receipt of the proposed permit to review the proposed terms and conditions and to object to them in writing.

411.2 If EPA objects to the proposed terms and conditions of a permit within the specified 45-day period, the APCO shall submit appropriate revisions that address EPA's objections within 90 days after being notified of EPA's objection and issue the permit.

411.3 If EPA does not object to the proposed terms and conditions of a major facility review permit within the specified 45-day period, any person dissatisfied with the proposed terms and conditions may petition EPA to reconsider the matter within 60 days thereafter. Any such petition must be based on objections raised during the public comment period on the proposed permit, unless the petitioner demonstrates that it was impracticable to do so or that the grounds for the objection arose after the close of the original public comment period. EPA may object to the proposed permit on the basis of such petition. This provision does not apply to minor revisions.

3.1 If the APCO has not yet issued a proposed permit, the APCO shall make appropriate revisions prior to issuing the permit.

3.2 If the APCO has issued the permit following the 45-day EPA comment period but before receipt of an EPA objection based on public petition, the permit may be reopened for cause by the APCO in accordance with Section 2-6-415, or by the EPA in accordance with 40 CFR 70.7(g). In such event, the requirements of the permit shall remain in effect while the EPA or the APCO determines whether to modify, terminate, or revoke and reissue the permit.

411.4 Deleted 10/20/99

411.5 If the APCO schedules a public hearing after the proposed permit has been submitted to EPA, the APCO will withdraw the permit from EPA review, and resubmit the permit after the public hearing date.

(Amended 2/1/95, 10/20/99, 5/2/01)

2-6-412 Public Participation, Major Facility Review Permit Issuance: The APCO shall notify the public and affected states in advance of any proposed initial issuance,

significant revision or five-year renewal of a major facility review permit, in accordance with the following procedures:

412.1 The APCO shall publish a notice in a major newspaper in the area where the facility is located and send the notice to affected states and to persons on a mailing list of persons who have requested in writing to receive these notifications. The APCO may use other methods in addition to the two above if necessary to assure adequate notice to the affected public and states.

412.2 The notice shall identify by name and address the facility, the permittee and the permitting authority. The notice shall include information about the operation to be permitted, any proposed change in emissions, a District source for further information, a brief description of the comment procedures, and a description of procedures to request a hearing.

412.3 The notice shall provide at least 30 days for public comment.

412.4 The APCO shall give notice of any public hearing at least 30 days prior to the hearing.

412.5 The APCO shall keep a record of the commenting persons or states and the issues raised in all such comments for five years.

412.6 Written notification of any decision by the APCO not to incorporate any recommendations for the proposed permit that an affected state submitted during the public comment period shall be sent to U.S. EPA and affected states. (Amended 10/20/99, 5/2/01)

2-6-413 Administrative Permit Amendment Procedures: The APCO may make administrative permit amendments as follows:

413.1 Regulations promulgated under Title IV of the Clean Air Act shall govern administrative permit amendments to the acid rain portion of any permit.

413.2 The APCO shall take final action on a request for an administrative permit amendment no later than 60 days from the receipt of the request, provided that the APCO determines that the amendment is covered under Section 2-6-201.

413.3 The APCO may initiate an administrative permit amendment provided that the amendment is covered under Section 2-6-201.

413.4 The APCO shall submit a copy of the revised permit to EPA.

413.5 The facility may implement the changes covered by the administrative permit amendment immediately upon submittal of a request.

413.6 Any request for a change in ownership shall include a written agreement between the parties to the transaction which specifies the date of transfer of the permit including permit responsibility, coverage, and liability.

(Amended 10/20/99)

2-6-414 Minor Permit Revision Procedures: The APCO shall take action on applications for minor permit revisions as follows:

414.1 The APCO shall notify EPA of the proposed minor permit revision within 5 working days of the APCO's issuance or waiver of the authority to construct required under section 2-1-301.

414.2 The APCO shall act on the proposed minor revision within 15 days after the end of EPA's 45-day review period or within 90 days of receipt of the application, whichever is later.

414.3 If prior to taking action on a proposed minor revision the APCO determines that the proposed revision should be reviewed as a significant revision, the APCO shall revise the draft permit revision accordingly and shall submit this version to the EPA. In any such event, the provisions of Sections 2-6-411 and 412 shall apply to all further consideration of the proposed revision.

(Amended 10/20/99, 5/2/01)

2-6-415 Reopening for Cause: Proceedings to reopen and reissue a major facility review permit shall follow the same procedures that apply to the issuance of an initial major facility review permit and shall affect only those parts of the permit for which cause to reopen exists. Except in the case of an emergency, the APCO shall provide to the facility a notice of intent to reopen the permit at least 30 days in advance of the proposed reopening date. The APCO shall reopen and revise a major facility review permit under the following circumstances:

415.1 Additional requirements become applicable to a major facility having three or more years remaining before that facility's next scheduled major facility review. The APCO shall complete a reopening within 18 months after promulgation of the applicable requirement. (Reopening is not required if the effective date of the additional requirement is later than the date on which that facility's next scheduled major facility review is due);

415.2 Additional requirements become applicable to Phase II acid rain facilities under the acid rain program. Upon approval by the EPA, excess emissions offset plans developed under this program shall be incorporated into the permit;

415.3 The APCO determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit; or

415.4 The APCO determines that the permit must be revised or revoked to assure compliance with the applicable requirements.

2-6-416 Term for Major Facility Review: Once a major facility review permit is issued to a facility, except insofar as the permit must be reopened in accordance with Section 2-6-415, the terms and conditions of that permit shall remain valid for a period of five years from the date of issuance unless the facility agrees to a shorter term. However, Phase II acid rain facilities shall not have permits that contain a shorter term. At the conclusion of every such term, the APCO must review the terms and conditions of a major facility review permit in the same way as an application for an initial major facility review permit.

416.1 The issuance of a revision to an existing major facility review permit at any time during the course of the term for which the terms and conditions of that permit are valid shall not affect or extend the renewal date.

416.2 A facility subject to this rule shall continue to provide throughput update information as required by the District and to pay the annual fees required by Regulation 3, including Schedule P. (Amended 10/20/99, 5/2/01)

2-6-417 Operational Flexibility Procedures: A facility shall give written notice to the APCO of any changes made to the facility, pursuant to Section 2-6-305 - Operational Flexibility. The notice shall be received by the APCO at least 30 days prior to the change. The notice shall contain a description of the change, the date on which the change will occur, any change in emissions, and any permit term or condition that is no longer applicable as a result of the change. The facility and the District shall each attach such notice to its copy of the permit.

2-6-418 Emissions Trading Procedures: The responsible official for a facility may propose that an emissions trading provision be included in its major facility review permit as follows:

418.1 The responsible official shall submit an application pursuant to Regulation 2-1-301 to incorporate the trading provisions into the permits of the affected sources. The application must identify the District regulations that provide for the proposed trading provisions and demonstrate that the trading provisions comply with all applicable District regulations.

418.2 The APCO shall approve the request if the provisions comply with all applicable District regulations.

418.3 The proposal shall include an emissions cap allowing for the trading of emissions increases and decreases, permit conditions, recordkeeping requirements and replicable procedures for determining compliance with applicable requirements;

418.4 The proposed emissions trades shall be quantifiable and federally enforceable; and

418.5 Once the emissions trading provisions have been incorporated into the permit, the facility shall notify the APCO in writing at least seven days prior to a trade. The notification shall state when the trade will occur, what change in emissions will result, and how the trade will comply with the emission trading provisions.

418.6 The APCO shall incorporate the trading provisions in the initial MFR permit issuance, or, if the permit has been issued, shall incorporate the trading

provisions into the permit MFR using the minor or significant permit revision procedures. (Adopted 5/2/01)

2-6-419 Availability of Information: The contents of permit applications, compliance plans, emissions or compliance monitoring reports, and compliance certification reports shall be available to the public, subject to the restrictions of the District's Administrative Code, Section 11. The contents of the permit shall be available to the public and shall not be subject to the above restrictions.

2-6-420 Application for a Synthetic Minor Operating Permit: A facility which seeks to become a synthetic minor facility shall apply for a synthetic minor operating permit in accordance with the requirements of this rule. If a synthetic minor facility plans a physical or operational change which would increase its potential to emit such that it would exceed any threshold for a major facility, the facility shall become subject to major facility review and shall apply for a major facility review permit prior to making the change. A facility may also elect to accept synthetic minor permit conditions to limit the potential to emit of a source or operation to avoid requirements other than Major Facility Review. (Amended 2/1/95, 10/20/99, 5/2/01)

2-6-421 Timely Application for a Synthetic Minor Operating Permit: An application for a synthetic minor operating permit or synthetic minor operating permit revision shall be submitted in a timely manner as described below:

421.1 A facility which elects to apply for a synthetic minor operating permit in order to avoid the requirement to obtain a major facility review permit shall apply for and receive a synthetic minor operating permit prior to the date by which it would have to apply for a major facility review permit.

421.2 Any facility not subject to the requirements of Regulation 2, Rule 6, may apply for a synthetic minor operating permit at any time, in accordance with Section 2-6-422.

421.3 A facility seeking a synthetic minor operating permit revision (as defined by Section 2-6-232) shall apply for the revision in accordance with Section 2-6-422 and receive approval prior to making the change at the facility.

421.4 For a revision to a synthetic minor operating permit which will not change any condition of the permit that establishes a facility-wide emission limit or that specifies the monitoring and recordkeeping requirements necessary to verify ongoing compliance with a facility-wide emission limit, an application must be received by the APCO in accordance with the requirements of Regulation 2, Rule 2, New Source Review.

421.5 For a physical or operational change to a synthetic minor facility which would increase the facility's potential to emit to a level above that of a major facility, the facility must undergo preconstruction review, apply for a major facility review permit in accordance with the requirements of this rule, and apply for a cancellation of the synthetic minor permit prior to commencing the change. Any increase in the emission limits shall be subject to the requirements of Regulation 2, Rules 1 and 2.

421.6 Renewals of synthetic minor operating permits shall be made in accordance with the requirements of Regulation 3-207.

421.7 Deleted 10/20/99 (Amended 2/1/95, 10/20/99, 5/2/01)

2-6-422 Complete Application for a Synthetic Minor Operating Permit: An application for a synthetic minor operating permit or for a synthetic minor operating permit revision (as defined by Section 2-6-232) shall contain the following:

422.1 All relevant BAAQMD permit application forms;

422.2 A statement certifying payment of any fee required by District Regulation 3, including Schedule P;

422.3 Identification and description of all existing sources at the facility, including sources that are exempt from permits under Regulation 2, Rule 1;

422.4 A calculation (following the protocol set forth in the Manual of Procedures, Volume II, Part 3, subsection 2.2.2.c) of annual and monthly maximum emissions of regulated air pollutants and hazardous air pollutants from the facility. All fugitive emissions of hazardous air pollutants shall be included. For fugitive emissions of regulated air pollutants, only those from facility

categories listed in the Manual of Procedures, Volume II, Part 3, Section 1 shall be included;

422.5 Proposed permit conditions to limit facility-wide emissions to below the thresholds for a major facility; and

422.6 Proposed permit conditions imposing monitoring, recordkeeping and reporting requirements sufficient to determine ongoing compliance.

Applications for a synthetic minor permit revision shall include the above information only for those sources that will be modified. Applications for a synthetic minor operating permit for the purpose of avoiding a requirement other than major facility review shall include the above as they apply to the sources for which limits are proposed. (Amended 2/1/95, 10/20/99)

2-6-423 District Procedures for Synthetic Minor Operating Permits: The APCO shall take action on applications for synthetic minor operating permits and for synthetic minor operating permit revisions as follows:

423.1 Completeness: The APCO shall determine if the application is complete within 30 days of receipt, or within a longer time period as agreed upon by both the applicant and the APCO.

423.2 Permit Content: The synthetic minor operating permit shall contain all information and provisions pertaining to synthetic minor operating permits as set forth in Volume II of the District's Manual of Procedures including:

2.1 Quantifiable and practically enforceable permit conditions limiting the facility's potential to emit to no greater than 95 tons per year of any regulated air pollutant ~~except GHG, 95,000 tons per year of GHG (measured as CO_2e)~~, 9 tons per year of any single hazardous air pollutant, and 23 tons per year of any combination of hazardous air pollutants, or;

2.2 Quantifiable and practically enforceable permit conditions limiting a source or operation's potential to emit to no greater than 90 percent of the threshold for the requirement that is to be avoided, and;

2.3 Permit conditions requiring monitoring, recordkeeping, and reporting sufficient to determine compliance with the emission limits set forth in subsection 423.2.1 or 423.2.2.

423.3 Deleted 10/20/99

423.4 Reports to EPA: The APCO shall provide to EPA a copy of each proposed and final synthetic minor operating permit.

423.5 Final Action: The APCO shall take final action on synthetic minor operating permits as follows:

5.1 Initial Application and Cancellations: Within 180 days following the acceptance of the application as complete.

5.2 Revisions: In accordance with the requirements of Regulation 2-1-408;

423.6 Revisions: The APCO shall ensure that revisions of synthetic minor permits comply with subsection 2-6-423.2. Revisions of permit conditions shall also be in accordance with the requirements of Regulation 2, Rules 1 and 2.

423.7 Cancellation of Synthetic Minor Permits: A facility may petition the APCO to cancel its synthetic minor operating permit because its potential to emit due to its physical or operational design has dropped below the major source threshold or because proposed modifications to the facility would increase the facility's potential to emit to a level above that of a major facility. The facility must comply with the synthetic minor operating permit until the APCO cancels the permit. The permit that replaces the synthetic minor operating permit will contain any emission limits contained in the synthetic minor operating permit. Revisions of the permit conditions shall be in accordance with the requirements of Regulation 2, Rules 1 and 2.

(Amended 2/1/95, 10/20/99, 5/2/01)

2-6-424 Applicability: The APCO shall evaluate the applicability of this rule to each facility as part of the District's annual permit renewal process required by Health & Safety Code Section 42301(e). Within 30 days of a written request for a process statement or specific emission-related information by the APCO or EPA, a facility shall submit the requested information. (Adopted 10/20/99)

2-6-425 **Facility List:** The APCO shall maintain a list of facilities that are subject to this rule together with the specific provisions applicable to each facility. The APCO shall also maintain a list of facilities that are not subject to this rule. The facility lists shall be available to the public. (Adopted 10/20/99)

2-6-426 **Compliance Certification Procedures:** All compliance certifications required in permit applications or by major facility review permits shall be prepared in accordance with the following procedures:

426.1 A responsible official for the facility shall certify all compliance certifications. The certification shall state that the compliance certification is true, accurate, and complete based on information and belief formed after reasonable inquiry.

426.2 Effective May 2, 2002, all applicants for a major facility review permit shall submit a new certification of compliance on every anniversary of the application date if the permit has not been issued. (Adopted 5/2/01)

2-6-427 **Statement of Basis:** The APCO shall, in conjunction with the issuance of any major facility review permit, prepare a statement that, in conjunction with the permit itself, sets forth the legal and factual basis for the draft permit conditions. This statement shall explain the basis for the decisions made by the APCO in issuing the major facility review permit, including the APCO's reasoning for imposition of additional monitoring requirements, and for the creation of any permit shield provisions. The statement of basis may, but need not, address requirements that are not applicable and for which no permit shield is provided. The statement of basis need not address the rationale underlying the establishment of any applicable requirement.

(Adopted 4/16/03)

2-6-500 MONITORING AND RECORDS

2-6-501 **Recordkeeping:** The APCO may require that the owner or operator of any facility subject to this rule keep any records that are relevant or necessary to enable the APCO to determine emissions from the facility. The facility shall keep such records on site for five years from the date of entry and shall make the records available to the APCO upon request.

2-6-502 **Monitoring Reports, Major Facility Review Permit:** Every six months, the facility shall prepare and submit to the District reports of any monitoring required by the major facility review permit. A responsible official shall certify that all such reports are true, accurate, and complete based on information and belief formed after reasonable inquiry. In addition to the reporting requirements set forth in Regulation 1, subsection 522.7 and Section 542, the facility shall promptly identify and report to the APCO all monitored excesses and any other deviations from the requirements of the permit.

(Amended 10/20/99, 5/2/01)

2-6-503 **Monitoring:** The APCO may require that the owner or operator of any facility subject to this rule conduct any monitoring that is necessary to enable the facility and the APCO to determine emissions from the facility. The APCO may specify the format and frequency of reports for all monitoring. (Adopted 10/20/99, 5/2/01)

2-6-600 MANUAL OF PROCEDURES

2-6-601 **Major Facility Review Permit Procedures:** The specific procedures for application submittals, the engineering evaluation and the required permit content for major facility review permits are set forth in Volume II of the District's Manual of Procedures.

2-6-602 **Synthetic Minor Operating Permit Procedures:** The specific procedures for the engineering evaluation and the required permit content for synthetic minor operating permits are set forth in Volume II of the District's Manual of Procedures.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

STAFF REPORT

FOR

PROPOSED

TECHNICAL AND ADMINISTRATIVE AMENDMENTS

TO

NEW SOURCE REVIEW AND TITLE V PERMIT PROGRAMS

Regulation 2, Rule 1 (Permits – General Requirements)
Regulation 2, Rule 2 (Permits – New Source Review)
Regulation 2, Rule 4 (Permits – Emissions Banking)
and
Regulation 2, Rule 6 (Permits – Major Facility Review)





October 2017

[Incorporating Revisions to Earlier Version Issued August 2017]

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I. EXECUTIVE SUMMARY

Staff of the Bay Area Air Quality Management District (Air District or District) are proposing a number of technical and administrative amendments to two important Air District permitting programs, the "New Source Review" pre-construction permit program and the Title V "Major Facility Review" operating permit program. These amendments are necessary to make certain revisions required by the U.S. Environmental Protection Agency (EPA) so that EPA can fully approve the Air District's programs under the Clean Air Act. The amendments will also make revisions identified by Air District staff to help the programs function more effectively, and will revise the District's regulations to align them with a recent Clean Air Act ruling by the U.S. Supreme Court.

The Air District's New Source Review (NSR) program is a comprehensive air permitting program that applies to stationary-source facilities within the District's jurisdiction. The NSR program is the Air District's principal substantive permitting program, applying to a wide variety of stationary-source facilities throughout the Bay Area. Whenever a facility wants to install a new source of air emissions or make a modification to an existing source, the NSR program requires the facility to obtain a permit and implement state-of-the-art air pollution control technology to limit the source's emissions. NSR is a pre-construction permitting requirement, meaning that the facility is required to obtain its NSR permit before it can begin work on the new source or modification.

The Air District's Title V Major Facility Review (Title V) program requires "major" facilities – those with emissions of over 10, 25, or 100 tons per year, depending on the pollutant – to obtain operating permits. The Title V operating permit does not impose any additional substantive requirements on these facilities to limit their emissions. Instead, the purpose of the Title V permit is to collect all of the substantive emissions control requirements applicable to the facility under District, state and federal permits and regulations into one comprehensive document, which improves the transparency and enforceability of the regulatory requirements for these complex "major" facilities.

The Air District updated its NSR and Title V regulations most recently in December of 2012. Since that time, there have been three developments that have given rise to a need to make further revisions:

- EPA has approved (or is in the process of approving) the Air District's 2012 revisions as satisfying the requirements of the federal Clean Air Act, with the exception of 13 identified "deficiencies." The District needs to make certain revisions to address these deficiency items so that EPA can fully approve the District's NSR program.

- In addition, Air District Staff have gained further experience in working with the 2012 updates since they were adopted, and have identified certain areas where additional revisions and clarifications are needed to ensure that the NSR program functions as effectively as possible.
- Finally, in 2014 the U.S. Supreme Court issued a ruling in *Utility Air Regulatory Group v. EPA* (134 S.Ct. 2427 (2014)) that interpreted several relevant provisions of the federal Clean Air Act regarding the Act's NSR and Title V program requirements. The Air District needs to make certain revisions to align the District's regulations with the Supreme Court's ruling.

Although these necessary changes are relatively minor, and are mostly technical and administrative in nature, they are important to ensure that the Air District's NSR and Title V programs function properly from a legal standpoint. The need for these revisions, and exactly what they would involve, are discussed in more detail in the subsequent sections of this Staff Report.

Air District staff also considered two other more substantive changes to the NSR program during the rule development process, but are not proposing action on those issues at this time. The first substantive change was a provision designed to enhance enforcement of the District's NSR requirements in situations where petroleum refineries change the type of crude oil that they process – what is known as the refinery's "crude slate." The Air District committed to addressing this issue under Control Measure SS9 in the 2017 Clean Air Plan, *Spare the Air, Cool the Climate*. District staff are deferring finalizing a proposal on this measure at this time, in order to allow staff to collect additional information on refinery crude slates and how crude slate changes may affect emissions. Staff are proposing that the Board of Directors adopt the proposed technical and administrative amendments now in order to meet EPA's deadline for making those changes, and then address the provision covering refinery crude slate changes when staff have had more time to assess the data being collected under Regulation 12, Rule 15, the Petroleum Refining Emissions Tracking Rule, in order to develop a carefully-considered final proposal.

The second substantive change was a proposal to expand the scope of the Air District's existing requirement that facilities use the "Best Available Control Technology" to reduce greenhouse gas emissions from new and modified sources. The Air District committed to revising this requirement under Control Measure SS17 in the 2017 Clean Air Plan. However, recent legislation has restricted the District's legal authority to impose regulatory limits on CO_2 emissions from sources subject to the state's Cap and Trade program. This legislative action has effectively prohibited the Air District from moving forward with this measure as contemplated in Control Measure SS17 – although the Air

District will continue to consider possible alternative approaches to address greenhouse gas pollutants other than CO_2 as part of future rule amendments.

The Air District's Board of Directors will consider adoption of the Proposed Amendments at a public hearing scheduled for December 6th, 2017. Air District staff are publishing this Staff Report in advance of the public hearing to provide the Board of Directors and interested members of the public with a detailed explanation of what the Proposed Amendments will entail and why it is important for the Air District to adopt them. Air District staff encourage interested members of the public to review this Staff Report, along with the accompanying drafts of the Proposed Amendments, and to submit any comments they may have. Further information on public comment opportunities is provided in Section VII of this Staff Report.

Readers should also note that Air District staff published an earlier version of these Proposed Amendments in August, 2017, which were originally scheduled for a public hearing before the Board of Directors on October 18th, 2017. Air District staff have made two further revisions to that earlier version and are now republishing the Proposed Amendments and re-noticing the proposal to allow members of the public to review and comment on the revised version. These revisions include:

- Some additional revisions to the procedures by which the Air District makes its annual demonstration that the "offsets" requirements in the District's NSR program are at least as stringent as what EPA's federal regulations require; and
- Minor revisions to the Air District's emissions banking provisions in Regulation 2, Rule 4, to address deficiencies identified by EPA Region IX on September 14, 2017.

These further revisions are addressed in more detail in Sections III.A.8. and III.A.10., respectively, in this Staff Report. The Air District will consider all comments received on the earlier version of the Proposed Amendments published in August, 2017, along with comments received on the current version being published today. Members of the public do not need to resubmit any comments that were submitted on the August, 2017, version.

II. REGULATORY BACKGROUND

The Air District's permit requirements are set forth in District Regulation 2 (Permits). Regulation 2 contains a number of Rules governing various aspects of the District's permitting programs, of which four are the subject of the Proposed Amendments:

- Regulation 2, Rule 1 (Regulation 2-1), which establishes the general requirements that govern all of the permitting provisions in Regulation 2.
- Regulation 2, Rule 2 (Regulation 2-2), which contains the specific regulatory provisions that implement the Air District's NSR pre-construction permitting program.
- Regulation 2, Rule 4 (Regulation 2-4), which helps implement the NSR program in Regulation 2-2 by establishing procedures for "banking" emission reductions achieved when a source is shut down or curtailed, which can then be used to "offset" emissions increases from subsequent projects under the NSR program to ensure that there is no net emissions increase from all sources under the program.
- Regulation 2, Rule 6 (Regulation 2-6), which contains the regulations that implement the Air District's Title V operating permit program.

This section provides a background summary of the New Source Review and Title V permitting programs and the regulations that would be affected by the Proposed Amendments.

A. The Federal and State Regulatory Context

The Air District's New Source Review and Title V programs are District regulations, but the District adopts them within the context of federal and state requirements that govern how the programs must operate.

1. New Source Review

The genesis of the New Source Review program comes from the federal Clean Air Act (CAA). Congress created the federal NSR requirements in the 1977 CAA Amendments, which specify certain minimum elements that every local NSR program must contain. The Clean Air Act requires local programs to implement these requirements through the Act's system of "cooperative federalism," under which Congress establishes minimum requirements that must be in place in every state throughout the country, but leaves it up to each state or local agency to design its own program best suited to the needs of its specific situation. Each state or local agency is therefore required to develop and adopt an NSR program that meets (or exceeds) the minimum requirements of the federal NSR program, which it must then submit to the United States Environmental Protection Agency (EPA) for review and approval. Once EPA approves the program – as

part of what is known as the State Implementation Plan (SIP) – the program becomes effective under federal law for purposes of the Clean Air Act.

In 1988, the California legislature enacted the California Clean Air Act, which imposes additional state-law NSR permitting requirements. These requirements are in many ways modeled on the federal NSR program, but go beyond the federal program in certain aspects. Each air district in California is required to adopt an NSR program that meets these additional state-law requirements, as well as meeting the federal NSR program requirements administered by EPA.

The Air District's NSR program operates within the overlay of these state and federal requirements. The Air District has a certain amount of latitude to adopt an NSR program that is most suited to the specific circumstances facing the San Francisco Bay Area. But it must at a minimum satisfy the state and federal program requirements, and it is subject to review and approval by the California Air Resources Board and the federal EPA to ensure that it does.

2. Title V

The Title V program similarly comes from the federal Clean Air Act. Title V of the Act was added by Congress in the 1990 CAA amendments, and it requires each state or local agency to implement an operating permit program for "major" facilities, which are defined as facilities with the potential to emit more than 100 tons per year of regulated air pollutants (or, for hazardous air pollutants (HAPs), more than 10 tons per year of any single HAP or 25 tons per year of multiple HAPs). Title V programs must require major facilities to obtain an operating permit, which collects all of the various regulatory requirements applicable to the facility from local, state, and federal regulations and permits into a single permitting document. Title V does not create any new substantive regulatory requirements, but it improves the enforceability and transparency of the existing requirements by consolidating them into one comprehensive permit document. Having all of the requirements in one place makes it easier for facility staff to understand what they must do to comply with the applicable air quality regulations; makes it easier for inspectors to determine whether the facility is complying; and makes it easier for interested members of the public to understand what emissions sources a facility has, what regulatory requirements apply, and whether the facility is in compliance. In addition, the Title V permitting process provides an opportunity to impose monitoring requirements on emissions sources to ensure that they are in compliance, to the extent that any existing monitoring requirements may be inadequate.

As with the NSR requirements, it is up to the Air District to adopt its own Title V program to satisfy the federal requirements. The Air District retains some flexibility to

design its program as appropriate for the Bay Area, but at a minimum it must satisfy the requirements of the federal Clean Air Act.

B. The Air District's NSR Pre-Construction Permitting Program

1. NSR Applicability – New and "Modified" Sources

The NSR program in Regulation 2-2 is the Air District's fundamental permitting requirement for regulating "criteria" pollutant emissions. ("Criteria" pollutants are regional air pollutants for which health-based regional ambient air quality standards have been established.) The program requires a facility to obtain an NSR permit before it can install a new emission source or make a modification to an existing source. In order to be eligible for the permit, the facility must implement a number of substantive air pollution control requirements to limit emissions from the new or modified source.

The NSR program is aimed at new and modified sources because the installation of a new source or the modification of an existing source is the most appropriate time to implement pollution controls. Facilities can incorporate pollution control technologies most efficiently when they are planning for the installation of new equipment or the modification of existing equipment. Furthermore, the capital expenditure required for such pollution control technologies is most appropriate when a facility is installing new equipment or modifying existing equipment, as the facility will in most cases already be spending significant amounts for the facility upgrade project. Imposing additional costs to implement pollution controls is most appropriate at the time when the facility is already investing in facility improvements for other reasons.

For all of these reasons, the NSR program applies to new and modified sources. All of the substantive NSR program requirements in Regulation 2-2 specify that they apply when the Air District is issuing a permit for a new source or a modified source. "Modified source" is defined in Regulation 2-1-234 as any physical or operational change to a source that will result in either (i) an increase in the source's permitted emissions (or for sources that are not subject to any permit limits, an increase in the source's physical capacity to emit air pollutants); or (ii) a significant increase in the source's actual emissions.[1] Whenever a facility installs a new source or makes a "modification" to an existing source within the definition of Regulation 2-1-234, it must obtain an NSR permit under Regulation 2-2.

[1] The second element of this definition, regarding significant increases in actual emissions, was added in the 2012 Amendments. In addition, this element applies only to facilities over the "major facility" thresholds (100 tpy or 250 tpy, depending on the facility). "Major" facilities in the Bay Area include all of the region's refineries, as well as a number of other types of facilities such as power plants, large factories, and the like.

2. Substantive NSR Requirements

In order to obtain an NSR permit for a new or modified source, the facility must comply with the various substantive requirements of the NSR program. These substantive NSR programs elements vary somewhat depending on the pollutant involved. For pollutants for which the region is not in attainment of the applicable ambient air quality standards ("non-attainment pollutants"), the substantive NSR requirements are generally somewhat more stringent. For pollutants for which the region *is* in attainment of the applicable ambient air quality standards ("attainment pollutants"), the substantive requirements are generally somewhat less stringent, as the region's air quality challenges related to those pollutants are by definition not as urgent.

For *non-attainment* pollutants, the basic substantive requirements include (i) using pollution control equipment that limits emissions to the "Lowest Achievable Emissions Rate" (LAER), which in California is also referred to as the "Best Available Control Technology" (California BACT); and (ii) "offsetting" any new emissions increases with emission reductions from existing sources such that there will be no overall emissions increases from regulated sources throughout the region. These requirements applicable to non-attainment pollutants are generally referred to as "Non-Attainment NSR." Both the federal Clean Air Act and the California Clean Air Act impose Non-Attainment NSR requirements.

For *attainment* pollutants, the basic substantive requirements include (i) using the "Best Available Control Technology" (BACT) to limit emissions; and (ii) conducting an air quality impact analysis to ensure that the source being permitted will not jeopardize continued attainment of the applicable air quality standards or cause other adverse air quality impacts. These requirements applicable to attainment pollutants are referred to as "Prevention of Significant Deterioration" (PSD), because the purpose is to prevent the air quality in cleaner areas from deteriorating towards a non-attainment situation. Only the federal Clean Air Act imposes PSD requirements; this is not an element required by the California program.

This general breakdown between the requirements that apply to non-attainment pollutants and the requirements that apply to attainment pollutants reflects the minimum requirement that each NSR program must satisfy under the California and federal Clean Air Acts. In the Bay Area, however, the Air District goes beyond the minimum requirements in some respects. The Air District's NSR program applies certain aspects of the *non-attainment* NSR requirements to pollutants for which the region is designated as *attainment*. Thus, for example, the Air District applies the LAER/California BACT emissions control requirements and emissions offset requirements to many of the attainment pollutants, even though they are legally required only for non-attainment

pollutants. The Air District has always found it important to apply these NSR requirements more stringently than the bare minimum required by law in order to address the air quality challenges facing the Bay Area.

For full details on what the Air District's NSR program entails, please see District Regulation 2-2.

3. Historical Development of the Air District's NSR Program

The Air District's NSR program traces its history back to the 1970s, with numerous amendments since that time. The Air District has revised the program during this time period in order to improve its effectiveness, as well as to keep up with the evolution of the state and federal NSR requirements (among other reasons). The Air District amended the NSR regulations most recently in December of 2012 in order to address several issues.

One primary reason for the December 2012 revisions was to incorporate new requirements for fine particulate matter ($PM_{2.5}$). $PM_{2.5}$ has come under increased regulatory scrutiny in recent years as medical studies have led to heightened concerns about the health impacts of high levels of this pollutant. EPA adopted National Ambient Air Quality Standards for $PM_{2.5}$ in 2006, and in 2009 EPA designated the Bay Area as "non-attainment" of the $PM_{2.5}$ standards. The December 2012 amendments added permitting requirements for $PM_{2.5}$ to the Air District's NSR program.

A second important reason for the December 2012 revisions was to adopt PSD requirements (the requirements that apply for attainment pollutants) into the Air District's NSR program. For historical reasons, NSR implementation in the Bay Area was for many years split between the non-attainment NSR requirements, which the Air District implemented through its own NSR program in District Regulation 2-2, and the PSD requirements, which were administered under EPA's federal PSD regulations. This situation led to confusion and inefficiency, as a single source could be subject to two separate (but highly similar and overlapping) sets of regulations, and could be required to obtain two separate permits (containing similar and overlapping permit conditions) for the same operation. The December 2012 amendments adopted PSD provisions into the Air District's NSR program to address this situation. With the Air District having its own PSD requirements incorporated into its NSR program, there is now one single set of rules governing all aspects NSR regulation in the Bay Area, making NSR implementation and compliance simpler and more straightforward for all involved.

The 2012 Amendments also revised the regulatory language used in the Air District's NSR regulations to make the regulations clearer and easier to implement and enforce. The amendments also revised certain provisions to address concerns raised by EPA about how the Air District's program complies with the minimum requirements of the

federal NSR program. The bulk of the 2012 Amendments took effect on August 31, 2016, after approval by EPA as being consistent with the federal NSR program requirements.[2]

C. The Air District's Title V Operating Permit Program

As noted above, the Title V operating permit program does not impose any new substantive emissions-control requirements, but it enhances the enforceability and transparency of existing regulatory requirements by collecting all existing substantive requirements under District, state and federal regulations and permits into a single, comprehensive permitting document.

The District's Title V program was adopted in 1993 in Regulation 2-6. It requires every "major facility" as defined in Section 2-6-212 to obtain an operating permit, which must set forth all "applicable requirements" that apply to the facility as defined in Section 2-6-202. The permit application and the District's review of it must go through a public process with notice and an opportunity to comment, as set forth in Section 2-6-412. The District may also impose additional monitoring requirements as necessary to ensure ongoing compliance with all applicable requirements, per Section 2-6-409. Please see Regulation 2-6 for full details on what the Air District's Title V program entails.

The 2012 amendments affected the Title V regulations primarily with respect to GHG emissions. EPA began regulating GHG emissions in 2011, when it imposed GHG emissions standards for cars and light trucks, and the agency took the position that doing so meant that stationary GHG emissions sources needed to be subjected to Title V operating permit requirements as well. EPA took the position that Title V programs needed to require permits for GHG emissions sources with the potential to emit 100,000 tpy CO_2e or more. The District's 2012 Amendments added provisions to Regulation 2, Rule 6, to require Title V permits for GHG sources at this threshold level, among other more minor revisions.

D. Developments Since the Most Recent Amendments to the NSR and Title V Programs in 2012

There have been several regulatory developments since the Air District adopted the most recent revisions in December of 2012 that are relevant here. These recent

[2] The 2012 revisions to the NSR provisions in Regulations 2-1 and 2-2 did not take effect until EPA approved them effective August 31, 2016. *See* Final Rule, *Revisions to California State Implementation Plan; Bay Area Air Quality Management District; Stationary Source Permits*, 81 Fed. Reg. 50,399 (Aug. 1, 2016), codified at 40 C.F.R. §§ 52.220(c)(182)(i)(B)(*7*); 52.220(c)(199)(i)(A)(*9*); 52.220(c)(202)(i)(A)(*2*); 52.220(c)(429)(i)(E)(*1*)&(*2*); & 52.270(b)(16) (effective Aug. 31, 2016). The 2012 revisions to the banking provisions in Regulation 2-4 took effect immediately upon adoption on December 21, 2012, however. The Air District made the banking revisions effective immediately so that affected entities could start using them immediately to bank their emission reductions pending completion of the EPA approval process.

developments have driven the need for the further revisions that are the subject of the Proposed Amendments.

One important development is EPA's approval of the Air District's revised NSR program regulations as consistent with the Clean Air Act. EPA approved the District's NSR program as a general matter, but subject to a "limited disapproval" requiring the District to correct certain specific "deficiencies" identified by EPA.[3] EPA's limited disapproval requires the Air District to adopt further revisions to its NSR program and submit them to EPA for approval within 18 months (i.e., by the end of February of 2018). If the Air District does not do so, EPA has the authority to impose sanctions on the Bay Area and step in to implement NSR federally within the region. The need to respond to EPA's limited disapproval is the primary reason District staff have developed the Proposed Amendments.

EPA has also followed a similar process with respect to the banking provisions in Regulation 2-4, although on a more delayed schedule. EPA did not address the Air District's 2012 revisions to its banking regulations in the 2016 limited approval and limited disapproval of the rest of the District's NSR regulations. Instead, it has addressed the banking provisions in a proposed conditional approval published on September 14, 2017.[4] EPA is proposing to approve the banking provisions in Regulation 2-4, but conditioned on the Air District revising the provisions to address some additional deficiencies. This conditional approval will require the Air District to address these identified banking deficiencies in the same manner as with the deficiencies identified in the rest of the NSR provisions discussed in the preceding paragraph. If the Air District does not do so, the conditional approval will become a disapproval, starting the process outlined above that can eventually lead to sanctions.

A second important development is the Supreme Court's 2014 decision in the *Utility Air Regulatory Group v. EPA* case, 134 S.Ct. 2427 (2014), which held that the Clean Air Act does not require permits under either the NSR program or the Title V program for any facility based solely on its GHG emissions. This was a major change from EPA's interpretation, which held that a facility can become subject to both permitting programs based on its GHG emissions alone, even if it does not have emissions of any other pollutant exceeding the relevant applicability thresholds. The Supreme Court's decision still allows EPA to regulate GHG emissions under these permitting programs if a facility triggers permitting requirements because of *other* regulated air pollutants besides GHGs. But the decision means that GHGs cannot, by themselves, make a facility

[3] *See ibid*.

[4] *See* Proposed Rule, *Revisions to California State Implementation Plan; Bay Area Air Quality Management District; Emission Reduction Credit Banking*, 82 Fed. Reg. 43,202 (Sept. 14, 2017).

subject to permitting requirements under either program. The Proposed Amendments to the NSR and Title V programs address this development as well.

In addition to these regulatory developments, Air District staff have also benefitted from further experience in implementing the regulations as revised in 2012. The Proposed Amendments are the result of this experience as well, as discussed further in the next section.

III. PROPOSED AMENDMENTS

This section provides a detailed description of each of the proposed revisions to the Air District's permitting regulations.

A. Revisions to Address "Deficiency Items" Identified by EPA

As noted above, the Air District's NSR regulations must be approved by EPA in order to be effective under the federal Clean Air Act. EPA has approved (or is in the process of approving) the 2012 Amendments, but subject to a requirement that the District correct certain "deficiencies" identified by EPA.[5] The Proposed Amendments will address these identified deficiencies, as outlined below.

These revisions are primarily minor and technical in nature, and they will fulfill the ultimate intent of the 2012 Amendments. Those amendments were intended to make the Air District's NSR program implement all federal NSR requirements consistent with the federal Clean Air Act. To the extent that any of the specific provisions the Air District adopted in 2012 Amendments did not fully accomplish that end in the areas identified by EPA in its limited disapproval, the Proposed Amendments will address any such oversights. In doing so, these further revisions will ensure that the Air District achieves its ultimate purpose of implementing an approvable NSR program that satisfies all applicable requirements of the federal Clean Air Act.

The paragraphs below outline each of EPA's identified deficiency items and how the Proposed Amendments will address it.

1. Agricultural Source Terms

EPA noted that the terms "agricultural source" used in Section 2-1-239 and "large confined animal facility" used in Section 2-1-424 rely on definitions and provisions in other District rules that have not been approved as part of the State Implementation Plan. To address this concern, the Proposed Amendments remove the language that EPA finds objectionable, as it is redundant and/or does not serve any regulatory purpose anymore. These changes will address EPA's concerns without changing the substantive meaning of the regulations in any way.

With respect to Section 2-1-239, this provision sets forth the definition of "agricultural source" for purposes of Regulation 2, Rule 1. The essential function of the definition is to specify that an agricultural source is a source of air pollution (or group of

[5] *See supra* fn. 2 (referencing EPA's limited approval and limited disapproval of the bulk of the 2012 revisions to the NSR regulations) and fn. 4 (referencing EPA's proposed conditional approval of the 2012 revisions to the emissions banking provisions in Regulation 2-4).

such sources located on the same property or on contiguous properties under common ownership or control) that is used in the production of crops or the raising of fowl or animals. This is what the definition does in its initial language. After this initial language, however, the definition then goes on to provide three subsections identifying a number of different types of sources that are covered by this general language, including confined animal facilities, internal combustion engines, major facilities, and any other source that is otherwise subject to Air District regulation. It is this additional language that has given rise to EPA's concern. This additional verbiage is redundant, however, because all of these specific categories of sources are already covered by the general language at the beginning of the definition referring to "a source" of air pollution that is being used for agricultural purposes. Since this additional language is not necessary, the simplest way to address EPA's concern is to delete it entirely and rely instead on the general language at the beginning of the regulation. The Proposed Amendments do this, as well as making some additional grammatical clarifications to the language of the definition.

With respect to Section 2-1-424, this provision sets forth the procedures that apply when a source that is exempt from permitting requirements loses its exemption because of a change in the regulations and must apply for a permit. In most cases, the owner/operator must submit a complete permit application within 90 days of being notified by the Air District that the source now requires a permit. For large confined animal facilities, however, Section 2-1-424 allows 180 days to submit the application. This provision was added in 2006, when the District started regulating large confined animal facilities. The Air District did not believe that there actually were any such facilities within the Bay Area that would have to get permits, but in the event that there were, the District wanted to provide 180 days for such facilities to submit permit applications, instead of the default 90 days. This resulted in the language that EPA is concerned about. Now, over a decade later, it has become clear that the District was correct and that there were not in fact any such facilities within the Bay Area that became subject to permit requirements because of the loss of that exemption. As a result, the provision addressing large confined animal facilities that were in existence as of July 17, 2006, no longer serves any purpose and can be deleted, which will address EPA's concern. The proposed revisions to Section 2-1-424 do so, as well as making some grammatical clarifications to the regulatory language.

Finally, EPA Region IX staff have also requested that the Air District address a similar reference to large confined animal facilities in Section 2-1-113.1.2, which is the exemption for agricultural sources with emissions under 50 tpy. The Air District does not want to exempt large confined animal facilities from having to obtain a permit, even if their emissions are below 50 tpy. Accordingly, this exemption is written to apply to agricultural sources "except for large confined animal facilities subject to Regulation 2, Rule 10." EPA

did not object to this language in its limited disapproval, but EPA Region IX staff have subsequently identified it and asked the Air District to address it. The Proposed Amendments address this point by removing the relevant language from Section 2-1-113.1.2, and instead specifying in the definition of "agricultural source" in Section 2-1-239 that, for purposes of the exemption, agricultural sources do not include commercial operations that keep and feed large numbers of animals over the thresholds that would make them ineligible for the exclusion. By restricting the definition of "agricultural source" in this way, the regulation will limit the scope of the exemption for agricultural sources so that it does not exempt large animal-feeding operations from Air District permitting requirements. But it will do so in a way that does not use the language that EPA Region IX staff asked the Air District to remove.

2. Federal Regulatory Terms Incorporated by Reference in "Federal Backstop" Test

In the 2012 Amendments, the Air District adopted a new applicability provision for its NSR program to respond to EPA concerns that the District's existing applicability test for "modifications" was less stringent than federal requirements. Specifically, EPA was concerned that a facility could make a change to a source that would constitute a "major modification" under the federal NSR requirements, but would not be a "modification" under the District's NSR program. The District noted that this would be a highly unlikely scenario, as the District's "modification" definition is much broader and more stringent than the federal definition, and EPA agreed. Nevertheless, there was at least a hypothetical concern that such a scenario could arise, and so the Air District revised its "modification" definition to address the concern.

The revision the Air District made to address this concern was to add a second element to the District's "modification" definition in Section 2-1-234 to incorporate the federal "major modification" definition as a "backstop" to the Air District's longstanding "modification" test. Under the revised "modification" definition, a change being made at a source is a "modification" and is subject to NSR permitting requirements if it triggers either (i) the District's longstanding "modification" definition (subsection 2-1-234.1), or (ii) EPA's "major modification" definition (subsection 2-1-234.2). This second element ensures that the District's NSR program cannot be any less stringent than the federal requirements, as any change that would be subject to the federal program as a "major modification" by definition will be subject to NSR requirements under the District's program. The Air District refers to this second element of the "modification" test as the "Federal Backstop," as it is intended as a backstop mechanism to ensure that any change to a source that is not caught by the District's longstanding "modification" test in subsection 234.1 will be caught by the federal "major modification" test in subsection 234.2 (to the extent that it is the kind of change that should be subject to NSR permitting requirements).

The Air District implemented this change by incorporating by reference EPA's federal regulations defining "major modification" as set forth in 40 C.F.R. Sections 51.165 and 51.166. (*See* Section 2-1-234.2.) EPA generally approved of this incorporation-by-reference approach, but it pointed out that some of the language in the specific provisions the Air District incorporated was not appropriate for the District's regulatory purposes. Specifically, EPA noted that some of the language in the federal regulations the District incorporated establishes *what state agencies need to put in their regulatory programs*, and not *what individual regulated facilities need to do to comply*. Since the District's NSR Rule sets forth requirements for individual regulated facilities, not for state agencies adopting NSR programs, this language is not appropriate for incorporation-by-reference.

To address this concern, the Proposed Amendments make certain changes to the language in Section 2-1-234.2 incorporating the federal requirements by reference. These changes follow the approaches suggested by EPA to address the concern. The changes are a non-substantive technical amendment only, and they are intended only to address EPA's concern about the specific federal regulatory language that the Air District incorporated by reference in Section 2-1-234.2. They do not change the substance or intent of the "Federal Backstop" test as adopted in the 2012 Amendments.

3. Making PSD Requirements Applicable to Major Sources of Non-Attainment Pollutants

One of the major revisions adopted in the 2012 Amendments was to create new Air District permitting requirements to implement the "Prevention of Significant Deterioration" (PSD) provisions of the federal Clean Air Act, as discussed above in Section II.B.3. EPA raised a concern regarding the applicability test for the District's PSD provisions as set forth in Section 2-2-224, the definition of "PSD Project." This provision defines the applicability of the PSD requirements, because those requirements apply by their terms only to "PSD Projects."

EPA's concern relates to subsection 224.1, the first element of the "PSD Project" applicability test in Section 2-2-224. Subsection 224.1 requires that the facility where the project is located must have emissions over the Clean Air Act's "major" facility thresholds (100 tpy or 250 tpy, depending on the type of facility) in order to be a "PSD Project." But as currently written, subsection 224.1 applies only to "PSD Pollutants," which are defined as pollutants for which the Bay Area is not designated as non-attainment. As a result, having emissions of non-attainment pollutants over the "major" facility thresholds is not sufficient to bring the facility within the District's PSD requirements as subsection 224.1 is currently written. As EPA notes, however, the federal PSD requirements target facilities that are over the applicable "major" facility thresholds for *any* regulated NSR pollutant, including non-attainment pollutants. EPA's concern is that subsection 224.1 as currently

written improperly excludes facilities that are over the "major" facility thresholds for non-attainment pollutants.

To address this concern, the Proposed Amendments revise Section 2-2-224.1 to specify that a project can be a "PSD Project" if it is located at a facility that exceeds the "major" facility thresholds for any regulated NSR pollutant as defined in EPA's federal PSD regulations.[6]

4. Requiring EPA Approval To Use Alternative Computer Models for Air Quality Analysis

One important element of the PSD requirements is that project applicants must use computer modeling to assess what air quality impacts may result from their project. The purpose of this modeling is to ensure that the project will not result in any "significant deterioration" in air quality. EPA has published a regulation that identifies certain computer models that are approved for use in conducting this modeling exercise, and the Air District's PSD regulations require applicants to use the models specified by this regulation in most circumstances. If the specified model is inappropriate for some reason, however, the regulations allow an applicant to use an alternative model as long as the Air District approves it in writing. (*See* Section 2-2-305.3.) EPA approved this provision, but it stated that it wanted the opportunity to review and approve any use of alternative models. The Proposed Amendments therefore include a revision to Section 2-2-305.3 to specify that an applicant must obtain written approval from EPA, as well as from the District, before using an alternative model.

5. Facility Categories For Which Fugitive Emissions Must Be Included in PTE Calculations

Fugitive emissions are included for nearly all purposes in NSR permitting.[7] The only exception involves the threshold for what constitutes a "major" facility under the federal NSR requirements. In determining whether a facility exceeds the federal "major" facility thresholds, fugitive emissions are counted only if the facility falls within certain specific source categories. The Air District's NSR regulations address this issue in Section 2-2-217, the definition of "Major Facility"; and in Section 2-2-224.1, which is the first element of the "PSD Project" definition discussed above, addressing whether the

[6] Note that the project must still have a significant increase and a significant net increase in PSD Pollutant emissions under Sections 2-2-224.2 and 2-2-224.3 in order to be a "PSD Project," and these requirements are not changing. The significant increase test and significant net increase test will still apply for PSD Pollutants only, and not for non-attainment pollutants.

[7] Fugitive emissions are emissions from unintended openings in process equipment, emissions occurring from miscellaneous activities relating to the operation of a facility, and those emissions which could not reasonably pass through a stack, chimney, vent or other functionally equivalent opening. (*See* Reg. 2-1-203.)

facility exceeds the federal "major" facility thresholds. Facilities that are not in any of the specified source categories are not require to count any fugitive emissions when applying these provisions.

The Air District addressed this point in the 2012 Amendments by specifying in Sections 2-2-217 and 2-2-224.1 that fugitive emissions are counted only if the facility is within one of the 28 source categories identified in Section 169(1) of the Clean Air Act. The District also included a specific provision addressing this point, Section 2-2-611, that explains the situation in detail.

EPA generally approved of this approach, but it noted that in addition to the 28 source categories listed in Clean Air Act Section 169(1), the federal program also requires fugitives to be counted for any other stationary source category that was regulated under section 111 or 112 of the Clean Air Act as of August 7, 1980. To address this concern, the Proposed Amendments add language to Section 2-2-611 specifying that fugitive emissions are counted for facilities that are in source categories that were regulated under section 111 or 112 of the Clean Air Act as of August 7, 1980. The Proposed Amendments also make corresponding revisions to Sections 2-2-217 and 2-2-224.1 referencing the provision in Section 2-2-611 where the rule for counting fugitive emissions in specified.

For ease of implementation of this revision, Air District staff intend to develop a list of additional source categories that were regulated under section 111 or 112 of the Clean Air Act as of August 7, 1980. District staff will publish this list on the District's website so that affected facilities and members of the public will know what specific categories are covered.

6. Requirement to Evaluate Impacts on Class I Areas

The federal NSR program requires certain projects to undertake an analysis of potential impacts on visibility and other air quality related values in "Class I" areas, which are special areas such as national parks that have been designated for heightened air quality protection. The 2012 Amendments required projects subject to federal NSR requirements to undertake a Class I area analysis if they are within 100 km of a Class I area. EPA noted that the federal NSR requirement is for a Class I area analysis for any project that "may affect visibility" in a Class I area, and expressed a concern that a bright-line distance threshold of 100 km could exclude some sources beyond 100 km from a Class I area that may still affect visibility within the Class I area despite the long distance. EPA explained that the Federal Land Managers (FLMs) responsible for the Class I areas have published guidance on how to determine when a Class I area analysis is required, and that the Air District could address this issue by referencing that guidance. As EPA stated in its Response to Comments document, "the FLMs use the Federal Land

Manager's Air Quality Related Workgroup guidance (FLAG) in determining when a project may affect a Class I area. . . . BAAQMD may consider referencing the FLAG guidance . . . ."

The Proposed Amendments address this limited disapproval item by referencing the FLAG guidance as suggested by EPA. Specifically, this revision states in Section 2-2-401.4 that any project that may affect visibility in any Class I area must include a Class I area impact analysis in its application materials – with the determination of whether a project may affect a Class I area to be made according to the FLAG guidance. Sections 2-2-402 and 2-2-404.4 then state that if a project is subject to the Class I area analysis requirement in Section 2-2-401.4, the APCO must notify EPA and the relevant FLM(s) about the permit application for the project, and must send those agencies notice of the APCO's preliminary decision whether to approve the application.

In addition, EPA Region IX staff have informally requested another revision, which was not identified as a deficiency in EPA's limited disapproval. This revision concerns a requirement that for PSD projects that may impact Class I areas, the Class I area analysis must evaluate the potential for impacts to other air quality related values besides visibility. EPA requested that where the Class I provisions currently reference only visibility, the language should be expanded to address other air quality related values as well. The Proposed Amendments include corresponding revisions to address this request as well.

7. Time Limits for Providing Offset Refunds

The Air District's NSR program includes an important requirement that facilities need to "offset" any emissions increases from new or modified sources by providing emission reductions from existing sources so as to ensure no overall increase in emissions region-wide. Facilities can offset their new emissions by shutting down existing equipment at the same location, or they can obtain offsets from the District's emissions bank. Offsets in the emissions bank are emission reduction credits from other facilities that the District has evaluated and approved as creditable, and which can be traded between facilities. If a facility does not have on-site emission reduction credits it can use, it must provide offsets from the emissions bank in order to receive its NSR permit.

The Air District has historically had a provision that allows for a facility to obtain a refund for unused offsets (banked emission reduction credits) it has submitted in two circumstances. First, if the facility submits more offsets than are required to obtain the permit, the facility can obtain a refund of any excess over and above what was required. Second, if the facility never builds or operates the source that was authorized by the permit, and the permit has expired or been surrendered, the facility can get its credit back. This provision is currently in Section 2-2-411.

EPA approved this refund provision, but it requested that the Air District establish time limits on how long after permitting the facility can seek a refund. To address this point, the Proposed Amendments establish a time limit of two years after issuance of an authority to construct, or 6 months after issuance of a permit to operate, beyond which the facility would no longer be eligible to obtain a refund. Two years from issuance of an authority to construct is a reasonable amount of time to allow facilities to request a refund, and it should not be overly burdensome for facilities that are eligible for a refund to submit a request during this time frame. Two years also corresponds to the lifespan of an authority to construct under Section 2-1-407. Thus, in cases where the facility is eligible for a refund because it did not actually use its authority to construct to go forward and build a project, the facility will have to have decided within two years of issuance or renewal of the authority to construct whether it intends to construct the source and use the offset credit, or abandon the project and ask for its offset credit back. In cases where the facility decides to go forward and build the project, but it has provided more offsets than are actually necessary, it can obtain a refund of the excess after it builds the project and obtains its permit to operate, but a shorter time frame is appropriate. In such cases, the facility would have to apply to get its excess credit back within 6 months after issuance of the permit to operate. The Proposed Amendments make these revisions in revised Section 2-2-411. (Note also that the Proposed Amendments remove the language in subsection 411.2 referencing issuance of a permit to operate in situations where the facility is eligible for a refund because it did not use its authority to construct to build the project. In such cases, no permit to operate is issued, so this language is redundant.)

8. Offsets Equivalence Demonstration

EPA's deficiency items require the Air District to make several changes to the "Offsets Equivalence Demonstration" procedures in Section 2-2-412. This provision sets forth a mechanism under which the Air District demonstrates to EPA and to the public that the District's offsets program is at least as stringent as what is required under the Clean Air Act and EPA's implementing regulations. Having this demonstration requirement allows EPA to approve the Air District's offsets requirements as being sufficient to satisfy federal requirements, even though the Air District implements its requirements in a slightly different manner than EPA's federal program does.

The Offsets Equivalence Demonstration provision was originally created in 2000 to address EPA Region IX's interpretation of the requirement that emission reduction credits must be "surplus." This means that in order to be creditable, an emission reduction must be over and above what is legally required anyway. To ensure that this requirement is met when a source is shut down or curtailed to generate emission reduction credits,

the source's baseline emissions rate needs to be adjusted to reflect the most stringent regulatory requirements currently in effect. This is known as the "surplus" adjustment.[8]

The Air District's credit-generation rules require emission reduction credits to be surplus-adjusted at the time the credit is generated. But EPA Region IX staff have historically taken the position that credits need to be adjusted again at the time they are used, if there are any new or additional regulations that have come into effect between the time of generation and the time of use. This means that in some cases the Air District may be obtaining fewer offsets for a particular permit under its approach than EPA Region IX would require for that permit under its approach.

Overall, however, the Air District's offsets requirements are far more stringent than the federal requirements, because the District requires offsets at a much lower threshold than the federal regulations do. The federal offsets requirements apply only to facilities emitting over 100 tons per year, and only when those sources make major modifications, whereas the Air District's offsets requirements apply to facilities emitting as little as 10 tons per year, and for any modification that will increase the source's emissions potential, not just major modifications. This means that the Air District obtains more offsets in total from all sources than EPA Region IX would require, even though EPA Region IX's approach may obtain more from certain individual permits, because the District obtains offsets in many situations where EPA's program does not even apply.

The Air District created the equivalence demonstration procedure under Section 2-2-412 to address this situation. The provision requires the District to make a demonstration each year that the total amount of offsets the District has obtained from all sources (without conducting an additional surplus adjustment at the time of credit use) exceeds the total amount of offsets that EPA Region IX would have required for major sources and major modifications (with the additional surplus adjustment at the time of credit use). This annual demonstration provides a mechanism to confirm that the District's program is in fact at least as stringent as what the federal NSR regulations require. The Air District now needs to make a number of revisions to the current equivalence demonstration process to address certain concerns raised by EPA Region IX.

[8] The "surplus" adjustment has also sometimes been called the "RACT" adjustment. This term arose because many of the regulations for which the baseline must be adjusted are regulations that have been adopted to require "Reasonably Available Control Technology" – or "RACT" – to control emissions. These regulations are known as RACT regulations, and so adjusting the baseline to reflect these regulations is sometimes referred to as a RACT adjustment. Surplus adjustment is a more comprehensive term, however, as the adjustment must include all applicable regulations, not just RACT regulations.

- *Additional Provisions To Address EPA Region IX's Position That Sources Must Provide Offsets For More Emissions Than They Can Possibly Emit*

The Air District needs to revise the equivalence demonstration procedures to address a second area that EPA Region IX has recently identified where the Air District's offset requirements apply somewhat differently than the federal offset requirements, in addition to the "surplus-at-time-of-use" issue discussed above. This second difference involves EPA Region IX's interpretation of how to calculate the amount of offsets that are required when a source is modified.

The Air District has always required sources to provide offsets up to the maximum amount of emissions that the source could possibly emit under its permit limits and its physical and operational design – what the regulations call the source's "potential to emit." If a source has already provided offsets for its maximum potential to emit, then the Air District requires it to provide additional offsets only if a modification will increase its potential to emit further. The Air District's regulations require the source to provide additional offsets for the amount of the increase in potential to emit, to ensure that all of the source's emissions will be offset up to the maximum amount that could possibly be emitted into the atmosphere.

EPA Region IX, however, interprets the federal offsets provisions to require offsets for the difference between the source's *actual emissions* before the modification and its maximum potential to emit after the modification. This means that a source being modified will still have to provide additional offsets if its actual emissions are less than its full potential to emit (which is nearly always the case).

The Proposed Amendments will resolve this difference in approach by requiring the Air District to address it in the equivalence demonstration, along with the difference in the two agencies' approach to the "surplus-at-time-of-use" calculation discussed above. That is, in addition to showing that the Air District is obtaining more offsets than EPA Region IX would require under its surplus-at-time-of-use interpretation, the demonstration will also have to show that the Air District is obtaining more offsets than EPA would require under its interpretation of the amount of offsets required when a source is modified. Making this demonstration will ensure that the Air District is in fact obtaining more offsets overall than are required under the federal regulations, taking into account both of these areas where the Air District's program takes a different approach than EPA Region IX does.

- *Revisions To Provide More Detail On How The Equivalence Demonstration Is Conducted*

The Proposed Amendments will also expand on the equivalence demonstration procedures set forth in Section 2-2-412 to provide additional specificity and detail on how exactly the demonstration is conducted. These changes will increase the certainty and transparency of the process by making it clear to all stakeholders what the demonstration will involve and how it will ensure that the Air District's offsets provisions do in fact meet or exceed all federal requirements. These revisions will not fundamentally change the way the Air District currently makes the demonstration (other than to incorporate the specific changes outlined herein). But they will improve the regulation by providing a step-by-step outline of how the Air District will demonstrate equivalence so that all interested parties can clearly understand how the process works.

The Proposed Amendments specify in a high level of detail that the process for making the equivalence demonstration is as follows:

At the end of each year, Air District staff will look back at all of the permits the District has issued that year for major sources and major modifications (i.e., the permits subject to the federal offsets requirements). These sources are called "Federal Major NSR Sources," as defined in proposed new Section 2-2-228.

For each of these major permits, Air District staff will examine the amount of offsets that were required under the Air District's approach compared to the amount that EPA Region IX would have required under its calculation methodology. Any shortfall between what the Air District required and what EPA Region IX would have required is called the "Federal Offsets Baseline Shortfall," as defined in proposed new Section 2-2-229.

Staff will then review the amount of offsets that were provided for the permit, and will examine whether EPA Region IX would have disallowed some of the offset credit under its "surplus-at-time-of-use" adjustment as discussed above. Any shortfall between the amount of credit that the Air District allowed and the amount that EPA Region IX would have allowed is called the "Federal Surplus-at-Time-of-Use Shortfall, as defined in proposed new Section 2-2-230.

Staff will then add the Federal Offsets Baseline Shortfall and the Federal Surplus-at-Time-of-Use Shortfall for each Federal Major NSR Source permit to obtain the total shortfall for that permit; and then add up all the shortfalls for all the Federal Major NSR Source permits issued during the year to obtain the total shortfall for the year. These calculations are set forth in proposed new sections 2-2-412.1 and 2-2-412.2, respectively. The total shortfall represents the total amount by which EPA Region IX would have required more offsets from Federal Major NSR Sources than what the Air District collected from such sources.

In order to demonstrate that the Air District's offset program is equivalent to the federal program, the District will show that it has obtained sufficient offsets from *non-major* sources to make up for this shortfall with respect to Federal Major NSR Sources. The District will make this showing as provided in Section 2-2-412.3. The District will do so by identifying "Equivalence Credits," which are credits associated with non-major permits as defined in proposed new Section 2-2-231. These credits can include banked credits from the Air District's emissions bank that have been provided in connection with permits issued for non-major sources, as well as un-banked emission reduction credits that facilities have relied on as "contemporaneous onsite emission reduction credits" in order to comply with the District's offsets requirements for non-major sources.[9] In addition, they can also include so-called "orphan" $PM_{2.5}$ reductions, which are reductions from facilities that shut down their sources some time ago but did not bank the reductions at the time (as will likely be the case with most historical $PM_{2.5}$ reductions, since the Air District's regulations did not even allow for $PM_{2.5}$ banking until December of 2012).

To demonstrate equivalence, the Air District will identify sufficient Equivalence Credits to make up for the full amount of the shortfall for the year identified under Section 2-2-412.2 (if any). Equivalence Credits can only be used once in an equivalence demonstration: as specified in proposed Section 2-2-412.3.1, if the Air District uses a credit in one year's demonstration, that credit cannot be used again in a subsequent demonstration. In addition, all Equivalence Credits will need to have a "surplus" adjustment applied to reflect EPA Region IX's interpretation with respect to the "surplus-at-time-of-use" issue discussed above. The Air District will make this adjustment under proposed Section 2-2-412.3.2 according to an EPA-approved methodology. The Air District will use only the adjusted amount of credit for purposes of making the equivalence demonstration.

When the Air District has identified sufficient Equivalence Credits to fully make up the shortfall identified from all of the Federal Major NSR Source permits issued during the year, the District will document the demonstration in writing. This will involve a detailed explanation of how the Air District calculated the shortfall for the year under proposed Section 2-2-412.1 and 2-2-412.2, as well as an identification of all of the Equivalence Credits used to make up for the shortfall and demonstrate equivalence under proposed Section 2-2-412.3. With respect to the Equivalence Credits, the District will document that the emission reductions reflected in those credits satisfy what EPA calls the "offset integrity criteria," which are the requirements that the reductions be real, permanent,

[9] The District's regulations allow facilities to use unbanked emission reduction credits, but only if they were generated at the same facility where they were used (i.e., "onsite"), and only if they were generated within a five-year "contemporaneous" period before they are used.

quantifiable, enforceable, and surplus. The documentation that Equivalence Credits satisfy these integrity criteria will come from the following sources:

- For Equivalence Credits that are banked credits that were provided in connection with prior non-major permits (*see* Section 2-2-231.1), the Engineering Evaluation Report the Air District prepared when the credits were banked will document how the emission reductions satisfy the integrity criteria. Banking applicants need to show that their emission reductions satisfy these criteria in order to bank the reductions, and so the Engineering Evaluation Report prepared for the banking application will summarize how the reductions do so.
- For Equivalence Credits that are "onsite contemporaneous emission reduction credits" that were used in connection with prior non-major permits (*see* Section 2-2-231.2), the Engineering Evaluation Report prepared for the permit will document how the emission reductions satisfy the integrity criteria. If permit applicants want to rely on onsite contemporaneous emission reduction credits, they need to demonstrate that the reductions satisfy the integrity criteria as part of their permit application. The Engineering Evaluation Report prepared for the permit will document how they do so.
- For Equivalence Credits that are orphan $PM_{2.5}$ emission reduction credits (*see* Section 2-2-231.3), the Air District will evaluate the reductions to confirm that they satisfy all of the offset integrity criteria directly in the equivalence demonstration, as there will not be any previously-prepared documentation containing this type of analysis. The Air District will review the source that was shut down to generate the emission reductions and will confirm that the reductions are real, permanent, quantifiable, enforceable, and surplus of current regulatory requirements. The Air District will also confirm that the emission reductions have not previously been used as Emission Reduction Credits, in order to prevent "double counting" by using the same reductions twice for different purposes.

In this way, the Air District will guarantee in a publicly transparent fashion that the District has obtained sufficient offsets to make up for any identified shortfall, and that the emission reductions used in the demonstration satisfy all of EPA's "integrity criteria." The Air District will also make all of the underlying documents (e.g., banking applications, Engineering Evaluation Reports, etc.) available for public review when it publishes its equivalence demonstration report. The Air District will not be allowed to use any emission reductions in the equivalence demonstration unless sufficient documentation exists to confirm that the reductions satisfy all of the requirements to constitute "Equivalence Credits" as outlined above.

Once the Air District has completed the equivalence demonstration, it will submit the demonstration (with all supporting documentation) to EPA, and will also make it

publicly available and feature it prominently on the Air District's website so that it may be easily accessed by interested members of the public. This process will allow EPA and all other interested parties to review the demonstration and confirm that the Air District's offsets requirements are in fact at least as stringent overall as what EPA Region IX would require under its federal offsets regulations.

- *Addition Of A Backstop Mechanism That Will Apply In The Event The Air District Cannot Make The Equivalence Demonstration*

EPA Region IX also expressed a concern in its 2016 limited disapproval that Section 2-2-412 does not provide any remedy in the event that the Air District is unable to make the required demonstration. The Air District has never had any difficulty making this demonstration because, as noted above, the District's offsets program as a whole is much more stringent than what the federal regulations require. Nevertheless, EPA Region IX has directed the Air District to provide an explicit remedy that would apply in the unlikely event that the Air District is ever unable to make the demonstration. EPA Region IX requested that the District specify that in the event that the District does not make the required demonstration, then permit applicants applying for permits for federal major sources and major modifications must provide the full amount of offsets that would be required federally under EPA Region IX's regulatory approach, until such time as the District has made up any shortfall.

The Proposed Amendments will make this change, with revised regulatory language that will be set forth in a new Section 2-2-415. The revised language states that if there ever is a shortfall situation, then the APCO will require additional offsets for all new major sources and major modifications according to EPA Region IX's approach. If the APCO fails to make the required demonstration by the applicable deadline, then every permit for a major stationary source or major modification issued after that date must provide offsets at that level, until such time as the APCO has obtained sufficient offsets from non-major sources and modifications such that it can make up for the shortfall and demonstrate equivalence once again (and if the shortfall continues for multiple years, the APCO will have to demonstrate that it has made up for all of the shortfalls for all years before equivalence can be demonstrated).[10]

[10] This does not mean that the APCO will go back and require additional offsets from existing sources that have already received NSR permits. Existing permits that have already been issued will not be reopened. This requirement will apply prospectively only: That is, it will require only that any *future* permits for new and modified sources that are issued *after* any failure to make an equivalence demonstration will have to provide additional offsets according to EPA's federal approach.

- *Addition Of $PM_{2.5}$ As A Pollutant Addressed In The Demonstration*

The Proposed Amendments will also add $PM_{2.5}$ as a pollutant subject to the equivalence demonstration requirement, in addition to NOx and POC, which are the pollutants currently subject to this provision. $PM_{2.5}$ is also a federal non-attainment pollutant, and so the Air District needs to demonstrate that its offsets program is at least as stringent as the federal requirements for this pollutant as well.

- *Elimination Of The Requirement For The Air District To Provide Offsets To Make Up For Any Shortfall*

The Proposed Amendments will also remove the language in the existing regulation stating that if the Air District cannot make the equivalency demonstration, then the District will make up any shortfall by providing credits from the Small Facility Banking Account or by obtaining the credits itself. This language regarding how to address any shortfall is being replaced by the concept described above under which major facilities will provide offset credit calculated according to EPA Region IX's approach. In the event that there is any shortfall in the amount of credit that major facilities have provided, it would not make sense to make up that major facility shortfall at the expense of small facilities, which is what would happen if the Small Facility Banking Account is depleted to make up the shortfall. Similarly, it would not make sense to require the District to spend public money to purchase credits on the open market to do so, which is what would happen if the District had to make up any shortfall itself. Having major facilities adjust their credits as outlined above is a preferable way to handle this potential concern, compared to having the burden fall on small facilities or on the Air District's financial resources.

9. Emission Reduction Credit for Shutting Down "Fully Offset" Sources

The Air District's rules for determining the amount of emission reduction credit that is available when a facility shuts down or curtails operation of a source depend on whether or not the source's emissions were "fully offset." For a source that is not fully offset, the amount of credit available is based on the source's *actual emissions* during a 3-year baseline period before the shutdown. For a source that is fully offset – i.e., the facility provided emission reduction credits for the full amount of the source's permitted emissions at the time of permitting – the amount of credit available is based on the source's *maximum permitted emissions*, even if its actual emissions were less than the maximum permitted amount during the baseline period. These rules are contained in Sections 2-2-605.1 (non-fully-offset source) and 2-2-605.2 (fully offset source), as well as in Section 2-2-213 (definition of "fully offset source").

EPA has taken the position that the federal NSR requirements do not allow for the source's maximum permitted emissions (also known as "allowable emissions" or "potential to emit") to be used as the baseline for determining the amount of emission

reduction credit available when a source is shut down or curtailed. EPA has taken the position that the source's actual emissions must be used to establish the baseline in all cases, and has requested that the District remove the provision allowing maximum permitted emissions to be used for "fully offset" sources.

The Proposed Amendments address this point by removing the provision that allows "fully offset" sources to use their permitted emissions to establish the baseline for the emission reduction credit calculation. The Proposed Amendments remove current Section 2-2-605.2 (the provision for fully offset sources), and instead make the actual-emissions baseline provision in current Section 2-2-605.1 apply in all cases. The revisions also reorganize the remaining regulatory language somewhat. In addition, a related revision removes Section 2-2-213, the definition of "fully offset source," which will be redundant when the special baseline provision for fully offset sources is removed.

10. Revisions to Banking Provisions

As noted above, EPA has proposed a conditional approval of the Air District's banking provisions in Regulation 2, Rule 4, subject to two deficiency items that need to be addressed.[11] Air District staff are proposing to address these items as follows.

First, EPA is concerned that Regulation 2-4 does not contain sufficient provisions to ensure that emission reductions to be banked satisfy what EPA calls the "offset integrity criteria," which are the requirements that the reductions be real, permanent, quantifiable, enforceable, and surplus. These requirements are already part of the current regulation, because in order for emission reductions to be bankable they must satisfy the definition of "Emission Reduction Credit" set forth in the regulations, which specifically states that the reductions must be real, permanent, quantifiable, enforceable, and surplus. (*See* Regulations 2-4-201 and 2-2-211.) If the reductions do not satisfy all of these criteria, they do not quality as "Emission Reduction Credits" and are not eligible for banking. Nevertheless, in response to EPA's concerns, Air District staff are proposing a revision to

[11] EPA also identified the concerns discussed above in Section III.A.9., relating to the provisions for calculating baseline emissions for determining the amount of credit available for "fully offset" sources, in connection with the banking rules in Regulation 2, Rule 4. These provisions implicate Regulation 2-4 because they govern the amount of credit that can be banked for such sources. The proposed revisions discussed in Section III.A.9. above will address this concern with respect to the banking provisions in Regulation 2-4 as well as with respect to the NSR provisions in Regulation 2-2. In addition, the Proposed Amendments will also remove the related provision in Section 2-4-301.7 that referenced the procedure for granting credit for reductions in permit limits that have been fully offset. Since the Air District will be basing the amount of bankable credit on a source's *actual emissions* baseline in all cases (including for "fully offset" sources), the language in Section 2-4-301.7 basing the amount of credit on *permitted emissions* needs to be removed.

Section 2-4-301 to state explicitly that an applicant may bank emission reductions only if the APCO determines that they satisfy all of these "integrity" criteria.

Second, EPA is concerned that the banking provisions do not ensure that banked credits will reflect permanent emission reductions, because subsection 2-4-302.3 allows a Banking Certificate to include conditions that would provide an opportunity for the emissions to resume. Air District staff are proposing to address this concern by deleting subsection 302.3, which is redundant in any event. The requirement that reductions must be permanent will be enforceable through Section 2-2-605, which does not have any provision allowing the emissions involved to resume, as well as through the revised language in Section 2-4-301 discussed in the preceding paragraph.

B. Revisions to Address Issues Identified by Air District Staff Based on Recent Experience in Implementing the 2012 Amendments

As noted previously, the Air District's experiences in implementing the NSR program since the 2012 Amendments were adopted have highlighted a need for certain revisions and clarifications to make the program function better. These are outlined below.

1. Section 2-1-218 – Definition of "Regulated Air Pollutant"

Since adoption of the 2012 Amendments, Air District staff have realized that there is some potential for confusion regarding the addition of greenhouse gases as a pollutant that is regulated under the District's NSR program. Subjecting greenhouse gases to regulation raises concerns regarding two provisions in Regulation 2, Rule 1, that need to be addressed.

The first concern involves the exemption for agricultural sources in Section 2-1-113.1.2. This provision exempts qualifying agricultural sources from having to obtain an Air District permit, as long as their emissions are less than 50 tons per year of all regulated air pollutants except fugitive dust. Given the nature of GHGs, if this 50 tpy threshold applied to GHGs, it would eliminate the exemption for virtually all qualifying agricultural sources. This was never the intent behind the 2012 Amendments, but as written the Amendments can be interpreted to have this effect. To address this situation, the Proposed Amendments make clear that the exemption applies as long as a source's emissions are less than 50 tons per year of all regulated air pollutants except fugitive dust *and greenhouse gases*.

The second concern involves Section 2-1-413, which governs permits for sources that will be used at multiple locations throughout the Air District's jurisdiction. The provision allows applicants to obtain a single permit allowing use at any location within the District for qualifying sources, as long as the source does not emit more than 10 tpy of any regulated air pollutant. Again, given the nature of GHGs, applying this 10 tpy limit

to GHG emissions would exclude virtually all qualifying sources from being able to avail themselves of this provision. This was not the intent of the 2012 Amendments, and so the Proposed Amendments revise Section 2-1-413.1 to make clear that the 10 tpy limit applies only to regulated pollutants other than GHGs.

2. Section 2-1-413 – Time Limits On Operation of Sources Under Multiple-Location Permits

In the 2012 Amendments, the Air District addressed some confusion that had arisen regarding two different scenarios for permitting sources that are not permanently installed at a facility. The two scenarios involved are (i) portable equipment registered with the California Air Resources Board under that agency's Portable Equipment Registration Program (PERP); and (ii) equipment that is not eligible for CARB's PERP program, but is permitted by the Air District for use at multiple different locations around the Bay Area. The pre-2012 regulations blurred the different regulatory requirements for these scenarios somewhat. To address this situation, the 2012 Amendments adopted a more definite distinction between (i) PERP-registered equipment, which is subject to ARB's PERP requirements and is therefore exempt from having to get a permit from the Air District under Section 2-1-105; and (ii) non-PERP-registered equipment that is used at multiple locations, which is not eligible for the PERP exemption (because it is not PERP-registered), but which can get a special multi-location permit from the Air District under Section 2-1-413.

One element of the PERP program is that sources cannot be located at a facility for more than 12 months in order to be considered "portable" under the program's eligibility guidelines. Under the Air District's pre-2012 NSR regulations, this requirement also applied to District multi-location permits. When the District clarified the distinction between the two scenarios, however, the 12-month residency limit was not carried over into the multi-location permit provisions in Section 2-1-413. This lack of a time limit has led to some concerns about the potential for circumvention using this provision. That is, concerns have arisen that a facility could apply for a multi-location permit under Section 2-1-413 for a source that it does not ever intend to operate at multiple locations. In such a situation, the facility (or a contractor working on the facility's behalf) could use Section 2-1-413 to permit a source that it intends to operate exclusively at that facility. A source like this should obviously be included in the facility's permit, and not under a separate multi-location permit, but in this scenario the facility (or its contractor) would be able to obtain a separate permit instead of having it included in the facility's permit.

In order to avoid the potential for such an outcome, the Proposed Amendments apply a 12-month time limit that would preclude the use of 2-1-413 for any source that will reside at the same facility for more than 12 months. In the event that a source with a multi-

location permit were operated at a single facility for more than 12 months, it will lose its eligibility for the multi-source permit and will have to be permitted from scratch as a new source. This limitation will be added in a new subsection 2-1-413.7.

3. Sources Operated By Agents/Contractors On Behalf of Facility Owners

Confusion has arisen regarding situations where a third-party contractor may operate an emissions source at a facility on behalf of the owner/operator of the facility. For example, a facility may have a need to hire a contractor to bring in a piece of equipment for a period of time to perform some work in connection with the operation of a process unit at the facility. If the equipment will be used at the facility for more than 12 months, the Air District's intention is to treat that equipment as part of the facility, even if it is owned and operated at the facility by the independent third-party contractor. Such a situation falls under the existing definition of "facility" in Section 2-1-213 through the language in that definition stating that a facility includes all sources "under common ownership or control." If the facility owner hires the contractor to bring the equipment onsite to assist with the operation of the facility, then the equipment is under the ultimate control of the facility owner. This means (among other things) that any emissions from the equipment are subject to offsets to the extent required under Sections 2-2-302 and 2-2-303, if the facility is over the offsets applicability thresholds set forth in those regulations. In such a case, it will be the facility's ultimate responsibility to provide the offsets for the contractor's equipment, although the facility can negotiate with the contractor to have the contractor procure the offsets as part of the contract to provide the equipment.

The Proposed Amendments add language to Section 2-1-213 to clarify how the definition applies in this situation. They also include language to prevent circumvention of the 12-month time limit by using multiple, successive temporary sources to perform the same function at the refinery.

C. Revisions to Address the Supreme Court's *UARG v. EPA* Decision

As noted above, in 2014 the Supreme Court ruled in the *UARG v. EPA* case that facilities cannot become subject to the Clean Air Act's NSR and Title V requirements based on their greenhouse gas emissions alone. The Court reached this conclusion based on its interpretation of the terms "major emitting facility" in the Act's NSR provisions and "major source" in its Title V provisions. The Court found that the Act's conception of a "major" source does not encompass sources of GHG emissions, such that GHG emissions alone cannot make a facility "major". Only if a facility exceeds the "major" source thresholds for some other regulated pollutant besides GHGs will it become subject to NSR and Title V permitting.

This ruling impacts how EPA's federal NSR and Title V regulations are interpreted. In particular, it impacts EPA's definitions of the terms "regulated air pollutant" and "subject to regulation," which defined those terms to make GHGs a pollutant that could bring a facility within the NSR and Title V programs regardless of any other pollutants. The Supreme Court's ruling resulted in the portions of those definitions that regulated facilities based solely on their GHG emissions being vacated.

With respect to the Air District's NSR program in Regulation 2-2, the District does not need to make any major revisions because the NSR program addresses GHGs primarily by incorporating the federal definitions by reference. As a result, the Supreme Court's ruling rendering the relevant portions of those definitions ineffective did the same thing with respect to the Air District's program, leaving nothing in the District's regulatory language that need to be fixed. The one exception is in Section 2-2-214, the definition of Greenhouse Gases, which includes a provision addressing how GHGs are to be measured for purposes of determining whether GHGs alone can make a facility subject to NSR regulation. As the Supreme Court has now made clear that GHGs cannot in fact make a facility subject to regulation, this element of Section 2-2-214 is no longer necessary and should be removed.

With respect to the Title V program in Regulation 2, Rule 6, there are more regulatory provisions that need to be addressed. The Air District added a number of GHG-related provisions to its Title V program in the 2012 Amendments based on EPA's original interpretation that GHGs had to be included in that program. These revisions added greenhouse gases to the definition of "regulated air pollutants" subject to Title V permitting in Section 2-6-222, and they also made a number of other related revisions to implement this new requirement. In light of the Supreme Court's *UARG* decision, it is now clear that these revisions are in conflict with the Clean Air Act's Title V requirements.

As a result, the Proposed Amendments remove the 2012 revisions that added greenhouse gases to the Title V program. That is, the Proposed Amendments remove Section 2-6-222.6, the provision that added greenhouse gases to the definition of "regulated air pollutant," as well as all of the other revisions related to greenhouse gases,

so that the regulations will revert back to how they were before the 2012 revisions. These changes will make the Air District's Title V program consistent with how the Supreme Court has interpreted the Title V requirements in the *UARG* case.[12]

[12] Note that *UARG*, and the corresponding elements of the Proposed Amendments, only address the issue of whether a facility can become subject to Title V permitting requirements based on its greenhouse gases. As explained above, the Supreme Court held that a facility cannot become subject to Title V based on greenhouse gases alone, but instead must have emissions of some other regulated air pollutant above the Title V trigger levels in order to become subject to the Title V requirements. Once a facility becomes subject to Title V permitting because of some other regulated air pollutant, however, greenhouse-gas-related permit requirements are still included in the Title V permit. Title V permits must include all "applicable requirements," even where those applicable requirements address greenhouse gases. This principle of Title V permitting was not affected by the *UARG* decision.

IV. ADDITIONAL REVISIONS CONSIDERED DURING RULE DEVELOPMENT PROCESS

In addition to the revisions that will be made by the Proposed Amendments, which are largely technical and administrative in nature, Air District staff also initially developed two other more substantive changes to the NSR program at the public workshop stage. Staff included these proposed changes in the workshop drafts circulated for public review and comment in May of 2017, and discussed them with interested members of the public at three public workshops held in June of 2017. Air District staff are not proposing action on these two provisions at this time, for the following reasons.

A. Air District Pre-Approval for Petroleum Refinery Crude Slate Changes (Clean Air Plan Control Measure SS9)

The first significant substantive change that Staff workshopped was a provision that would require petroleum refineries to obtain approval from the Air District before making any significant changes in their crude slates. Staff developed this proposed change to implement Control Measure SS9 in the 2017 Clean Air Plan, *Spare the Air, Cool the Climate*.

As explained in detail in the May 2017 Workshop Report, Staff proposed this provision in order to help the District enforce its New Source Review permit requirements when refineries change their crude slates. If a refinery changes its operations in order to accommodate different crude slates in a way that will increase emissions, such a change is a "modification" that requires an NSR permit. But if the refinery goes ahead and makes such a modification without applying for or obtaining an NSR permit, the Air District may not ever know about the modification because the change may be subtle and not immediately obvious to District inspectors. The proposed regulatory revision would require refineries to apply for approval for any "significant crude slate change" as defined in the regulation – which would give the Air District information about the change and allow the District to determine whether the change involves a "modification" subject to NSR permitting requirements. Reviewing and approving such changes in advance would give the District an opportunity to ensure that refineries are complying with all applicable NSR requirements when they make significant changes in their crude slates.

After further analysis of the issues involved, and after considering the comments received through the public workshop process, Air District Staff have concluded that the most appropriate path forward at this point is to defer action on the proposed crude slate provision in order to collect and assess more data enabling a better method for implementing the proposal. There are a number of important issues that need to be

worked out, including issues such as how a "significant" crude slate change would be defined, the process and timing for obtaining District review and approval for such a change, and other important implementation issues.

In particular, deferring final action at this stage will allow staff and stakeholders to review and evaluate additional information about the refineries' crude slates and how crude slate changes may relate to air emissions. The Petroleum Refining Emissions Tracking Rule (Regulation 12, Rule 15) requires refineries to submit crude slate information to the District, but that requirement has only recently taken effect and the District has been receiving the information only for a short period of time. Taking the time for further evaluation will allow more data to be collected.

Moreover, initial indications from reviewing this crude slate data show that in some cases, the attributes of the crude slates that the refineries have processed historically are not "normally distributed," meaning that the observed data points are probably insufficient to get an accurate understanding of the normal variability of the data, which makes it very difficult to determine what is a significant change from typical operations. If the attributes of the crude that a refinery processes are highly variable from month to month, it can be difficult to determine how much of a change signals a "significant" change in crude slate. Additional analysis will help Air District staff and stakeholders better understand how to make such a determination. Furthermore, it appears that in some cases historical data about crude slate attributes may not be immediately available and may require additional development. Some information on crude constituents may be able to be re-created from surrogate sources, but doing so will introduce inaccuracies that make it difficult to determine what is normal variation and what is a significant change. Given these circumstances, it would be prudent to assess the available data about the refineries' crude slates more comprehensively, to collect additional data, and to investigate further how changes in crude slates relate to changes in air emissions.

For all of these reasons, Air District staff are not finalizing the proposed crude slate provisions at this time. Staff are moving forward with the technical and administrative revisions discussed above in Section III, which are ready to be finalized and which are under an EPA-imposed deadline for final action. These revisions need to be finalized and approved by EPA before March 1, 2018, or the Bay Area could face sanctions under the Clean Air Act. Staff will continue to work on developing the proposed crude slate provisions, and will develop a final proposal for consideration by the Board of Directors when all of the implementation details have been fully worked out.

In the meantime, Air District staff will continue to use existing enforcement tools to focus on refinery crude slate changes to help detect and prevent any non-compliance

with NSR requirements. Specifically, District staff will continue to review monthly crude slate reports providing information on the attributes of the crude that each refinery processes each month under Regulation 12-15-408. If District staff find significant changes in the crude attributes suggesting that the refinery has changed its crude slate in a significant way, and if there are indications that the refinery may have undertaken a modification in order to accommodate the change, District inspectors and engineering staff will conduct an investigation to determine whether any violations of any NSR permitting requirements have occurred. This enforcement approach will provide an effective interim measure to address the potential for NSR non-compliance while the District evaluates how best to implement the proposed crude slate provisions under Clean Air Plan Control Measure SS-9.

B. Expanded "Best Available Control Technology" Requirement for Greenhouse Gases (Clean Air Plan Control Measure SS17)

The second significant substantive change that was included in the workshop drafts circulated in May was a proposal to expand the scope of the "Best Available Control Technology" requirement for greenhouse gases in the Air District's New Source Review Program. Air District staff included a proposal to require NSR permit applicants to implement Best Available Control Technology (BACT) to reduce their greenhouse gas emissions for any new or modified source with an emissions increase of 25,000 tpy CO_2e or more. This would represent a substantial expansion in the scope of the requirement, which currently applies only for projects with increases of 75,000 tpy CO_2e or more, and only at "major" facilities (i.e., those with criteria pollutant emissions of over 100 tpy or 250 tpy, depending on the type of facility). Staff developed this proposed change to implement Control Measure SS17 in the 2017 Clean Air Plan.

After the public workshops, however, the California Legislature adopted AB 398, which added a new provision to the Health and Safety Code prohibiting the District from adopting any regulation to control CO_2 emissions from any sources subject to California's cap-and-trade regulations. The legislation amends Health & Safety Code section 38594 to state that "[a] district shall not adopt or implement an emission reduction rule for carbon dioxide from stationary sources that are also subject to [cap-and-trade]." This language effectively prohibits the District from moving forward and adopting the reduced BACT threshold for greenhouse gases that was proposed at the public workshop stage, since nearly all stationary sources with emissions over 25,000 tpy that could be subject to NSR permitting are subject to the cap-and-trade regulations, and because the bulk of their greenhouse gas emissions are CO_2. Air District staff have therefore removed the lowered greenhouse gas BACT threshold provision from the final version of the Proposed Amendments.

It is important to note, however, that the District's authority to maintain the existing 75,000 tpy threshold is not affected. Applying BACT at the 75,000 tpy threshold is required under the federal Clean Air Act as set forth in EPA's implementing regulations in 40 C.F.R. section 51.166. The provision in AB 398 stripping the District of its authority to implement CO_2 regulations specifically excludes regulations "required to comply with the federal Clean Air Act (42 U.S.C. Sec. 7401 et seq.) or regulations implementing that act." The current requirement to apply BACT for greenhouse gas emissions sources at the 75,000 tpy threshold will remain unaffected by the Proposed Amendments.

It is also important to note that AB 398's prohibition on regulating CO_2 emissions still leaves the Air District with regulatory authority over *non*-CO_2 greenhouse gas pollutants, such as methane and black carbon. These pollutants were not included as part of the proposal developed under Control Measure SS17, which covered only the six greenhouse gases that are currently regulated under the existing 75,000 tpy BACT requirement (of which CO_2 is the main constituent). But there is no reason why the Air District could not consider developing a BACT requirement – or some other type of regulatory approach – to address these other important contributors to climate change under Regulation 2. Air District staff will continue to evaluate whether any such alternative approaches may be appropriate for further development.

V. EMISSION REDUCTION AND COMPLIANCE COST IMPACTS

Because the Proposed Amendments are primarily technical and administrative in nature, they are not expected to have any significant direct impact on emissions in the Bay Area – although by allowing the Air District's permitting programs to function more effectively, they will be indirectly helping to achieve all of the important air quality benefits associated with those programs. By the same token, the Proposed Amendments are not expected to result in any significant compliance costs for regulated entities.

A few of the Proposed Amendments will result in minor expansion of the scope of the NSR program at the margins, but the changes will be minimal and will not make any substantial changes to how the program functions currently. For example:

- The revision to Section 2-2-224.1 to make the PSD provisions of Regulation 2-2 applicable to major sources of *non-attainment* pollutants as well as major sources of attainment pollutants (discussed above in Section III.A.3.) could slightly expand the universe of facilities subject to these requirements. This could occur if there are facilities that are currently below the "major" source threshold for all attainment pollutants, but are above the threshold for a non-attainment pollutant. If such a facility implements a project with a significant net increase in attainment pollutants, it would be required to implement the various PSD requirements for those attainment pollutants with significant net increases.
- The revision to Section 2-2-611 requiring a few additional categories of facilities to include their fugitive emissions when determining if they exceed the "major" source thresholds (discussed above in Section III.A.5.) could make more facilities "major" facilities. This could occur if there are facilities in those categories that are currently below the "major" facility threshold, but are close enough to it that their fugitive emissions will push them over the threshold.
- The revision to Section 2-2-605 to remove the provision allowing "fully offset" sources to use their permitted emissions as the baseline for calculating bankable emission reduction credits when such sources are shut down, which will require them to use their actual emissions as the baseline instead (discussed above in Section III.A.9.), could reduce the total amount of emission reduction credits available regionwide to offset future NSR emissions increases. This could result in the stock of banked credits declining more quickly, which could cause a marginal increase in the cost of credits and could lead to the emissions bank being exhausted at an earlier date.
- The revision to Section 2-2-401.4 that would use the approach suggested by the Federal Land Managers' working group to determine whether a PSD Project applicant is required to evaluate air-quality-related impacts in Class I Areas

(discussed above in Section III.A.6.) could potentially expand the universe of project applicants that must conduct these analyses. This could occur if any "major" facilities propose projects with emissions increases exceeding 1,000 tons per year located more than 100 km from a Class I Area. If a facility proposes such a project, the facility may be required to conduct an evaluation of potential impacts in the Class I Area, even though the facility is beyond the 100 km limit under the current rule.

These changes constitute an incremental expansion of the scope of the Air District's NSR program at the margins, and they could therefore potentially require a facility to implement some additional requirement to limit emissions in a way that would not be required absent the Proposed Amendments. The potential for such a situation to arise in practice would depend on whether there are any facilities in the Bay Area in any category described above that could be affected by these changes, and whether (and to what extent) such facilities may decide to pursue projects involving the installation of new sources, or the modification of existing sources, that would implicate any of the changes. Moreover, to the extent that there are any such facilities with new or modified sources that may be affected, the extent of any substantive changes in what those facilities will be required to do will most likely be limited. For all of these reasons, the potential for any changes in how facilities will actually implement their operations under the Proposed Amendments is expected to be minor.[13]

Beyond these provisions making minor changes to the scope of the Air District's NSR program, the remainder of the Proposed Amendments do not affect the program's substantive requirements in any way. Many of the requirements apply only to the procedures for how the permitting programs will be administered, such as the requirement for EPA to approve the use of alternative computer models (discussed above in Section III.A.4.), the time limits on applicants' requests for offset refunds (discussed above in Section III.A.7.), and the procedures under which the Air District will make its offsets "equivalence demonstration" (discussed above in Section III.A.8.). Others involve only revisions to the specific terminology used in the regulations without any substantive changes, such as the language changes in the agricultural source provisions (discussed above in Section III.A.1.) and the terms from EPA's regulations incorporated by reference into Section 2-1-234.2 (discussed above in Section III.A.2.). And some, such as the revisions to the emissions banking regulations (discussed above in Section III.A.10.), simply make explicit what is already implied in the current provisions, again with no

[13] Furthermore, EPA will require such changes whether the Air District makes them or not. That is, if the Air District does not make these changes, EPA is authorized to step in and impose NSR regulations federally, which will subject permit applicants to all of these requirements anyway. As such, in many ways it is not the Proposed Amendments that are making these regulatory changes, but EPA's federal requirements under the Clean Air Act that require permit applicants to do all these things.

substantive changes. These changes will not require permitted facilities to do anything differently than under the current regulatory system, and so they will not affect emissions or create any additional compliance costs. They will simply make the revisions necessary to allow EPA to fully approve the District's regulatory programs and to achieve the other related goals of the Proposed Amendments.

Given the narrow scope of the Proposed Amendments and the fact that they are limited to minor technical and administrative changes in the regulations, the Proposed Amendments are not expected to result in any significant direct emission reductions, and are similarly not expected to result in any significant compliance costs. Environmental impacts and cost concerns are also addressed further in the CEQA Initial Study and in the socioeconomic analysis for the Proposed Amendments, which are being published in conjunction with this Staff Report.

VI. REGULATORY ANALYSIS REQUIREMENTS

When the Air District adopts or amends its regulations, it is subject to certain statutory requirements to assess potential environmental, regulatory, socioeconomic and other impacts. Air District staff have evaluated all of these potential impacts in order to ensure that all applicable statutory requirements have been fulfilled. This section summarizes those requirements and how they have been satisfied for the Proposed Amendments.

A. California Health & Safety Code Requirements

Before adopting or amending any regulations, the Board of Directors must make certain findings required by **Health & Safety Code Section 40727**. These include findings of necessity, authority, clarity, consistency, non-duplication, and reference. Air District Staff have conducted an analysis of the Proposed Amendments and have concluded that there is substantial evidence on which the Board of Directors can make these required findings. The basis for this conclusion is as follows.

- **Necessity:** This finding requires a demonstration that a need exists for the proposed amendments, as demonstrated by the record. As discussed above in Section III, the Proposed Amendments are necessary to address recent developments affecting the Air District's NSR and Title V permit programs. Specifically, the Proposed Amendments are necessary for three reasons. First, the Proposed Amendments are necessary to address the deficiencies identified by EPA in its "limited disapproval" of the District's NSR regulations. Making these changes is necessary so that EPA can fully approve the Air District's NSR program under the Clean Air Act (and so that the Bay Area can avoid sanctions for failure to have an EPA-approved program). Second, the Proposed Amendments are necessary to refine the Air District's NSR program to ensure that it functions as efficiently and effectively as possible. Third, the Proposed Amendments are necessary to align the Air District's regulations with recent legal developments affecting the NSR and Title V provisions of the Clean Air Act.
- **Authority:** This finding requires identification of the state or federal law that permits or requires the Air District to adopt the Proposed Amendments. The federal law that requires the Air District to adopt NSR permitting regulations is Part C and Part D of Title I of the Clean Air Act. The federal law that requires the Air District to adopt Title V permitting regulations is Title V of the Clean Air Act. The California law that requires the Air District to adopt permitting requirements to provide for attainment of ambient air quality standards is Division 26, Part 3, Chapter 10 of the California Health & Safety Code (commending with Section 40910). Additional California law authorizing the Air District to adopt NSR and Title V permitting

regulations is contained in Sections 40001 and 40702 of the California Health & Safety Code, which are general provisions authorizing California air districts to adopt and implement appropriate regulations as necessary to achieve and maintain air quality standards and to execute the powers and duties granted to and imposed on them.

- **Clarity:** This finding requires that the Proposed Amendments are written so that Regulation 2's meaning can be easily understood by persons affected by it. As explained in this Staff Report, Air District Staff have conducted a thorough review of the regulatory language contained in the Proposed Amendments to ensure that it presents the requirements of the NSR and Title V permitting programs in the clearest possible manner. District Staff have also conducted a public outreach process and engaged with members of the public who will be affected by the regulations to solicit their input on how the regulations should be written and presented. The final version of the Proposed Amendments reflects this public input.
- **Consistency:** This finding requires that the Proposed Amendments must be in harmony with, and not in conflict with or contradictory to, existing statutes, regulations, and decisional law. As explained in this Staff Report, Air District Staff have reviewed all relevant provisions of state and federal law, and court decisions to the extent applicable, to ensure that the Proposed Amendments are consistent with them. Indeed, one of the primary reasons for adopting the Proposed Amendments is to make sure that the Air District's programs are in fact consistent with applicable legal requirements. For example, the Proposed Amendments will (among other things) ensure that the Air District's NSR program addresses all areas identified by EPA where the current regulations are not fully consistent with federal Clean Air Act requirements, and will also ensure that the District's regulations are consistent with recent legal developments such as the Supreme Court's decision in the *UARG v. EPA* case.
- **Non-Duplication:** This finding requires that the Proposed Amendments must not impose the same requirements as an existing state or federal regulation, unless doing so is necessary and proper to execute powers and duties granted to or imposed upon the Air District. To the extent that the Air District's NSR and Title V programs require stationary sources to obtain pre-construction and operating permits in the same manner as EPA's federal programs, the District's permitting programs are necessary and proper to execute the District's power and duty to implement these requirements in the Bay Area. As discussed above in Section II.A. on the legal framework for NSR and Title V permitting, although Federal law creates these programs and sets forth the minimum requirements for how they are implemented (with additional requirements imposed by State law), the programs

are intended to be implemented primarily by local agencies through their own regulations. The Proposed Amendments will allow the Air District's permitting programs to do so effectively and in accordance with law.

- **Reference:** This finding requires identification of and reference to the provisions of law that will be implemented by the Proposed Amendments. These provisions are those identified and referred to in connection with the "authority" finding above.

Based on the foregoing, there is ample evidence on which the Board of Directors can make the findings required by Health & Safety Code Section 40727.

In complying with these requirements of Health & Safety Code Section 40727, the Air District is required under **Health & Safety Code Section 40727.2** to prepare an analysis identifying all existing federal air pollution control requirements and Air District rules and regulations that apply to the types of sources and equipment that are subject to the Proposed Amendments. As the NSR and Title V permitting programs apply to essentially all sources of air pollution in the Bay Area, the universe of existing federal and District pollution control requirements and rules and regulations that apply to the facilities that may be affected by the Proposed Amendments includes all federal requirements for stationary sources and all Air District requirements. These requirements are numerous, and they are listed in Title 40 of the Code of Federal Regulations, Chapter 1, Subchapter C (Air Programs); and in Air District Regulations 1 through 12.

In addition, under **Health & Safety Code Section 40728.5**, before adopting or amending any regulations that will significantly affect air quality or emissions limitations, the Air District must assess any potential socioeconomic impacts from the adoption or amendment, to the extent that data are available. Section 40728.5 defines socioeconomic impacts to include the following elements:

- Businesses Affected: NSR and Title V permitting address a wide variety of stationary sources in the Bay Area. The Air District currently has approximately 8,000 permitted facilities, and the Proposed Amendments could potentially affect any or all of them. Most aspects of the NSR and Title V permitting programs will not be affected by the Proposed Amendments, of course, and so many of these facilities will not see any change in the specific provisions that apply to them. Moreover, most of the substantive requirements of these permitting programs apply only to new and modified sources, and so how any particular business may be affected will depend upon that business's plans for adding new sources or modifying its existing sources in the future. As such, it not possible to determine specifically how the Proposed Amendments will affect any particular operation or any particular type of business or segment of industry. There is no data or other information available on which one could make such a determination at that level

of specificity. As a general matter, however, for any business or industry segments that may be affected, the effects are not expected to be significant.

- Impact on Employment and the Economy: For the same reasons that it is not possible to state with specificity exactly what businesses will be affected by the Proposed Amendments or exactly how any particular business or industry segment will be affected, it is not possible to quantify the extent of any potential impacts on employment and the economy. To the extent that there are any such impacts, however, they are not likely to be extensive. As outlined in Section V. above, the Proposed Amendments are not expected to impose significant additional compliance costs, and they are not expected to require affected facilities to have to hire any additional staff or to impose substantial costs that will have any adverse impact on the region's economy.
- Range of Probable Costs of Regulation: It is similarly not possible to quantify with any specificity the range of probable costs associated with the Proposed Amendments, if any. Any additional regulatory costs are expected to be minimal, and are not expected to impose any significant cost burdens on regulated entities. Beyond this general level of cost impact projection, is not possible to estimate exactly where within the range of zero to less-than-significant the costs may fall.
- Availability of Cost-Effective Alternatives: There are no alternatives that will satisfy the goals and objectives of the Proposed Amendments with less cost. The bulk of the revisions being made by the Proposed Amendments are legally required in order for EPA to be able to fully approve the Air District's permitting programs, and the District has no viable alternative but to make them. Furthermore, the Proposed Amendments are not expected to impose any significant compliance costs as explained in Section V. As such, even if there were available alternatives, they would not involve any significant reduction in compliance costs.
- Emission Reductions: As discussed in Section V., it is not possible to specify with any certainty the extent of any emission reductions that will be gained specifically because the Proposed Amendments. The Proposed Amendments present technical and administrative revisions to the current rules, and these revisions will not substantially change the scope or substantive requirements of the Air District's permitting programs. As such, the Proposed Amendments are not expected to directly create any significant emission reductions. They are intended to address the regulatory mechanisms through which the programs are implemented, which is an important consideration from the perspective of administering the programs effectively, but they will not have any significant direct effect on the amount of air emissions from regulated facilities in the Bay Area.

- Necessity: As noted above in connection with Section 40727, the Proposed Amendments are necessary to implement changes to the current rules required by EPA for full approval of the NSR program under the federal Clean Air Act, to address certain issues identified by Air District staff to ensure that the permit regulations function as effectively as possible, and to align the regulations with recent legal developments. These reasons why the Proposed Amendments are necessary are discussed in detail in Section III.

Section 40728.5 requires the Board of Directors to consider the socioeconomic impact of the Proposed Amendments, and to make a good faith effort to minimize any adverse socioeconomic impacts associated with them. In light of the discussion above, District Staff have concluded that the Proposed Amendments will not have any significant adverse socioeconomic impacts. This conclusion is also based (in part) on the socioeconomic impact analysis prepared by Applied Development Economics, which is incorporated herein. Staff submit that adoption of the Proposed Amendments constitutes the most effective way to further the Air District's goals of implementing the state and federal NSR and Title V permitting requirements with the minimum amount of socioeconomic impact possible.

B. California Environmental Quality Act Requirements

The Proposed Amendments have been prepared to ensure that the Air District can effectively implement two important Clean Air Act permitting programs, which will help ensure that District regulations are complied with, that air pollution is reduced, and that the region's clean air goals are achieved. As such, the Proposed Amendments will help support positive environmental benefits. The Air District is still required to evaluate the potential for the Proposed Amendments to have ancillary negative environmental impacts, however, notwithstanding these positive air quality benefits. This requirement is imposed by the California Environmental Quality Act ("CEQA"), Pub. Res. Code § 21800 *et seq.*, as well as the CEQA Guidelines that have been adopted to help implement the statutory provisions of CEQA.

To address these requirements under CEQA, the Air District contracted with Environmental Audit, Inc., an environmental consultant, to prepare a CEQA Initial Study to evaluate the potential for significant adverse environmental impacts as a result of the Proposed Amendments. This Initial Study is being published in conjunction with this Staff Report and the Proposed Amendments. The Initial Study found that there is no substantial evidence suggesting that the Proposed Amendments will have any significant adverse environmental impacts. Accordingly, District staff have prepared a proposed Negative Declaration under CEQA for consideration by the Board of Directors.

Air District staff will present the proposed Negative Declaration for consideration by the Board of Directors, along with the Initial Study, all of the supporting information in the record, and any comments from interested members of the public. After considering all of this information, if the Board determines in its own independent judgment there is no substantial evidence that the project will have a significant effect on the environment, it may adopt the Negative Declaration to support its approval of the Proposed Amendments. Interested members of the public are encouraged to review and comment on the Initial Study and proposed Negative Declaration, and to provide any comments to Air District staff and to the Board of Directors.

C. BAAQMD Cost Recovery Policy

The Air District is also required under the Cost Recovery Policy adopted by the Board of Directors on March 7, 2012, to ensure that any new regulatory amendments recover their costs through fees. District staff considered the potential cost impacts to the Air District as a result of the Proposed Amendments and found them to be minimal. The Proposed Amendments will make only minor revisions to the way District staff implement the NSR and Title V permitting programs, and they are not expected to generate any substantial additional work for District permitting or other staff, above what staff are already required to do under the existing programs. There is no need for any new or revised regulatory fees associated with the Proposed Amendments.

VII. PUBLIC ENGAGEMENT AND PUBLIC COMMENTS

The Proposed Amendments are the product of a year's work by Air District Staff with input from a large number of interested stakeholders, including EPA Region IX and ARB staff, representatives from the regulated community and industry groups, representatives from environmental and advocacy organizations, and interested members of the public. Engagement and participation by these stakeholders has resulted in significant improvements to the Proposed Amendments as they have evolved during this process.

Air District Staff began this process in 2016 after EPA published its limited approval and limited disapproval of the Air District's NSR permit program. As explained in Section II.D., EPA approved the program generally, but identified a number of areas where the Air District needs to make certain revisions to be fully consistent with the federal Clean Air Act. Air District staff prepared draft revisions to address these identified deficiencies, and then met with EPA Region IX staff to ensure that they satisfied EPA's concerns. Air District staff also conferred with Air Resources Board staff as part of this process to ensure that the draft revisions satisfied California statutory requirements as well.

When the draft revisions were complete, Air District staff circulated them for public review and comment. Staff published the drafts on May 11, 2017, accompanied by a 45-page Workshop Report that provided a detailed summary and an explanation of the reasons for the proposed revisions and what they would accomplish. Air District staff published the Workshop Report and draft regulatory amendments on the District's website, and also sent notification by US mail and by email to all contacts on the District's lists of potentially interested parties.

Air District staff then held a series of public workshops in June of 2017 to engage with interested members of the public. The public workshops included a presentation by Air District staff explaining the reasons why the District was proposing the regulatory revisions; what the revisions would involve; and what the revisions would mean for affected facilities, for air quality in the Bay Area, and for the public at large. The staff presentation was then followed by an open question-and-answer and discussion forum, which allowed staff to engage in a discussion with the attendees to provide additional information and get public input and feedback. The dates and locations of the public workshops are summarized below:

Rule Development Public Workshops

Date:	Location:
June 12, 2017	Air District Headquarters 375 Beale Street San Francisco, CA
June 12, 2017	City of Martinez City Council Chambers 525 Henrietta Street Martinez, CA
June 13, 2017	City of Fremont Family Resource Center Millennial Room – Suite A120 39155 Liberty Street Fremont, CA

Each of the public workshops was also webcast to allow interested members of the public to attend remotely. In addition, Staff also made an archived webcast available on the Air District's website for later viewing by any interested members of the public who were not able to attend at the time of the live presentation. Over 50 people attended the workshops in person, with over 20 more participating in the webcasts.

Air District staff also solicited written comments on the drafts published at the workshop stage. Staff scheduled the close of the comment period to be two weeks after the public workshops to allow interested members of the public to be able to attend the workshops and engage in an initial discussion of the draft revisions, and then still have time to go back and finalize their input in the form of written comments. District Staff also made themselves available throughout the process by phone and in person to answer questions, explain issues, and receive input from members of the public. District staff have had a large number of communications – by telephone, by email and in person – with interested members of the public during this process.

Air District staff received important public feedback from this workshop process, and staff wish to thank all who took the time to provide input. Staff have prepared written responses to the comments received, which are provided in Appendix B to this Staff Report. Based on the comments, District staff have made further revisions to the initial drafts, which are reflected in the final version of the Proposed Amendments that staff are proposing for adoption by the Board of Directors.

Based on this public process, Air District staff initially published a final version of the Proposed Amendments on August 25, 2017, which staff noticed for a public hearing before the Air District's Board of Directors on October 18, 2017. After that initial publication, however, two further developments gave rise to a need to make further revisions to the Proposed Amendments.

First, Air District staff completed a series of discussions with EPA Region IX staff regarding their approach to for calculating the amount of offset required when a major source is modified, which is different from how the Air District calculates offsets as described in Section III.A.8. above. After further discussion with EPA Region IX staff, Air District staff have realized that the Air District can address this difference through the "offsets equivalence demonstration" procedure outlined in Section III.A.8. Air District staff have therefore made additional revisions to the drafts published on August 25, 2017, for this purpose.

Second, EPA published its proposed conditional approval of the 2012 revisions to the emissions banking provisions in Regulation 2-4 on September 14, 2017.[14] EPA identified certain additional deficiencies in Regulation 2-4 that were not addressed in the drafts of the Proposed Amendments published on August 25, 2017. Air District staff have addressed these deficiencies in the drafts being published today, as discussed in Section III.A.10. Adopting these banking revisions will allow EPA's proposed conditional approval to be converted to a full (unconditional) approval.

The Proposed Amendments reflect both of these further revisions to the versions that were published on August 25, 2017. Air District staff are re-publishing the Proposed Amendments with these revisions, and will propose that the District's Board of Directors consider them for adoption at the public meeting scheduled for December 6th, 2017. These further revisions are discussed in detail in Sections III.A.8. and III.A.10. of this Staff Report. Air District staff have also updated the CEQA Initial Study and Proposed Negative Declaration and the socioeconomic impact analysis for the Proposed Amendments to reflect these further revisions (although the conclusions reached in those documents have not changed as these further revisions are relatively minor). Air District staff are also re-noticing the Proposed Amendments in conformance with all applicable noticing requirements to ensure that all interested members of the public have full notice of all aspects of the Proposed Amendments, including these two additional revisions that staff have made since August 25, 2017.

Interested members of the public are encouraged to submit comments on the Proposed Amendments. Written comments should be addressed to Greg Stone, Bay Area Air Quality Management District, 375 Beale Street, Suite 600, San Francisco, CA 94105. Written comments also can be sent by e-mail to gstone@baaqmd.gov. **Written comments on the proposed amendments will be received during the period from Friday, October 13th, 2017, until 5:00 p.m. on Monday, November 13th, 2017.**

[14] *See supra*, fn. 4.

Interested members of the public can also submit comments at the public hearing scheduled for December 6th, 2017. **Note that the Air District will consider all comments received on the earlier version of the Proposed Amendments published in August, 2017, in addition to comments on the current version. Members of the public do not need to re-submit any comments that they submitted on the earlier version.**

VIII. CONCLUSION AND STAFF RECOMMENDATION

For the reasons discussed in the foregoing Staff Report, Air District Staff recommend that the Board of Directors adopt the Proposed Amendments. The Proposed Amendments have met all applicable legal requirements for adopting amendments to District regulations, including both substantive and procedural requirements. The Proposed Amendments have also been developed in coordination with interested stakeholders and have incorporated helpful comments received from members of the public. The Proposed Amendments will strengthen the Air District's NSR and Title V permitting programs and ensure that they can be implemented consistently and efficiently. The Proposed Amendments will also allow EPA to fully approve the Air District's programs under the Clean Air Act.

Air District Staff respectfully submit that the Board of Directors should exercise the legal authority granted to it by legislature of the State of California under the Health and Safety Code and the adopt the Proposed Amendments as the policy and regulations of the Bay Area Air Quality Management District. To do so, Staff recommend that the Board of Directors approve the following two actions:

- Adoption and Approval of a "Negative Declaration" under the California Environmental Quality Act finding and declaring that, in the independent judgment and analysis of the Board, and based on the entire record including the CEQA Initial Study prepared for the Proposed Amendments and any and all public comments received, there is no substantial evidence that the Proposed Amendments will have a significant adverse effect on the environment.
- Adoption of the Proposed Amendments, as set forth in Appendix A hereto.

Response to Public Comments on Proposed Technical and Administrative Amendments to New Source Review and Title V Permitting Regulations

Air District staff published drafts of the proposed amendments to Regulation 2, Rules 1, 2, 4 and 6, and invited interested members of the public to comment on them. This document summarizes the comments received and the responses of Air District staff.

Air District staff initially published drafts of the proposed amendments on August 24, 2017, and requested comments by September 25, 2015. Staff subsequently made certain revisions to the proposed amendments and re-published them to provide a further opportunity to comment on the additional changes. Staff provided a further comment period on the revised proposal through November 13, 2017. The Air District considered all comments received throughout this time period from August 24, 2017, through November 13, 2017.

Comments were received from 350 Bay Area (both in a comment letter submitted on the proposed amendments and in a similar letter to the Air District's Board of Directors on behalf of 350 Bay Area and other organizations); the Western States Petroleum Association (WSPA); the California Department of Transportation (CALTRANS); the California Air Resources Board (ARB); West Marin Standing Together (which supported the comments from 350 Bay Area); and Charles Davidson.

Summaries of the comments received, and Air District staff's responses, are provided below. (All of the comments are available in full on the Air District's website at www.baaqmd.gov/permits/permit-fee-rule.) The discussion first addresses comments on provisions included in the proposed amendments. The discussion then addresses comments that do not address anything in the proposed amendments, but are relevant to other related issues including certain provisions that Air District staff considered at the public workshop stage but are not proposing for final action at this time. Staff are continuing to work on those issues, and providing responses here will help further the ongoing discussion with interested members of the public in developing final proposals for consideration by the Board of Directors.

I. Comments on the Proposed Amendments

The Air District received the following comments on provisions included in the proposed amendments.

A. Comments on the Offsets Equivalence Demonstration

WPSA commented on the equivalence demonstration that the Air District undertakes each year to show that it is getting at least as many offsets under its NSR program as a whole as EPA would require under EPA's federal regulations. The Air District is required

to undertake this demonstration in order for EPA to be able to approve the District's offsets requirements, which take a slightly different approach in certain areas than EPA's federal requirements do. The Air District needs to make this demonstration to ensure that its approach is no less stringent than what EPA requires under the Clean Air Act. If for some reason the District is ever unable to demonstrate that its approach is at least as stringent, then major facilities will be required to follow EPA's federal approach for providing offsets when they undertake major modifications.

WSPA commented that if the Air District is ever unable to make the demonstration, then the District should bear the consequences of that failure and not regulated facilities. WSPA commented that the Air District should be obligated to come up with additional offsets to comply with EPA's requirements, instead of having the facilities seeking permits provide the additional offsets. WSPA also commented that the Air District should not go back and reopen previously issued permits to require sources that have already been permitted and built to provide additional offsets.

Air District staff responded to similar comments from WSPA during the workshop process and incorporate those responses here. As staff explained, in the unlikely event that the Air District cannot show that the District's offsets requirements are at least as stringent as EPA's, that would simply be an indication that, for a period of time, the Air District's offsets program has not been obtaining as many offsets as what EPA's federal regulations require. If and when that scenario ever came to pass, it would be entirely appropriate to require the facilities seeking permits for additional air pollution to provide the additional offsets for that pollution according to what EPA requires, instead of requiring the District to make up the difference. Regarding reopening previously issued permits, as staff explained during the workshop process, existing permits will not be affected in the event that the Air District cannot make the equivalency demonstration. EPA's federal requirements will apply only for *subsequent* major sources and major modifications. That is, only applicants seeking NSR permits for future projects would be required to provide any additional offsets in accordance with EPA's federal requirements. Previously issued permits will not be reopened.

B. Comments on Emissions Estimates Used in Calculating Emission Reduction Credits

WSPA raised a concern it raised earlier during the workshop process, that if the Air District uses inflated emissions estimates for some purposes, such as assessing permit fees, then the District should use the same inflated estimates for purposes of calculating the amount of emission reduction credits generated when a source is shut down. The Air District responded previously that the New Source Review program does not use inflated emissions estimates: all NSR analyses and determinations must be based on the best available information as to what a source's emissions actually are. WSPA stated that this response did not address its concerns. It suggested that the District incorporate specific language specifying that calculations of emission reduction credits under Regulation 2-2

should be based on the same data that the Air District has used for assessing fees and for emissions inventories submitted under Regulation 12-15.

Air District staff disagree that it would be appropriate to require emissions estimates from any specific context to be used for NSR permitting purposes. If that were the case, it could potentially perpetuate faulty emissions estimates by requiring them to be used in the NSR context even if it has become clear that they are not longer valid. The better approach is to require emissions estimates to be based on the best information available, as is the case under the current rule. If the most recent estimates used in permit fee calculations or Regulation 12-15 reporting incorporate the best, most up-to-date data, then it will be appropriate to use those estimates. If better estimates have come to light based on more recent information, then it would be more appropriate to use that more recent information, instead of relying on outdated, incorrect estimates.

WSPA also stated that Air District staff "have increased estimates of fugitive emissions dramatically" with respect to petroleum refineries in the Bay Area. This comment seems misplaced. Air District staff have not estimated fugitive emissions from individual facilities or facility categories in connection with the proposed technical and administrative amendments to Regulation 2.

C. Comments on Regulatory Definitions

WSPA commented that the District should ensure that all definitions of terms in Rules 12-15, 12-16, 13-1, 2-1, and 2-2 are consistent with each other. It stated that if a definition is modified, the District should explain why the modification is necessary and why it does not apply in other refinery-related rules.

Air District staff agree in general that definitions should be consistent across different regulations to the extent possible, as staff explained in response to a similar comment by WSPA during the workshop process – although in some cases there will be sound reasons why differing definitions may be necessary. For example, where a similar term needs to function differently in the context of one regulation compared to how it functions in the context of another regulation, it may need to be defined differently in the two regulations. Air District staff have sought to maintain consistency across all District regulations as much as possible, however. All of the proposed revisions to definitions in Regulation 2 are explained in further detail in the Staff Report for the Proposed Amendments.

D. Identification of a Typographical Error in Section 2-2-229

ARB pointed out that in Section 2-2-229, the word "been" was inadvertently omitted in the phrase "… offsets have previously provided …." Staff have revised the language to correct this error. The provision now reads "… offsets have previously <u>been</u> provided …."

E. Comments on the CEQA Analysis

CALTRANS submitted comments suggesting that the Air District revise some of the language in the environmental and regulatory setting discussions in the Initial Study prepared for the proposed amendments under the California Environmental Quality Act (CEQA). With respect to the air quality analysis, the CALTRANS pointed out (i) that California has established ambient air quality standards for hydrogen sulfide and vinyl chloride, and so those pollutants should be added to the list of such pollutants in Table 3-1; (ii) that the pollutant referred to as "visibility reducing particles" was incorrectly referenced as just "visibility"; (iii) that the air quality discussion addresses only the primary National Ambient Air Quality Standards (NAAQS), and does not mention the secondary NAAQS; and (iv) that the primary NAAQS for PM_{10} was incorrectly stated in Table 3-1. With respect to the noise analysis, the commenter pointed out that traffic noise includes noise from a wide variety of different vehicle types. Air District staff agree that the Initial Study could be improved by correcting and/or clarifying the discussion with respect to these points. Air District staff addressed all of these points in the revised Initial Study published on October 12, 2017.

WSPA commented that the Air District is improperly "piecemealing" the proposed amendments under CEQA by not including them as part of a larger "strategy" to regulate emissions from Bay Area refineries. But independent rule development projects do not implicate CEQA "piecemealing" concerns where they serve different purposes and can be implemented independently of each other. That is the case here. The purpose of the proposed amendments is to make technical and administrative revisions to the Air District's permitting programs so that they can be fully approved by EPA, so that they will function efficiently, and so that they will conform to recent Supreme Court jurisprudence. That purpose is completely different from, and independent of, the purposes underlying any other Air District regulatory initiatives. And the proposed amendments to Regulation 2 can be and will be implemented completely independently of any other regulatory initiatives. As such, CEQA does not require the proposed amendments to be evaluated as part of the same common project as any other initiatives.

WSPA also stated that the Air District's analysis must be based on "creditable substantive evidence." The Initial Study is based on such evidence, and WSPA has not identified any area in which it contends that the Initial Study is lacking.

Finally, WSPA also stated that the Air District must consider a reasonable range of alternatives. CEQA requires lead agencies to consider alternatives to a proposed project that will avoid or substantially lessen any significant environmental impacts. Here, the proposed amendments will not have any significant environmental impacts, so by definition there cannot be any alternatives to consider that would avoid or substantially lessen any such impacts.

II. Comments on Other Issues Not Included In The Proposed Amendments

The Air District also received a number of comments on things that are *not* included as part of the proposed amendments. These comments are not related to the technical and administrative amendments Air District staff are proposing for Regulation 2, and so they have no direct bearing on what the Board of Directors will be considering at the December 6th hearing. Air District staff are nonetheless providing responses to these comments, as they address important issues that staff have considered during the rule development process and will be continuing to engage in in the coming months. Air District staff look forward to continued discussions with the commenters on these issues.

A. Comments on Requiring "Best Available Control Technology" for New and Modified Sources of CO_2 Emissions Subject to Cap-and-Trade Regulations

The first area of comments concerned a proposal that Air District staff developed for the public workshops under which the District would lower the threshold at which new and modified sources would be required to use "Best Available Control Technology" (BACT) to control their greenhouse gas emissions. The current threshold is 75,000 tpy CO_2e, and staff proposed to reduce it to 25,000 tpy CO_2e. After the public workshops, however, the Legislature enacted legislation referred to as AB 398 that preempts the District's authority to impose emission reduction rules for CO_2 emissions sources subject to the state's "Cap and Trade" program. Since virtually all of the greenhouse gas emissions that would be subject to this requirement are CO_2 emissions, and since virtually all of the sources that would be subject to it are subject to Cap and Trade, the Air District is now legally prohibited from adopting such a regulation – at least in the form that District staff developed it for the June public workshops. Air District staff are therefore not proposing final action on the revised BACT threshold at this time, although staff will continue to evaluate the potential to address greenhouse gas emissions through the District's permitting regulations without violating AB 398.

350 Bay Area and related commenters stated that the Air District should still go forward with the proposal – and in fact should implement even more stringent New Source Review requirements – notwithstanding AB 398. These commenters contended that AB 398 does not prohibit the Air District from requiring BACT from *new and modified* CO_2 emissions sources subject to Cap and Trade, which is what the New Source Review program applies to, because (according to the commenters) the legislation only prohibits Air District regulation of *existing* sources. The commenters' theory is that AB 398 prohibits only "emission reduction rules," and that regulations aimed at new and modified sources do not "reduce" emissions, they simply limit the increases in emissions that would otherwise occur from the new or modified sources. The commenters therefore contend that the reference to "emission reduction rules" in AB 398 demonstrates that the legislature intended the preemption to apply only to regulation of existing sources, not new or modified sources.

Air District staff have serious concerns regarding the legal viability of this theory, and staff do not (at least at this point) believe that the courts would agree with it. Regulations addressing emissions from new and modified sources can be thought of as simply limiting the amount of new emissions that would otherwise occur, but they can equally well be thought of as *reductions* in what the new or modified source would otherwise emit without using the BACT control technology. And this is in fact how BACT requirements have historically been referred to in the New Source Review program. For example, the Clean Air Act defines BACT as "the maximum degree of *reduction* of each pollutant subject to regulation…." (CAA § 169(3), 42 U.S.C. § 7479(3) (emphasis added).) Even the commenters themselves use this terminology in their comment letter, stating that a very stringent BACT requirement "would be able to achieve potential *reductions*" in greenhouse gas emissions. (305 Bay Area Comment Letter, p. 9, § IV.B.2. (emphasis added).) Given this history in the NSR program, Air District staff disagree that there is a colorable argument that the legislature intended to exclude BACT from the scope of "emission reduction rules" preempted by AB 398. Moreover, Air District staff have not found anything in the legislative history of AB 398 that that would support such a distinction; to the contrary, the legislative history suggests that the Legislature intended the preemption provision to be a broad one. And there is nothing immediately obvious in the underlying purpose of the Legislation to suggest distinguishing between rules affecting existing sources and rules affecting only new and modified sources. The stated intent of the preemption was to ensure that sources subject to Cap and Trade would have only one set of regulatory requirements to comply with – the Cap and Trade regulations – and would not have to comply with other, potentially conflicting, requirements adopted by local air districts. This legislative purpose applies equally strongly with respect to new and modified sources as it does with respect to existing sources. For all of these reasons, Air District staff have concluded (preliminarily at least) that AB 398 preempts the Air District's ability to implement the revised BACT requirement as proposed at the June 2017 public workshops – although staff welcome further discussion and engagement on these issues with the commenters and other interested parties as staff continue to evaluate the potential for appropriate ways to address greenhouse gases under Regulation 2.

The commenters also stated that the Air District should at least impose BACT requirements for GHG sources that are not subject to Cap and Trade requirements and are therefore not subject to the AB 398 preemption – for example, small or medium-sized sources below the Cap and Trade applicability thresholds. This is one of the areas that Air District staff intend to consider for regulation going forward. These sources are not subject to AB 398 preemption, as the commenters pointed out, and so there may be opportunities to achieve meaningful greenhouse gas emission reductions from these sources under the NSR permit program, by applying BACT requirements or otherwise. There are a number of questions that would need to be answered before any regulation could be proposed, however, such as whether there are any effective greenhouse gas control technologies that can be used to achieve emission reductions at these sources, and whether the cumulative magnitude of the emission reductions that could be obtained makes regulating them worthwhile, as compared to other source categories where the Air

District could target its limited resources. Air District staff look forward to engaging with the commenters and other interested parties in evaluating these issues.

Finally, the commenters also pointed out that the limitations on federal regulatory authority under the Clean Air Act as addressed in the Supreme Court's *UARG v. EPA* case do not restrict the Air District's authority to regulate under state law. The commenters note that the federal Clean Air Act requirements are simply minimum requirements, and they do not prohibit the Air District from adopting requirements under state law that are more stringent.

Air District staff agree in general with the commenters' summary of the applicable legal principles regarding the Air District's authority under state law. However, EPA Region 9 staff have made clear that EPA will not approve any greenhouse gas regulations more stringent than what the Supreme Court articulated in *UARG v. EPA* as part of the federally-enforceable State Implementation Plan (SIP). Thus, the Air District needs to revise its SIP-approved regulations to conform to *UARG v. EPA*, although it remains free to go beyond that in non-SIP-approved regulations in accordance with state law. That is exactly what Air District staff initially proposed in connection with lowering the BACT threshold from the 75,000 tpy CO_2e authorized under federal law to 25,000 tpy CO_2e: Staff's proposal was to keep the current 75,000 tpy CO_2e limit in the SIP-approved regulation, and to put the lower 25,000 tpy CO_2e threshold into a separate "state-only" provision that would not be submitted to EPA for SIP approval. The Air District's ability to adopt the 25,000 tpy CO_2e BACT requirement under state law was subsequently preempted by AB 398, as explained above. But nothing prohibits the Air District from implementing other greenhouse gas requirements in its NSR program that are consistent with AB 398, even if they are more stringent than what the Clean Air Act requires under the Supreme Court's decision in *UARG v. EPA*. This is what Air District staff will be evaluating going forward. The Air District could adopt such regulations, it just would not be able to submit them to EAP for SIP approval.

Contrasting 350 Bay Area's very narrow reading of the AB 398 preemption provision, WSPA commented that AB 398 should be read very broadly to preempt Air District regulation of *all* greenhouse gases, not just CO_2. But this position is contrary to the clear and express language of AB 398, which states that a local air district may not adopt an "emission reduction rule for *carbon dioxide*" – not for any larger set of greenhouse gases. If the Legislature intended to preempt regulation of other greenhouse gases besides CO_2, it would have said so. Air District staff continue to maintain that the District retains the authority to regulate non-CO_2 greenhouse gas emissions from sources subject to Cap and Trade, and staff intend to continue evaluating whether any such regulations may be appropriate as part of their further efforts under Regulation 2. There is nothing in the language of the preemption provision to suggest that AB 398 restricts the Air District's authority in these areas.

B. Comments on Effectively Enforcing the Air District's NSR Requirements for Changes in Refinery Crude Slates

A second area of comments concerned a proposal that Air District staff are developing to enhance the District's ability to enforce its New Source Review regulations when petroleum refineries change their crude slates. This proposal would require refineries to notify the Air District and obtain approval before making any significant change in crude slate. This would give the Air District an opportunity to review the change and ensure that the refinery is not making any modification in connection with the change that would require a New Source Review permit – and to require that the refinery go through the permitting process and obtain a permit if one is required. Air District staff published proposed regulatory language to implement this requirement for the public workshops in June of 2017, and a number of commenters submitted comments on it. Staff subsequently concluded that further evaluation of the best way to implement this requirement is needed, however, and so staff are not proposing final action at this point. Staff are proposing final action at this time only on the technical and administrative amendments that need to be adopted immediately in order to avoid the threat of sanctions by EPA for not having a fully approved New Source Review program. But staff will continue to work on developing the crude slate NSR enforcement provision and look forward to engaging with all interested stakeholders in order to finalize a proposal for consideration by the Board of Directors.

WSPA commented that the Air District cannot go forward with the crude slate enforcement proposal at all, stating that the District's regulatory authority is limited to regulating air emissions from refineries, not what kinds of crude oils refineries can process. But the proposal *is* squarely a provision regulating air emissions, not a regulation of what kinds of crude oils a refinery can process. The purpose of the proposal is to ensure that the Air District can effectively implement and enforce its New Source Review rules, which are indisputably emissions control rules. It would not restrict or specify what types of crudes a refinery can process, it would require only that refineries submit information regarding their crude slates and crude oil processing operations so that the Air District can establish that they are complying with the applicable New Source Review rules. As long as refineries comply with applicable New Source Review air pollution requirements, they will remain free to process the crude slates that they deem most appropriate for their particular operation (subject to compliance with all other applicable regulatory requirements, of course).

WSPA also commented that there is no need for any regulatory revisions to ensure that the Air District can adequately enforce its NSR requirements, because there is no demonstrated connection between any changes in refinery crude slates and increases in emissions that would be subject to NSR. Air District staff disagree with this comment, and maintain that changes in crude slates can definitely lead to emissions increases in certain situations – for example, if a refinery changes to a heavier or sourer crude source. Air District staff are interested in evaluating the connection between the two in more detail, however, which is part of the reason why staff are deferring final action on the crude slate

provisions at this time. Air District staff look forward to working with WSPA and its members, as well as other interested members of the public, in finalizing a regulatory proposal for consideration by the Board of Directors.

WSPA also commented that the proposal to require pre-approval from the District before making a significant change in crude slate would impermissibly "redefine the source" by requiring refineries to construct or operate their equipment in a manner that is at odds with the fundamental design and purpose for which the equipment was proposed. Air District staff disagree. Requiring Air District pre-approval for a significant change in crude slate as an "alteration" under Regulation 2-1-233 would not require a refinery to do anything differently with respect to its equipment *at all*, let alone do anything that would require it to change the equipment's fundamental design and purpose. Moreover, to the extent that a refinery has to make an NSR "modification" to its operations under Regulation 2-1-234 in order to accommodate the change in crude slate, the "redefining the source" doctrine referenced in the comment letter will be applicable to the NSR permitting process and will ensure that the District does not "redefine the source" in the manner WSPA says it is concerned about.

Finally, WSPA also commented that the Air District cannot take any enforcement action with respect to a change in crude slate at a refinery absent some underlying basis in the regulations. Air District staff agree with this comment as a general principle, but again stress that the purpose and motivation for this entire initiative is to ensure that the *existing* NSR regulations are enforced effectively. If a refinery needs to make a physical change to or change in the method of operation of its equipment in order to accommodate new crude slates, and that change increases emissions above the threshold levels set forth in Regulation 2-1-234, that change is a "modification" and must go through the NSR permitting process under Regulation 2-2. If Air District staff discover information suggesting that a refinery has done so in connection with moving to a new crude slate without getting an NSR permit, the Air District will take appropriate enforcement action over the resulting violation of Regulation 2-2. As Air District staff made clear in the Staff Report, such enforcement action would be action to enforce the existing provisions of Regulation 2-2, not any attempt to regulate the refinery's choice of crude slate or to enforce some unwritten regulatory requirement that has not been adopted by the Board of Directors.

By contrast, 350 Bay Area and related commenters suggested that any change in crude slate is *already* subject to the Air District's permit requirements in the manner that District staff are contemplating. These commenters stated that any change in a refinery's crude slate constitutes a "physical change or change in the method of operations" of the refinery, which is either a "modification" if the change increases emissions above the thresholds stated in Regulation 2-1-234, or an "alteration" if it does not. This is not how the current regulations apply, however, which is why Air District staff are working on revising them. Specifically, facilities can switch to processing different types of feedstocks or raw materials that they are designed and permitted to handle without it being a "physical

change or change in the method of operation" under the regulations. Many facilities process a range of different feedstocks and raw materials, reflecting the reality that many industries experience natural fluctuations in the constituents or makeup of the raw materials they use. If a facility is designed and permitted to handle a range of materials, the facility can process materials within this range without having to get a permit revision; processing one type of material does not lock the facility in to processing only that one type of material going forward. This is how the New Source Review program has been designed and implemented, both nationally and within the Bay Area. And this is the reason why the Air District is proposing to change its regulations, so that facilities will be required to get Air District pre-approval before changing their feedstocks, even though such a change does not otherwise constitute a "physical change or change in the method of operation" of the refinery.

350 Bay Area also suggested that in order to address concerns around crude slate changes and the potential for emissions increases associated with them, the Air District should require refineries to document their crude slate compositions, calculate emissions based on their crude slate profile averaged over each month, and report those emissions to the District. Air District staff agree that, in general, tracking and documenting crude slate compositions and emissions appear to be the best approaches to addressing this issue. Some of these suggestions are already incorporated into the Air District's Petroleum Refining Emissions Tracking rule, Regulation 12-15, and Air District staff will be exploring how to implement them further in going forward with its proposal on addressing crude slate changes under Regulation 2.

In addition, Charles Davidson stated that if refineries switch to processing significant amounts of heavier or more sulfurous crude slates, they have the potential to implement "modifications" with sufficient emissions increases to trigger the "Prevention of Significant Deterioration" permitting requirements in Regulation 2-2. Air District staff agree with this comment, which is part of the reason why staff have been working on this crude slate enforcement proposal. Further information and analysis is required to ascertain the best approach to implementing the proposal, however, as noted above. Air District staff look forward to working with the commenter on these issues going forward.

C. Comments on Existing Regulatory Provisions Requiring Facilities to Offset Emissions Associated With Cargo Deliveries

Finally, WSPA also commented on the Air District's existing regulations that require facilities to offset emissions associated with the cargo carriers that serve the facility (i.e., ships and trains that deliver raw materials or other products). WSPA stated that the Air District lacks the legal authority to regulate these emissions and suggested that the District should remove all such provisions from Regulation 2-2. WSPA said that these offset requirements are preempted by the Interstate Commerce Commission Termination Act with respect to emissions from railroad cargo carriers serving the facility, and are preempted by Section 209 of the Clean Air Act with respect to emissions from ship cargo carriers serving the facility.

As Air District staff explained in response to similar comments at the workshop stage, the District is not proposing any changes to any requirements of District regulations related to offsetting a facility's emissions increases resulting from cargo carriers. The District has for many years required facilities to provide offsets for emissions from their cargo carriers when they install a new source or modify an existing source. California's other air districts have done so for years as well. District staff are not proposing to change these longstanding regulations in the proposed amendments.

Regarding the substance of WSPA's comments about federal preemption, these longstanding offset requirements do not attempt to regulate or manage rail or ship operations, and so they do not implicate any preemption concerns. Rail carriers and shipping operators are not subject to the offsets requirements themselves, and they remain free to operate in whatever manner they find most appropriate, subject to applicable regulatory requirements, regardless of the offset requirements. What the Air District's offset provisions do is require *stationary-source* facilities, which are indisputably subject to Air District regulatory jurisdiction, to offset any criteria pollutant emissions increases that will result when they install new sources or modify existing sources. If a facility is going to increase emissions within the Bay Area as a result of such a new or modified source – including increases that will result from cargo carriers serving the source – then the District has the authority to require the facility to provide offsets for those increased emissions. Doing so is important and necessary to ensure that the facility is not causing any net emissions increase as a result of installing its new or modified source, including cargo carrier emissions that occur as a direct result of the installation of the source. This authority is well-settled under California air pollution law and is not preempted by any federal laws or regulations, as demonstrated by the offsets provisions that the Air District and its sister California air districts have been implementing for many years without objection.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

California Environmental Quality Act

Initial Study and Proposed Negative Declaration

Proposed Technical and Administrative Amendments to New Source Review and Title V Permitting Rules

Regulation 2, Rule 1 (Permits – General Requirements)
Regulation 2, Rule 2 (Permits – New Source Review)
Regulation 2, Rule 4 (Permits – Emissions Banking)
Regulation 2, Rule 6 (Permits – Major Facility Review)

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October 2017

[Incorporating Revisions to Earlier Version Issued August 2017]

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INTRODUCTION

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CHAPTER 1
Introduction

The Bay Area Air Quality Management District (Air District or District) is proposing to make a number of technical and administrative revisions to two important Air District permitting programs: the New Source Review (NSR) program and the Title V Major Facility Review (Title V) program. Under the California Environmental Quality Act (CEQA), the Air District is required to consider the potential for any significant adverse environmental impacts to result from these proposed regulatory revisions. Air District staff have therefore directed the preparation of this Initial Study pursuant to CEQA.

As explained in detail in Chapter 3, the Initial Study has found that the proposed amendments will not have any significant adverse environmental impacts. Air District staff are therefore proposing that the District's Board of Directors adopt a Negative Declaration under CEQA pursuant to Section 15074 of the CEQA Guidelines.

The Air District is publishing this Initial Study and proposed Negative Declaration concurrently with drafts of the proposed amendments and a detailed Staff Report explaining what the proposed amendments will entail. Readers should review this Initial Study and proposed Negative Declaration in conjunction with those other documents in order to obtain a full understanding of the proposed amendments and their potential for adverse environmental impacts.

1.1 PURPOSE OF THIS DOCUMENT

The **Initial Study** is a preliminary assessment of the potential environmental impacts of the proposed project. The purpose of the Initial Study is to determine whether a Negative Declaration or Environmental Impact Report (EIR) must be prepared. (Guidelines § 15365.) If the Initial Study determines that there is substantial evidence that any aspect of the project, either individually or cumulatively, may cause a significant effect on the environment, regardless of whether the overall effect of the project is adverse or beneficial, then an EIR must be prepared. If the Initial Study determines that there is no substantial evidence that the project or any of its aspects may cause a significant effect on the environment, then a Negative Declaration should be prepared. (Guidelines § 15063(b).) As explained herein, this Initial Study has reached the second conclusion: that there is no substantial evidence that the proposed amendments will have any significant adverse effect on the environment. Accordingly, the Air District has prepared a proposed Negative Declaration. The Initial Study provides documentation for the finding in the proposed Negative Declaration that the project will not have a significant impact on the environment. (Guidelines § 15063(c)(5).)

The **Negative Declaration** is written statement by the lead agency briefly describing why the proposed project will not have a significant effect on the environment and therefore does not require an EIR. (Guidelines § 15371.) A Negative Declaration is prepared by Air District staff based on the analysis in the Initial Study, and then is proposed for adoption by the District's Board of Directors. Air District staff provide notice to the public of the proposed Negative Declaration and an opportunity to comment on it, and then the Board of Directors considers

it at a public hearing. The Board of Directors considers the proposed Negative Declaration along with any public comments received, and then adopts the Negative Declaration if it finds, using its independent judgment and analysis, that based on the whole record – including the Initial Study and any public comments – that there is no substantial evidence that the project will have a significant effect on the environment. (Guidelines § 15074(b).) A proposed Negative Declaration for consideration by the Board of Directors is included as Appendix A at the end of this document.

1.2 SCOPE OF THIS DOCUMENT

This document evaluates the potential impacts of the proposed amendments on the following resource areas:

- Aesthetics
- Agriculture and forestry resources
- Air quality
- Biological resources
- Cultural resources
- Geology / soils
- Greenhouse gas emissions and climate change
- Hazards & hazardous materials
- Hydrology / water quality
- Land use / planning
- Mineral resources
- Noise
- Population / housing
- Public services
- Recreation
- Transportation / traffic
- Tribal cultural resources
- Utilities / service systems

1.3 IMPACT TERMINOLOGY

The following terminology is used in this Initial Study/Negative Declaration to describe the levels of significance of impacts that would result from the proposed rule amendments:

- An impact is considered *beneficial* when the analysis concludes that the project would have a positive effect on a particular resource.

- A conclusion of *no impact* is appropriate when the analysis concludes that there would be no impact on a particular resource from the proposed project.

- An impact is considered *less than significant* if the analysis concludes that an impact on a particular resource topic would not be significant (i.e., would not exceed certain criteria or guidelines established by the District). Impacts are frequently considered less than significant when the changes are minor relative to the size of the available resource base or would not change an existing resource.

- An impact is considered *less than significant with mitigation incorporated* if the analysis concludes that an impact on a particular resource topic would be significant (i.e., would exceed certain criteria or guidelines established by the District), but would be reduced to a less than significant level through the implementation of mitigation measures.

1.4 ORGANIZATION OF THIS DOCUMENT

The content and format of this document, described below, are designed to meet the requirements of CEQA.

- Chapter 1, "Introduction," identifies the purpose, scope, and terminology of the document.

- Chapter 2, "Project Description," provides background information on the New Source Review and Title V Major Facility Review programs, describes the proposed rule amendments, and describes the area and facilities that would be affected by the amendments.

- Chapter 3, "Evaluation of Environmental Impacts," provides the substance of the Initial Study's analysis on which the proposed Negative Declaration is based. The evaluation follows the format of the Environmental Checklist adopted by the California Natural Resources Agency for this purpose in Appendix G of the CEQA Guidelines. This chapter includes a brief setting description for each resource area and identifies the impact (if any) of the proposed rule amendments on the resource topics listed in the checklist.

- Chapter 4, "References Cited," identifies all printed references and personal communications cited in this report.

- Appendix A, "Proposed Negative Declaration," presents the form of a Negative Declaration that Air District staff are proposing for adoption by the District's Board of Directors.

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CHAPTER 2

PROJECT DESCRIPTION

Project Overview

Objectives

Project Location

Background on New Source Review and
Title V Permit Programs Being Amended

Detailed Project Description

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CHAPTER 2
Project Description

This chapter describes the proposed amendments to the Air District's New Source Review and Title V permitting regulations that are the subject of this Initial Study. It provides background on the regulatory programs being amended and the objectives that the Air District is seeking to fulfill with the proposed amendments, and it describes in detail the specific regulatory changes involved.

2.1 PROJECT OVERVIEW

The Air District is proposing a set of technical and administrative amendments to two District permitting programs, the "New Source Review" (NSR) pre-construction permit program and the Title V "Major Facility Review" operating permit program. The proposed changes will not fundamentally alter the way these programs work, but they are important and necessary to address several developments that have occurred since the Air District last updated the programs in 2012.

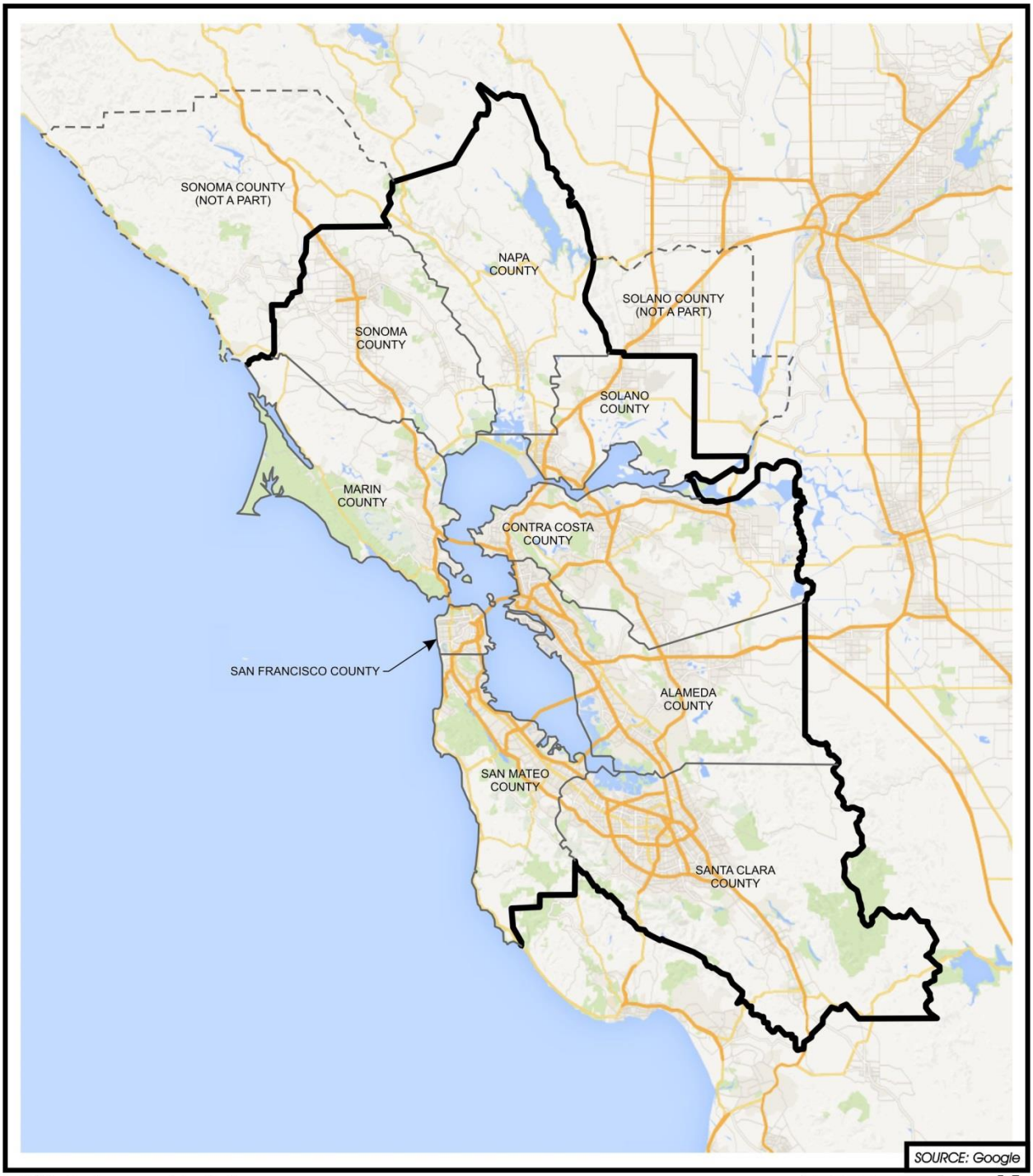
The recent developments that have given rise to the need for revisions to the NSR and Title V permitting programs fall into three categories. First, the U.S. Environmental Protection Agency (EPA) has identified 13 specific "deficiencies" that the Air District needs to address in order for EPA to fully approve the District's NSR program under the federal Clean Air Act. Second, Air District staff have identified a number of additional areas where further revisions and clarifications are needed, based on Staff's experience in working with the 2012 updates since they were adopted. Third, the Air District needs to make certain additional revisions to align the Air District's programs with the U.S. Supreme Court's ruling in *Utility Air Regulatory Group v. EPA* (134 S.Ct. 2427 (2014)), which interpreted several relevant provisions of the federal Clean Air Act regarding the Act's NSR and Title V program requirements.

The proposed amendments will implement various technical and administrative changes to the Air District's current NSR and Title V provisions in Regulation 2 in order to address each of these developments. The specific changes are discussed in detail in Section 2.5.

2.2 OBJECTIVES

The primary objectives of the proposed amendments are:

- To make revisions to the NSR program requested by EPA to allow EPA to fully approve the District's regulations under the Clean Air Act;
- To make revisions identified by Air District staff to ensure that the regulations effectively implement the most recent amendments adopted in 2012; and
- To conform the Air District's NSR and Title V regulations to the Supreme Court's recent decision in the *UARG v. EPA* case.



Project No. 3046

Figure 2.2-1

N:\3046\BAAQMD Map.cdr

2.3 PROJECT LOCATION

The Air District has jurisdiction over stationary sources of air emissions in the San Francisco Bay Area Air Basin. The Air District's jurisdiction covers an area encompassing 5,600 square miles, including all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties, and portions of southwestern Solano County and southern Sonoma County. A map of the Air District's jurisdictional boundaries is provided in Figure 2.2-1. The proposed amendments have the potential to affect facilities and sources that are subject to the New Source Review and Title V permitting programs throughout this area.

2.4 BACKGROUND ON NEW SOURCE REVIEW AND TITLE V PERMIT PROGRAMS BEING AMENDED

The proposed amendments involve revisions to two important Air District permitting programs, the NSR program and the Title V program.

2.4.1 New Source Review (Regulation 2, Rule 2)

The Air District's NSR program is a comprehensive air permitting program that applies to stationary-source facilities within the District's jurisdiction. Whenever a facility wants to install a new source of air emissions or make a modification to an existing source, the NSR program requires the facility to obtain a permit and implement state-of-the-art air pollution control technology to limit the source's emissions. NSR is a pre-construction permitting requirement, meaning that the facility is required to obtain its NSR permit before it can begin work on the new source or modification to an existing source.

The principal substantive requirement for obtaining an NSR permit is that the proposed new or modified source must use the "Best Available Control Technology" to limit its emissions to the greatest extent possible. In addition, for pollutants for which the Bay Area is not in compliance with applicable ambient air quality standards (as well as a few others), the proposed source must "offset" its emissions with corresponding emission reductions from other sources so as to achieve no net increase in emissions of that pollutant. Finally, the new or modified source must demonstrate through computer modeling that it will not cause or contribute to any violations of specified air quality standards.

The regulations governing the Air District's NSR program are set forth primarily in District Regulation 2, Rule 2, entitled "Permits – New Source Review." Additional regulatory provisions supporting the NSR program are set forth in Regulation 2, Rule 4 (entitled "Permits – Emissions Banking"), which establishes the procedures for banking emission reductions generated when sources shut down so that they can be used to offset emissions increases from future projects; and in Regulation 2, Rule 1 (entitled "Permits – General Requirements"), which sets forth a number of general requirements that apply to all permitting programs in Regulation 2. The requirements of the NSR program are also discussed in more detail in the Staff Report for the proposed amendments, as well as in other materials that the Air District has published for the NSR program.

2.4.2 Title V Major Facility Review (Regulation 2, Rule 6)

The Air District's Title V program (also known as "Major Facility Review") requires "major" facilities – those with emissions of over 10, 25, or 100 tons per year, depending on the pollutant – to obtain operating permits. The Title V operating permit does not impose any additional substantive requirements on these facilities to limit their emissions. Instead, the purpose of the Title V permit is to collect all of the substantive emissions control requirements applicable to the facility under District, state and federal permits and regulations into one comprehensive document, which improves the transparency and enforceability of the regulatory requirements for these complex "major" facilities.

Facilities that exceed the applicable "major" facility thresholds must apply for and obtain a Title V operating permit. Upon receiving a Title V permit application, the Air District reviews all of the legal requirements related to air quality that apply to the facility's operations, including requirements from NSR permits, requirements from other Air District regulations, and requirements from applicable state and federal regulations. The Air District incorporates all of these requirements into a comprehensive set of "applicable requirements" that are set forth in the Title V permit. The District may also impose additional monitoring requirements, over and above what is required under existing regulations, if necessary to ensure that the facility will operate in compliance with all of the identified applicable requirements at all times. The Air District then issues the Title V permit through a public process, with notice to any affected members of the public and an opportunity for the public to comment on and engage in the permit review process.

The Air District's Title V regulations are set forth in District Regulation 2, Rule 6, entitled "Permits – Major Facility Review." As with the NSR regulations, there are also a few relevant provisions also contained in Regulation 2, Rule 1, "Permits – General Requirements." The requirements of the Title V program are also discussed in more detail in the Staff Report for the proposed amendments.

2.4.3 Oversight and Approval by EPA and the California Air Resources Board

The Air District's NSR and Title V programs are subject to certain minimum requirements imposed by California and federal law. The Air District has a fair amount of latitude to craft its programs in a manner most suited to the specific circumstances facing the San Francisco Bay Area. But the programs must at a minimum satisfy the state and federal program requirements, and they are subject to review and approval by the California Air Resources Board (CARB) and EPA to ensure that they do. One of the main reasons why the Air District needs to implement the proposed amendments is to make changes required by EPA for full approval of the District's programs under the federal Clean Air Act.

2.5 DETAILED PROJECT DESCRIPTION

As noted above, the proposed amendments are necessary to make changes to allow EPA to fully approve the Air District's permitting programs under the Clean Air Act; to make revisions identified by Air District staff based on their experience in implementing the 2012 amendments to ensure that the regulations function effectively; and to conform the Air District's programs to the

Supreme Court's ruling in the *UARG v. EPA* case. To do so, the proposed amendments will make the following specific revisions to the Air District's NSR and Title V regulations.

- The proposed amendments will remove certain language in three provisions in Regulation 2, Rule 1 to address EPA's concerns that the current regulatory language relies on provisions related to agricultural sources that have not been approved by EPA. The specific provisions in which language is being removed are (i) the definition of "agricultural source" in Section 2-1-239, (ii) the procedures in Section 2-1-424 for permitting sources that lose their permit exemption because of a change in regulations; and (iii) the permit exemption for small agricultural sources in Section 2-1-113.1.2. The proposed amendments will substitute different language that EPA does not find objectionable, but which has the same substantive meaning. There will be no substantive change in what the regulations require as a result of these language revisions.

- The proposed amendments will change the way that the definition of "modification" in Section 2-1-234.2 incorporates terms from EPA's federal NSR regulations by reference. EPA objected to certain federal regulatory terms that Section 2-1-234.2 currently incorporates by reference, and requested that the Air District reference different federal regulatory terms instead. The proposed amendments will make this change. The revised terms that will be incorporated by reference have the same substantive meaning, and so there will be no substantive change in what the regulations require as a result of these language revisions.

- The proposed amendment will revise the definition of "PSD Project" in Section 2-2-224 to specify that a project can be a PSD Project if it is located at a facility that exceeds the "major" facility thresholds for *any* regulated NSR pollutant as defined in EPA's federal PSD regulations. This will be a revision to the current definition of "PSD Project," which applies only if a facility exceeds the "major" facility thresholds for *an attainment pollutant*. The practical effect of this change could be a slight expansion of the universe of facilities subject to the PSD requirements of Regulation 2-2. This would occur to the extent that there are facilities that are below the "major" source threshold for all attainment pollutants, but are above the threshold for a non-attainment pollutant. Projects at these facilities that involve significant net emissions increases will be "PSD Projects" under the revised definition in Section 2-2-224, and thus subject to PSD requirements,[1] whereas they are not under the current version of Section 2-2-224. The substantive impact of such a change will be minor, however, because (i) there will be few (if any) additional facilities that become "major" facilities that are not already "major" facilities under the current regulation; (ii) to the extent that there are additional facilities that become "major" facilities as a result of this change, they are not likely to undertake projects with significant net emissions increases with any great frequency; and (iii) when facilities do undertake such projects, the substantive requirements for such projects will in many cases not be significantly different than what such facilities are subject to already under the current regulations.

[1] The substantive PSD requirements are the PSD "Best Available Control Technology" requirement under Regulation 2-2-304 and PSD air quality analysis requirements under Regulations 2-2-305 through 2-2-307.

- The proposed amendments will revise Section 2-2-305.3 to specify that an applicant must obtain written approval from EPA, as well as from the Air District, before using an alternative computer model for an air quality analysis. This additional EPA approval requirement will not make any substantive change to the computer modeling provisions and related air quality analysis provisions in Section 2-2-305.

- The proposed amendments will revise Section 2-2-611 (with related revisions to Sections 2-2-217 and 2-2-224.1) to add a few additional facility categories that must include their fugitive emissions when determining if the facility's emissions exceed the federal "major" facility threshold. The current regulations require that fugitive emissions are counted for facilities in any of 28 specified source categories. The proposed amendments will require that facilities also need to include fugitive emissions if they are in any other source category that was regulated under Section 111 or 112 of the Clean Air Act as of August 7, 1980. The practical effect of this change could be a slight expansion of the universe of facilities that exceed the "major" facility threshold, to the extent that there are any facilities that are currently below the threshold but close enough to it that their fugitive emissions will push them over the threshold. The substantive impact of such a change will be minor, however, because there are not a large number of facilities that would fall into this category, and even where there are such facilities, the additional requirements that will apply to such facilities as a result of the proposed amendments will in many cases not be significantly different from what they are currently subject to.

- The proposed amendments will revise the requirement in Section 2-2-401.4 for major projects to provide an evaluation of their potential impacts on "Class I Areas," which are national parks and other similar areas designated for heightened protection under the Clean Air Act. The current rules require a Class I Area impacts analysis for projects located within 100 km of a Class I Area. The proposed amendments will revise this 100 km limit to specify that a Class I Area analysis must be undertaken as required by guidance published by the Federal Land Managers' Air Quality Related Values Work Group. That guidance requires Class I Area analyses beyond 100 km to the extent that the project's emissions in tons per year will be over 10 times the distance from the Class I Area in kilometers – i.e., a 1,200 tpy project will require the analysis if it is within 120 km of a Class I Area, a 1,500 tpy project will require the analysis if it is within 150 km of a Class I Area, etc. This change could potentially require additional Class I Area impact analyses, but it is highly unlikely that it will make any difference in practice. In order for a project to be affected by the change, it will have to involve an emissions increase of over 1,000 tons per year, and emissions increases of that magnitude are highly unlikely in the Bay Area.

- The proposed amendments will revise Section 2-1-411 to establish time limits for facilities to apply for a refund of offsets (emission reduction credits) they have provided in connection with obtaining an NSR permit. This provision allows permit applicants to apply for refunds in cases where they have provided additional offsets beyond what was required for the permit, or where they end up not building or operating the source for which the offsets were provided. The time limits will be two years after issuance of an authority to construct, or six months after issuance of a permit to operate, beyond which a facility will

no longer be eligible to obtain an offsets refund. This revision is not expected to have any substantive effect on the ability for applicants to obtain refunds in cases where they are eligible for them, because the time limits are long enough to allow facilities to determine whether they are eligible for a refund – and how much of a refund they are eligible for – and to submit their applications well before the deadline. As a practical matter, no permit applicants are expected to be denied the opportunity to obtain refunds as a result of this change.

- The proposed amendments will revise Section 2-2-412, which governs the procedures under which the Air District makes an annual demonstration that its NSR program is obtaining at least as many offsets as are required under EPA Region 9's interpretation of the federal NSR regulations. This provision was adopted to address the fact that EPA Region 9 uses a somewhat different approach to collecting offsets from what the Air District requires under its NSR regulations. This difference in approach means that the Air District could potentially collect fewer offset credits for a particular major-source permit than EPA Region 9 would require under its interpretation of the federal regulations. The equivalence demonstration provides a mechanism through which the Air District demonstrates that, overall, its rules collect more offsets District-wide than EPA would require – meaning that the Air District's program is more stringent overall even if the District collects fewer offsets from certain individual projects.

  The Air District's current offsets equivalence demonstration provision in Section 2-2-412 addresses one area where the District's offsets requirements take a different approach than EPA Region 9 does. EPA has since identified a second area of difference, and the proposed amendments to Section 2-2-412 will require the equivalence demonstration to address this second area as well. The revised provision will require the Air District to evaluate the amount of any shortfall between (i) what EPA Region 9 would have required for each major NSR permit the Air District issues each year and (ii) what the Air District actually collected for those permits. To the extent that there is any shortfall between what EPA Region 9 would have required and what the Air District actually collected, the District will have to demonstrate that it obtained more than enough offsets to cover this shortfall from smaller permits where EPA would not have required any offsets at all under the federal program.

  The proposed amendments also make several related revisions to the current equivalence demonstration provision. They expand the regulatory language to provide more specificity and detail on how the equivalence demonstration process works. They also add $PM_{2.5}$ as a pollutant that must be addressed in the demonstration. They also remove the requirement that the Air District must procure and provide credits where there are insufficient credits available to make up for any shortfall. And they add a "backstop" mechanism to require the Air District to collect additional offsets from major NSR permits according to EPA Region 9's approach in the unlikely event that the District cannot make the demonstration for a given year.

  These changes are unlikely to have any substantive impact because for the most part they simply revise the administrative procedures governing the way the Air District makes its equivalence determination. As a practical matter, the Air District has never had any

problem demonstrating that its offsets requirements are more than sufficient to surpass EPA Region 9's interpretation of the offset requirements, and the proposed amendments are unlikely to change that situation because overall the District's offsets requirements are much more stringent than the federal requirements. Moreover, even if there were ever to be a situation where the Air District could not make the equivalence demonstration for a certain year, that would not have a significant effect on projects permitted under the NSR program, as they could still be permitted the same way. They would just have to adjust the amount of offsets they would have to provide to conform to EPA Region 9's interpretation.

- The proposed amendments will revise Section 2-2-605, which governs how much emission reduction credit is available when a source is shut down or curtailed. The current rule allows "fully offset" sources – i.e., sources that provided offsets for the full amount of their permit limits when they were permitted – to take credit for their maximum *permitted* emissions levels. EPA objected that this is inconsistent with federal requirements, and is requiring that the District allow credit only for the source's historical *actual* emission levels, not its maximum permitted emissions. This change will reduce the amount of credit allowed when a "fully offset" source is shut down, which could have an effect on reducing the total amount of credits available regionwide to offset future increases from new projects. (Note that the proposed amendments include a parallel change in the banking provisions in Regulation 2-4, removing Section 2-4-301.7.) This could result in the stock of banked credits declining more quickly, which could cause a marginal increase in the cost of credits and could lead to the District's emissions bank being exhausted at an earlier date than it otherwise would be. Any such impact would occur only on the margins, however, and it is not expected to result in any significant changes in how projects at affected facilities are implemented in practice.

- The proposed amendments will revise the exemption for small agricultural sources in Section 2-1-113.1.2 to make clear that the exemption's 50 ton-per-year size limit does not limit eligible sources to 50 tons per year of greenhouse gases. Given the nature of greenhouse gases, a 50 tpy limit would effectively eliminate the exemption for virtually all qualifying agricultural sources. This was never the intention with respect to how this exemption would function. The revision will keep the 50 tpy size limit for all other regulated air pollutants (except for fugitive dust, which is currently not subject to the exemption limit), which will create an effective size limit to ensure that only small agricultural sources are eligible. Accordingly, there will be no substantive change to how this exemption has been limited historically.

- The proposed amendments will make a similar change to the provisions in Section 2-1-413 for permitting sources that will be used at multiple locations throughout the Air District. The change will make clear that the 10 tpy limit in subsection 413.1 for such sources to be eligible for multi-location permits applies only to regulated pollutants other than greenhouse gases. Again, given the nature of greenhouse gases, a 10 tpy limit would effectively eliminate the ability to apply for multi-location permits for virtually all qualifying sources, which was never the intention. The 10 tpy limit will remain unchanged

for all other regulated air pollutants, which will ensure that only small sources are eligible to use this provision, with no substantive change to how it has been applied historically.

- The proposed amendments will revise the multi-location permitting provision in Section 2-1-413 to preclude the use of multi-location permits for sources that will reside at the same facility for more than 12 months. In the event that a source with a multi-location permit is operated at a single facility for more than 12 months, it will lose its eligibility to use the multi-source permit and will have to be included in the permit for that specific facility. This revision will not make any substantive change to the way that such sources are permitted and operated, as such sources will still need to satisfy applicable NSR permit requirements regardless of which provision they are permitted under. Whether they are permitted for use at multiple locations or for use at a single facility, they will still have to comply with all applicable NSR permitting requirements and other related requirements.

- The proposed amendments will revise the definition of "facility" in Section 2-1-213 to clarify that equipment operated by an agent or contractor on behalf of a facility for more than 12 months is considered to be part of the facility. This will mean that the equipment needs to be included under the facility's permit, and not under the agent or contractor's permit. This change will eliminate a loophole whereby equipment that is dedicated to one specific facility can get excluded from the facility's permit simply because it is owned or operated by a third party working at the facility (i.e., the agent or contractor). This change will primarily affect the determination of who is responsible for obtaining and maintaining the permit for such equipment, and will not have any significant substantive effect on how that equipment is permitted or operated at the facility.

- The proposed amendments will remove the redundant provision in the definition of "greenhouse gases" in Section 2-2-214 addressing how a facility's greenhouse gases are measured for purposes of determining whether the facility exceeds the federal "major" facility thresholds. The Supreme Court's ruling in the *UARG v. EPA* case established that greenhouse gases are not counted in determining whether a facility is a "major" facility under the Clean Air Act. As such, the provision addressing how to measure greenhouse gases for this purpose is no longer necessary. Removing this element of the "greenhouse gas" definition will have no substantive effect on the NSR program, as it is now clear in the aftermath of the Supreme Court's decision that the federal NSR program does not regulate greenhouse gases in this manner, and the District's program incorporates the federal provisions affected by that decision directly.

- The proposed amendments will also remove all of the provisions addressing greenhouse gases in the Title V regulations in Regulation 2, Rule 6. The *UARG v. EPA* decision eliminated the basis for these provisions, as it made clear that Title V does not apply to facilities based on their greenhouse gas emissions. To align the District's Title V program with the federal requirements as delineated in the *UARG v. EPA* decision, the proposed amendments will therefore remove Section 2-2-222.6, which added greenhouse gases as a "regulated air pollutant" subject to the Title V program, as well as related provisions in Regulation 2, Rule 6 addressing greenhouse gases. This change may affect a small number

of facilities that were "major" facilities subject to Title V permit requirements solely because of their greenhouse gas emissions, but will now not be "major" because they do not have emissions of any other regulated air pollutant above the Title V "major" facility threshold. But there will be no change in the substantive requirements applicable to any such facilities, as Title V does not impose substantive emissions control requirements. As described above, Title V simply collects all existing substantive requirements from other sources and incorporates them into a single comprehensive permitting document to improve transparency and enforceability. Any facilities that are no longer subject to Title V permitting because of these changes will still be required to comply with the same substantive requirements under their District permits and applicable District, state and federal regulations.

- The proposed amendments will also revise Section 2-4-301 in the Air District's banking provisions (specifying what emission reductions are bankable) to state explicitly that emission reductions must be real, permanent, quantifiable, enforceable, and surplus in order to be banked. This revision will not have any substantive impact on the way facilities operate, as the Air District's program currently requires emission reductions to satisfy all of these requirements to be bankable. This revision simply makes the requirement explicit in the text of Section 2-4-301.

- Finally, the proposed amendments will also revise Section 2-4-302 in the banking regulations, which sets forth requirements for banking of emission reductions from closures. This revision will remove subsection 302.3, which on its face could be read to allow emissions from a closure to resume after a banking certificate is issue. Removal of this provision will ensure that if a source is closed and the resulting emission reductions are banked, the emissions cannot resume again under any circumstances. This revision will also have no substantive impact on the way facilities operate, as a reduction must be permanent under the current regulations in order to qualify as an "Emission Reduction Credit" that can be banked. This revision will conform the language of Section 2-4-302 to this existing requirement, with no substantive change to the provisions governing what emission reductions can be banked.

The Air District is publishing the text of the proposed amendments in conjunction with this Initial Study, which sets for the specific revised regulatory language for each of these proposed changes. The proposed changes are also described in detail in the Staff Report that has been prepared for the proposed amendments.

CHAPTER 3

EVALUATION OF ENVIRONMENTAL IMPACTS

Introduction

General Information Form

Summary Checklist:
Environmental Factors Potentially Affected

Determination

Detailed Checklist and Discussion:
Evaluation of Environmental Impacts

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CHAPTER 3
Evaluation of Environmental Impacts

INTRODUCTION

The Initial Study is required to identify and evaluate the proposed project's environmental effects. The California Natural Resources Agency has published a checklist for lead agencies to use in doing so, in Appendix G of the CEQA Guidelines. The Appendix G environmental checklist provides a standard evaluation tool to identify a project's adverse environmental impacts. The Guidelines specifically authorize and encourage the use of Appendix G to satisfy the legal requirements for sufficiency of the Initial Study. (Guidelines §§ 15063(d)(3), 15063(f).)

The Appendix G checklist consists of four elements:

- A general information form, which identifies some basic information about the proposed project.
- A summary checklist of "Environmental Factors Potentially Affected," which lists each resource area evaluated and indicates whether or not the proposed project may potentially have a significant impact in that area.
- A "Determination" form, which states the conclusion that Air District staff have reached as to whether there will be any potentially significant impacts and whether an EIR or a Negative Declaration will be prepared.
- A detailed "Evaluation of Environmental Impacts" checklist, which provides the full analysis and explanation of whether there will be any potentially significant impacts for each impact area.

Each of these elements of Appendix G is set forth below.

GENERAL INFORMATION

Project Title:	Proposed Amendments to four Rules in District Regulation 2 (Permits): Rule 1 (General Requirements), Rule 2 (New Source Review), Rule 4 (Emissions Banking) and Rule 6 (Major Facility Review)
Lead Agency Name:	Bay Area Air Quality Management District
Lead Agency Address:	375 Beale Street, Suite 600 San Francisco, California 94105
Contact Person:	Greg Stone
Contact Phone Number:	415-749-4745
Project Location:	The proposed amendments to Regulation 2 apply to the area within the jurisdiction of the Bay Area Air Quality Management District, which encompasses all of Alameda, Contra Costa, Marin, San

	Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano County and southern Sonoma County.
Project Sponsor's Name:	Bay Area Air Quality Management District
Project Sponsor's Address:	375 Beale Street, Suite 600 San Francisco, California 94105
General Plan Designation:	Regulation 2 applies to the area within the jurisdiction of the Bay Area Air Quality Management and would encompass all general plan designations within the Bay Area.
Zoning:	Regulation 2 applies to the area within the jurisdiction of the Bay Area Air Quality Management and would encompass all types of zoning within the Bay Area.
Description of Project:	See Chapter 2.
Surrounding Land Uses and Setting:	See "Affected Area" in Chapter 2.
Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun?	No tribes have requested consultation.

SUMMARY CHECKLIST – ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The following environmental impact areas have been assessed to determine their potential to be affected by the proposed project. Impact areas in which the proposed project may have a significant impact are marked with a "✓". An explanation supporting the determination of significant impacts can be found in the Detailed Checklist and Discussion section below.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology / Soils
☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☐ Hydrology / Water Quality
☐ Land Use / Planning	☐ Mineral Resources	☐ Noise
☐ Population / Housing	☐ Public Services	☐ Recreation
☐ Transportation / Traffic	☐ Tribal Cultural Resources	☐ Utilities / Service Systems
☐ Mandatory Findings of Significance		

DETERMINATION

On the basis of this initial evaluation:

☒ I find the proposed project COULD NOT have a significant effect on the environment, and that a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be significant effects in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Dated: 10/11/17

Jaime Williams
Director of Engineering
Bay Area Air Quality Management District

DETAILED CHECKLIST AND DISCUSSION – EVALUATION OF ENVIRONMENTAL IMPACTS:

The proposed amendments to Air District Regulation 2 will make technical and administrative changes to the District's New Source Review (NSR) and Title V permit programs as required by EPA and the federal Clean Air Act. These technical and administrative revisions are necessary to allow EPA to fully approve the District's programs under the Act. The proposed amendments will also make additional minor revisions to ensure that the NSR program can be implemented effectively.

While these changes are important to ensure that the Air District's programs function properly from a legal and practical standpoint, they are relatively minor and will not alter the way the NSR and Title V programs regulate stationary air pollution sources in any fundamental manner. In particular, the proposed changes will not require any substantial changes in the way facility owners construct and operate their equipment.

A few of the technical and administrative amendments will result in minor expansion of the scope of the NSR program at the margins, but the changes will be minimal and will not make any substantial changes to how the program operates currently. For example, the revisions to Section 2-2-224.1 will make the program's Prevention of Significant Deterioration (PSD) requirements apply to major sources of non-attainment pollutants, and not just to major sources of attainment pollutants. This could slightly expand the universe of facilities subject to these requirements if there are facilities that are currently below the "major" facility thresholds for all attainment pollutants but over the threshold for a non-attainment pollutant. Similarly, the addition of a few additional source categories to the list of facilities that need to count their fugitive emissions when determining if they exceed the "major" facility thresholds under Section 2-2-611 could slightly expand the universe of major facilities, to the extent that there may be facilities in any of those source categories that are below the major facility threshold without their fugitive emissions included, but are close enough to the threshold that their fugitive emissions will push them over it. In addition, the elimination of the provision in Section 2-2-605.2 granting emission reduction credits based on a "fully offset" source's maximum *permitted* emissions, and instead restricting the amount of credit to the source's *actual* emissions, may marginally reduce the amount of emission reduction credits available District-wide, which may incrementally increase the cost of credits and could potentially cause the District's emissions bank to be depleted earlier than it otherwise would be. And the incorporation of new guidance on determining whether a project applicant needs to prepare an air quality analysis for special "Class I" areas under Section 2-2-401.4 could require a few additional applicants to have to undertake such analyses, to the extent that applicants propose very large projects located a long distance away from a Class I area.

These changes will make an incremental expansion in the scope of the Air District's NSR program at the margins, and they could therefore potentially subject a facility to some additional regulatory requirement in a way that is not required currently. The potential for such a situation to arise in practice would depend on whether there are any facilities in the Bay Area in any category described above that could be affected by these changes, and whether (and to what extent) such facilities may decide to pursue projects involving the installation of new sources, or the modification of existing sources, that would implicate any of the changes. It is unlikely that there will be a large

number of facilities affected, however, and even for facilities that are affected, it is not likely that they will undertake many projects that will be affected.

Furthermore, if any facility does propose a project that will be subject to any changed regulatory requirements as a result of the proposed amendments, it is not likely that the facility will be required to make any significant substantive changes to the project compared to what is required under the current regulations. For example, if a facility becomes a "major" facility and its project becomes subject to the PSD "Best Available Control Technology" requirement in Section 2-2-304, it is unlikely that the facility would have to make any substantive changes to limit the project's emissions over and above what is already required under the District's Best Available Control Technology requirement in Section 2-2-301. If a facility needs to procure additional emission reductions to satisfy the rule's offset requirements, it will simply have to find additional reductions within the facility or purchase more offsets from the District's emissions bank, with no need to fundamentally change the design of the project. And if a facility is required to undertake some additional air quality analysis, that analysis is not likely to require any significant change in the project to address an air quality impact that is not already addressed under the current regulations.

In addition, these revisions are required by the Clean Air Act, and as a practical matter facilities in the Bay Area will be subject to them regardless of whether the Air District adopts the proposed amendments. This is because EPA is authorized to step in and impose the federal NSR requirements itself if the Air District does not do so, which will subject permit applicants to all of these requirements even if the District does not act. In this respect, the proposed amendments will not make any changes at all to the regulatory landscape that will apply to affected facilities in the Bay Area going forward. That landscape will include all of these federally required provisions regardless of whether the Air District adopts the proposed amendments. This situation further underscores how the proposed amendments will not have any *de facto* substantive impact on the way facility owners will be required to construct and operate their equipment.

Beyond these provisions making minor changes to the scope of the Air District's NSR program, the remainder of the proposed amendments do not affect the program's substantive requirements in any way. Many of the amendments apply only to the procedural requirements governing how the permitting programs are administered, such as the requirement for EPA to approve the use of alternative computer models (Section 2-2-305.3), the time limits on applicants' requests for offset refunds (Section 2-2-411), and the procedures by which the Air District demonstrates each year that its emissions "offsets" provisions are at least as stringent as what is required under federal law (Section 2-2-412). Others involve only revisions to the specific terminology used in the regulations without any substantive change in meaning, such as the language changes in the agricultural source provisions (Sections 2-1-239 and 2-1-113.1.2) and the terms from EPA's regulations incorporated by reference into the definition of a "modification" subject to the NSR requirements (Section 2-1-234.2). These revisions will not require permitted facilities to do anything differently than what is required under the current regulations. They will simply make the revisions necessary to allow EPA to fully approve the District's regulatory programs and to achieve the other related goals of the proposed amendments.

Given the narrow scope of the proposed amendments and the fact that they are limited to minor technical and administrative changes in the regulations, the proposed amendments are not expected

to result in any significant change in the way the regulations work or what they require of regulated facilities in the Bay Area. As such, the proposed amendments are not expected to result in any significant changes at any affected facilities that will adversely impact any environmental resources. The potential for significant impacts on each specific environmental resource area evaluated is addressed in more detail below following the specific checklist for that resource area.

ENVIRONMENTAL CHECKLIST AND DISCUSSION

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less-than-Significant Impact	No Impact
I.	**AESTHETICS.** Would the project:				
a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☑
b)	Substantially damage to scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a scenic highway?	☐	☐	☐	☑
c)	Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☑
d)	Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	☐	☐	☐	☑

Setting

The Bay Area Air Quality Management District covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano County and southern Sonoma County. The area of coverage is vast (about 5,600 square miles), so that land uses vary greatly and include commercial, industrial, residential, agricultural, and open space uses. Important views of natural features include the Pacific Coast and ocean, San Francisco Bay, Mount Tamalpais, Mount Diablo, and other peaks and inland valleys of the Coast Range. Enclosed views like those along roads winding through redwood groves, and broader views of the ocean and lowlands, such as along ridgelines, are in abundance in the Bay Area. Cityscape views offered by buildings and distinctive Bay Area bridges are also important built visual resources to the region (ABAG, 2013). Because of the variety of visual resources, scenic highways or corridors are located throughout the Bay Area and include 15 routes that have been designated as scenic highways and 29 routes eligible for designation as scenic highways (ABAG, 2013).

The amendments to Regulation 2 will affect stationary sources in the Bay Area that are typically located within commercial, industrial and institutional facilities. Scenic highways or corridors are generally not located in the vicinity of these facilities.

Regulatory Background

Visual resources are generally protected by the City and/or County General Plans through land use and zoning requirements.

Significance Criteria

The proposed project impacts on aesthetics will be considered significant if:

- The project will block views from a scenic highway or corridor.
- The project will adversely affect the visual continuity of the surrounding area.
- The impacts on light and glare will be considered significant if the project adds lighting which would add glare to residential areas or sensitive receptors.

Discussion of Impacts

I a-d. The proposed rule amendments are designed to make technical and administrative changes to the New Source Review pre-construction permit program and the Title V Major Facility Review operating permit program in the Bay Area. The modifications to the NSR program would make the District's regulations consistent with the federal requirements, but they are not expected to require the construction of any new or modified equipment within the Bay Area. The amendments to the Title V program would remove GHGs as a regulated pollutant. The proposed Title V amendments are not expected to require the construction of any new equipment or modify equipment at stationary sources. Any new development potentially affecting visual resources would not be as a result of the proposed rule amendments and approval of those projects including evaluation of their environmental impacts would occur regardless of the proposed amendments to Regulation 2.

Therefore, the proposed amendments to Regulation 2 are not expected to impact scenic resources or vistas or degrade the existing visual character of any site or its surroundings, as no new facilities are expected to be required. Similarly, the proposed rule amendments are not expected to require any new lighting. The existing commercial, industrial, or institutional facilities that may be impacted by the proposed amendments to Regulation 2 are currently operating and lit for nighttime work if necessary, and no additional light or glare are expected to be added to impact day or nighttime views in the District.

Conclusion

Based upon these considerations, no significant adverse aesthetic impacts are expected from the adoption of the proposed Regulation 2 amendments including revisions to the NSR Program and the Title V Major Facility Review program.

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
II.	**AGRICULTURE and FORESTRY RESOURCES.** Would the project:				
a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☑
b)	Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract?	☐	☐	☐	☑
a)	Conflict with existing zoning for, or cause rezoning of, forest land as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				
b)	Result in the loss of forest land or conversion of forest land to non-forest use?				
e)	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☑

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles), so that land uses vary greatly and include commercial, industrial, residential, agricultural, and open space uses. Some of these agricultural lands are under Williamson Act contracts. Agricultural land under Williamson Act contract includes both prime and nonprime lands. Prime agricultural land includes land with certain specific soil characteristics, land that has returned a predetermined annual gross value for three of the past five years, livestock-supporting land with specific carrying capacities, or land planted with fruit or nut trees, vines, bushes or crops that have a non-bearing period of less than five years (Government Code §51200-51207). Nonprime lands include pasture and grazing lands and other non-irrigated agricultural lands with lesser soil quality.

The Bay Area has a significant amount of land in agricultural uses. In 2010, just over half of the region's approximately 4.5 million acres were classified as agricultural lands, as defined by the California Department of Conservation Farmland Mapping and Monitoring Program. Of these 2.3 million acres of agricultural land, over 70 percent (about 1.7 million acres) are used for grazing. Products grown in the Bay Area include field crops, fruit and nut crops, seed crops, vegetable crops, and nursery products. Field crops, which include corn, wheat, and oats, as well as pasture lands, represent approximately 63 percent of the Bay Area agricultural land (ABAG, 2013). In 2006, about 1.2 million acres of land were under Williamson Act contract in the Bay Area. Of this, about 203,000 acres were prime farmland and one million acres were nonprime. Lands under Williamson Act contract are primarily used for pasture and grazing and not for cultivation of crops. Nearly 70 percent of prime and nonprime lands under contract are in Santa Clara, Solano, and Sonoma counties (ABAG, 2013).

Regulatory Background

Agricultural and forest resources are generally protected by the City and/or County General Plans, Community Plans through land use and zoning requirements, as well as any applicable specific plans, ordinances, local coastal plans, and redevelopment plans.

Significance Criteria

Project-related impacts on agriculture and forest resources will be considered significant if any of the following conditions are met:

- The proposed project conflicts with existing zoning or agricultural use or Williamson Act contracts.
- The proposed project will convert prime farmland, unique farmland or farmland of statewide importance as shown on the maps prepared pursuant to the farmland mapping and monitoring program of the California Resources Agency, to non-agricultural use.
- The proposed project conflicts with existing zoning for, or causes rezoning of, forest land (as defined in Public Resources Code §12220(g)), timberland (as defined in Public Resources Code §4526), or timberland zoned Timberland Production (as defined by Government Code § 51104 (g)).
- The proposed project would involve changes in the existing environment, which due to their location or nature, could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use.

Discussion of Impacts

II a-e. The proposed rule amendments are designed to make changes to the New Source Review pre-construction permit program and the Title V Major Facility Review operating permit program in the Bay Area. The modifications to the NSR program would make the District's regulations consistent with the federal requirements, but they are not expected to require the construction of any new or modified equipment at stationary sources within the Bay Area. The amendments to the Title V program would remove GHGs as a regulated pollutant. The proposed Title V

amendments are not expected to require the construction of any new equipment or modify equipment at stationary sources.

The proposed project would not conflict with existing agriculture related zoning designations or Williamson Act contracts. Existing agriculture and forest resources within the boundaries of the Air District are not expected to be affected, because the rule amendments would not require any new development. Therefore, there is no potential for conversion of farmland to non-agricultural use or conflicts related to agricultural uses or land under a Williamson Act contract, or impacts to forestland resources.

Conclusion

Based upon these considerations, no significant adverse impacts to agricultural and forest resources are expected from the adoption of the proposed Regulation 2 amendments including revisions to the NSR Program and the Title V Major Facility Review program.

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
III.	**AIR QUALITY.** Would the project:				
a)	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☑
b)	Violate any air quality standard or contribute to an existing or projected air quality violation?	☐	☐	☐	☑
c)	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	☑
d)	Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☑
e)	Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☑

Setting

The San Francisco Bay Area is characterized by a large, shallow basin surrounded by mountain ranges tapering into sheltered inland valleys. The basin is bounded by the Pacific Ocean to the west and includes complex terrain consisting of mountains, valleys and bays. Combined climatic and topographic factors result in an increased potential for the accumulation of air pollutants in the inland valleys and a reduced potential for buildup of air pollutants along the coast.

For purposes of analyzing air quality impacts under CEQA, the Air District divides air quality concerns into two categories: regional concerns and localized concerns. Regional concerns involve emissions from many sources throughout the region combine together to create unhealthy air quality regionally. These air quality concerns are addressed by ensuring that individual emissions sources do not add significantly to the Bay Area's regional air quality challenges. Localized concerns, by contrast, involve emissions that may affect people who live or work near the emissions source and may be exposed to elevated pollutant concentrations because of the source. These localized air quality concerns are addressed by evaluating the potential health effects on people located nearby (called "sensitive receptors") and ensuring that they will not be exposed to any significant health risks. (Note that in some cases, a particular pollutant may fall into both categories. This is the case with fine particulate matter, for example. In these cases, impacts associated with that pollutant are evaluated in both a regional and a localized context.)

Regional Air Quality

Regional air quality concerns are addressed by ambient air quality standards adopted by California Air Resourced Board (CARB) and the United States Environmental Protection Agency (EPA). These standards set forth the maximum allowable concentrations of "criteria" pollutants in the ambient air throughout the region that are considered safe to breathe. These pollutants are called "criteria" pollutants because the standards are established by developing human-health based or environmentally-based "criteria" – i.e., science-based guidelines – for setting permissible ambient air pollutant concentrations.

EPA has established National Ambient Air Quality Standards (NAAQS) for the following criteria pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), particulate matter less than 10 microns in diameter (PM_{10}), particulate matter less than 2.5 microns in diameter ($PM_{2.5}$), sulfur dioxide (SO_2), and lead. California has also established standards for these pollutants, as well as for sulfate, visibility reducing particles, hydrogen sulfide, and vinyl chloride. The state and national ambient air quality standards for each of these pollutants, and their effects on health, are summarized in Table 3-1.[1]

Air quality conditions in the San Francisco Bay Area have improved greatly since the Air District was created in 1955, and regional concentrations of criteria pollutants are now in compliance with or near compliance with most ambient air quality standards. The only criteria pollutants for which the Bay Area still exceeds any state or federal standards are ozone and particulate matter.

Ozone

For ozone, there are two types of standards, one measuring average ozone concentrations over eight-hour periods and the other measuring average ozone concentrations over one-hour periods.

For eight-hour average ozone concentrations, the Bay Area is marginally out of compliance with the most stringent state and federal standards, which are both 0.070 parts per million (ppm). The region has made substantial progress towards attaining these standards, and has recently attained the 2008 federal standard, which is 0.075 ppm. (*Determinations of Attainment by the Attainment Date etc.*, 81 Fed. Reg. 26697, 26698 (May 4, 2016).) The region has also greatly reduced the number of days each year when ozone levels exceed the current 0.070 ppm standards, as shown in Figure 3-1. The region has not quite met the 0.070 ppm standards, however, and is designated as "non-attainment" for both the state and federal ozone standards.

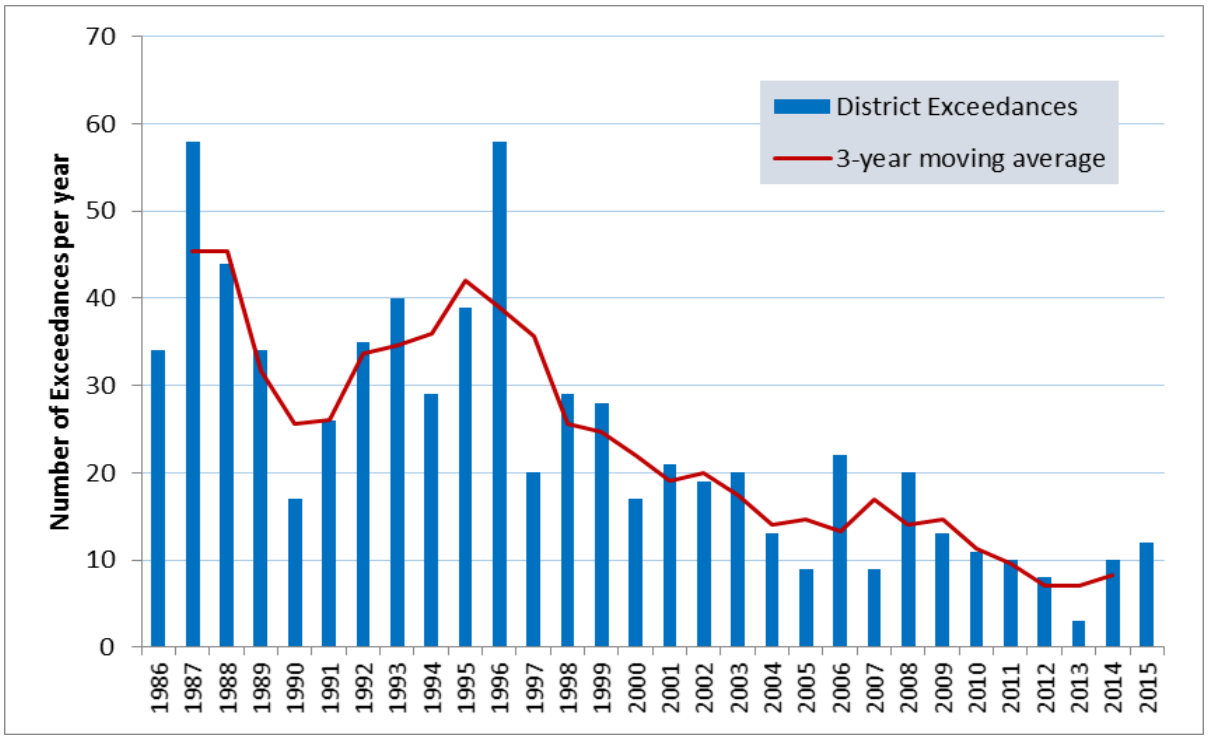
[1] EPA establishes two types of NAAQS, primary NAAQS and secondary NAAQS. The primary NAAQS are designed to protect human health, whereas the secondary NAAQS are designed to protect other values such as property and economic value, soils, water quality, crops, wildlife, etc. In many cases the secondary NAAQS is the same as the primary NAAQS, although for $PM_{2.5}$ the secondary annual-average NAAQS is 15 $\mu g/m^3$, which is less stringent than the primary annual-average NAAQS of 12 $\mu g/m^3$; and for SO_2 the secondary NAAQS is 0.5 ppm (3-hour average), which is less stringent than the primary NAAQS of 75 ppb (1-hour average). The Air District focuses on the primary NAAQS in evaluating potential air quality impacts as they are generally more stringent and are focused on human health protection. Accordingly, discussions of the NAAQS in this document address the primary NAAQS for each relevant pollutant.

TABLE 3-1
State and Federal Ambient Air Quality Standards

POLLUTANT	STATE STANDARD	FEDERAL STANDARD	MOST RELEVANT EFFECTS
Ozone	0.09 ppm, 1-hr. avg. 0.070 ppm, 8-hr	No Federal 1-hr standard 0.070 ppm, 8-hr avg.	(a) Short-term exposures: (1) Pulmonary function decrements and localized lung edema in humans and animals (2) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (b) Long-term exposures: Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (c) Vegetation damage; (d) Property damage
Carbon Monoxide	9.0 ppm, 8-hr avg. 20 ppm, 1-hr avg.	9 ppm, 8-hr avg. 35 ppm, 1-hr avg.	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; (d) Possible increased risk to fetuses
Nitrogen Dioxide	0.03 ppm, annual avg. 0.18 ppm, 1-hr avg. >	0.053 ppm, ann. avg. 0.100 ppm, 1-hr avg.	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; (c) Contribution to atmospheric discoloration
Sulfur Dioxide	0.04 ppm, 24-hr avg.> 0.25 ppm, 1-hr. avg. >	No Federal 24-hr Standard 0.075 ppm, 1-hr avg.	Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma
Suspended Particulate Matter (PM_{10})	20 $\mu g/m^3$, annual arithmetic mean 50 $\mu g/m^3$, 24-hr average	No Federal annual Standard 150 $\mu g/m^3$, 24-hr avg.	(a) Excess deaths from short-term exposures and exacerbation of symptoms in sensitive patients with respiratory disease; (b) Excess seasonal declines in pulmonary function, especially in children
Suspended Particulate Matter ($PM_{2.5}$)	12 $\mu g/m^3$, annual arithmetic mean No State 24-hr Standard	12 $\mu g/m^3$, annual arithmetic mean 35 $\mu g/m^3$, 24-hour average	Decreased lung function from exposures and exacerbation of symptoms in sensitive patients with respiratory disease; elderly; children.
Sulfates	25 $\mu g/m^3$, 24-hr avg.	No Federal Standard	(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; (f) Property damage
Lead	1.5 $\mu g/m^3$, 30-day avg. No State Calendar Quarter Standard No State 3-Month Rolling Avg. Standard	No Federal 30-day avg. Standard 1.5 $\mu g/m^3$, calendar quarter 0.15 $\mu g/m^3$ 3-Month Rolling average	(a) Increased body burden; (b) Impairment of blood formation and nerve conduction
Visibility-Reducing Particles	In sufficient amount to give an extinction coefficient >0.23 inverse kilometers (visual range to less than 10 miles) with relative humidity less than 70%, 8-hour average (10am – 6pm)	No Federal Standard	Visibility based standard, not a health based standard. Nephelometry and AISI Tape Sampler; instrumental measurement on days when relative humidity is less than 70 percent
Hydrogen Sulfide	0.03 ppm, 1-hr avg.	No Federal Standard	Extremely strong and foul odor that can induce tearing of the eyes and symptoms related to overstimulation of the sense of smell, including headache, nausea, or vomiting. Hydrogen sulfide is regulated as a nuisance based on its odor detection level.
Vinyl Chloride	0.01 ppm, 24-hr avg.	No Federal Standard	Central nervous system effects such as dizziness, drowsiness, and headaches.

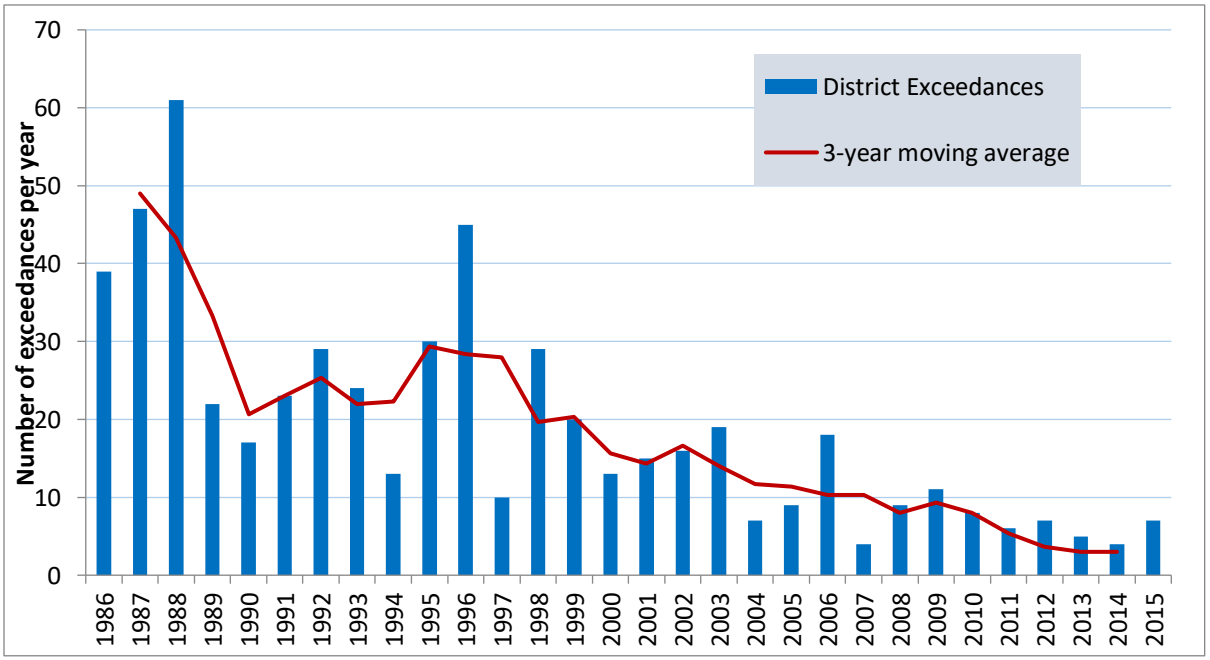
For one-hour average ozone concentrations, the situation is similar. Ozone levels have been coming down and the number of days per year with air quality exceeding the one-hour standard has been greatly reduced, as shown in Figure 3-2. But the is region is still designated as “non-attainment” for the California one-hour-average ozone standard. (The federal one-hour-average standard has been revoked and replaced by the eight-hour-average standard.)

FIGURE 3-1
Annual Bay Area Days Exceeding 0.070 ppm State 8-hour Ozone Standard, 1986-2015



Source: BAAQMD, 2017

FIGURE 3-2
Annual Bay Area Days Exceeding 0.09 ppm State 1-hour Ozone Standard, 1986-2015



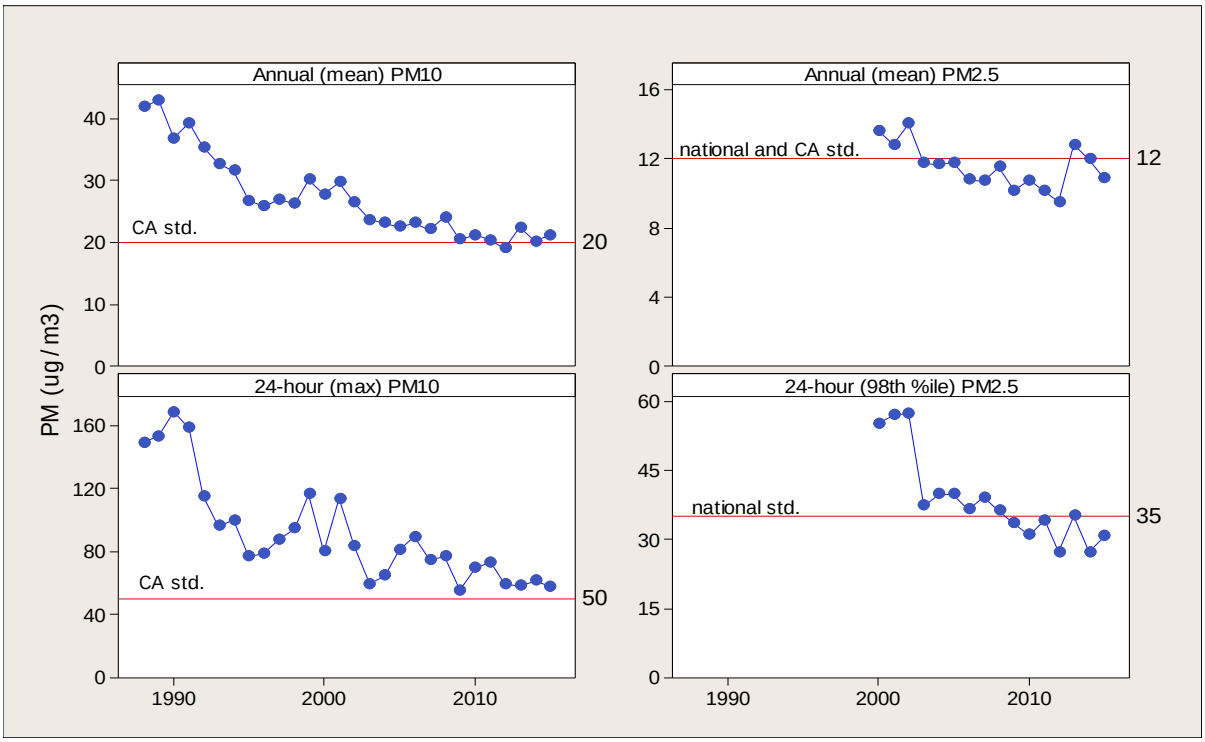
Source: BAAQMD, 2017

Particulate Matter

For particulate matter, ambient air quality standards have been established for both PM_{10} and $PM_{2.5}$. California has standards for average PM_{10} concentrations over 24-hour periods and over the course of an entire year, which are 50 and 20 $\mu g/m^3$, respectively. (The notation "$\mu g/m^3$" means micrograms of pollutant per cubic meter of ambient air.) For $PM_{2.5}$, California only has a standard for average $PM_{2.5}$ concentrations over a year, set at 12 $\mu g/m^3$, with no 24-hour-average standard. Conversely, EPA has established federal $PM_{2.5}$ standards for both annual-average and 24-hour-average concentrations, but only has a 24-hour-average standard for PM_{10}. The federal standards are 12 $\mu g/m^3$ for annual-average $PM_{2.5}$, 35 $\mu g/m^3$ for 24-hour-average $PM_{2.5}$, and 150 $\mu g/m^3$ for annual-average PM_{10}.

The Bay Area is in compliance with all of the federal particulate matter standards,[2] but it is out of compliance with the state standards. As with ozone, however, the region has made significant progress in reducing particulate matter concentrations and in approaching compliance with all applicable standards. Figure 3-3 shows regional particulate matter concentrations for both PM_{10} and $PM_{2.5}$, relative to the applicable California and national standards.

FIGURE 3-3: Bay Area PM Trends Relative to National and California Standards



Source: BAAQMD, 2017

[2] The Bay Area is still administratively designated as "non-attainment" for the federal 24-hour $PM_{2.5}$ standard. However, EPA has determined that actual $PM_{2.5}$ concentrations throughout the region have met the standard as a matter of fact. Thus, the air in the Bay Area is in compliance with the standard, even though the region is still designated as a "non-attainment" area. (*Determination of Attainment for the San Francisco Bay Area Nonattainment Area for the 2006 Fine Particle Standard*, Final Rule, 78 Fed. Reg. 1760 (Jan. 9, 2013.)

To show how criteria pollutant concentrations vary across the region, Table 3-2 provides a summary of the highest recorded concentrations of the principal criteria pollutants at each of the 25 air quality monitoring sites throughout the Bay Area. For each site, the table shows the highest concentration observed during 2015, the most recent year for which full data are available, along with the number of days during the year on which the concentration exceeded the relevant air quality standard at that location.

TABLE 3-2

Summary of Maximum Observed Air Pollution Concentrations and Days with Exceedances, 2015

Monitoring Stations	Ozone (ppb)						CO (ppm)			NO_2 (ppb)			SO_2 (ppb)			PM_{10} (µg/m^3)				$PM_{2.5}$ (µg/m^3)				
	Max 1-Hr	Cal 1-Hr Days	Max 8-Hr	Nat. 8-Hr Days	Cal Days	3-Yr Avg	Max 1-Hr	Max 8-Hr	Nat/Cal Days	Max 1-Hr	Ann Avg	Nat/Cal Days	Max 24-Hr	Ann Avg	Nat/Cal Days	Ann Avg	Max 24-Hr	Nat Days	Cal Days	Max 24-Hr	Nat Days	3-Yr Avg	Ann Avg	3-Yr Avg
North Counties																								
Napa	79	0	69	0	0	61	3.3	1.6	0	43	8	0	0	-	-	-	-	18.6	50	0	0	38.2	1	27
San Rafael	81	0	70	0	0	61	1.4	0.9	0	44	11	0	0	-	-	-	-	16.1	42	0	0	36.3	2	26
Sebastopol*	68	0	62	0	0	*	1.3	0.9	0	37	5	0	0	-	-	-	-	-	-	-	-	29.9	0	*
Vallejo	85	0	70	0	1	61	2.4	1.9	0	44	8	0	0	5	1.7	0	0	-	-	-	-	41.4	3	29
Coast & Central Bay																								
Laney College Freeway*	-	-	-	-	-	-	2.7	1.6	0	106	18	1	0	-	-	-	-	-	-	-	-	37.2	1	*
Oakland	94	0	74	2	2	52	2.4	1.4	0	48	11	0	0	-	-	-	-	-	-	-	-	44.7	1	25
Oakland-West	91	0	64	0	0	49	4.7	2.6	0	57	14	0	0	21.6	3.9	0	0	-	-	-	-	38.7	3	29
Richmond	-	-	-	-	-	-	-	-	-	-	-	-	-	12	2.8	0	0	-	-	-	-	-	-	-
San Francisco	85	0	67	0	0	48	1.8	1.3	0	71	12	0	0	-	-	-	-	19.2	47	0	0	35.4	0	25
San Pablo	84	0	62	0	0	55	2	1.1	0	46	9	0	0	10.7	2.4	0	0	18.6	43	0	0	33.2	0	27
Eastern District																								
Bethel Island	80	0	72	1	2	66	1.1	0.9	0	29	5	0	0	8.8	1.9	0	0	13.6	33	0	0	-	-	-
Concord	88	0	73	2	4	64	1.4	1.3	0	33	7	0	0	6.7	2	0	0	13.1	24	0	0	31	0	23
Crockett	-	-	-	-	-	-	-	-	-	-	-	-	-	20.5	3.7	0	0	-	-	-	-	-	-	-
Fairfield	84	0	72	1	1	63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Livermore	105	1	81	7	7	73	-	-	-	50	10	0	0	-	-	-	-	-	-	-	-	31.1	0	28
Martinez	-	-	-	-	-	-	-	-	-	-	-	-	-	14.7	4.8	0	0	-	-	-	-	-	-	-
Patterson Pass*	99	4	82	5	6	*	-	-	-	19	3	0	0	-	-	-	-	-	-	-	-	-	-	-
San Ramon	106	1	84	6	6	70	-	-	-	37	6	0	0	-	-	-	-	-	-	-	-	-	-	-
South Central Bay																								
Hayward	103	2	84	2	2	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Redwood City	86	0	71	1	1	59	3.4	1.6	0	48	11	0	0	-	-	-	-	-	-	-	-	34.6	0	24
Santa Clara Valley																								
Gilroy	95	1	78	3	3	67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42.2	2	18
Los Gatos	100	1	84	4	5	67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
San Jose	94	0	81	2	2	63	2.4	1.8	0	49	13	0	0	3.1	1.1	0	0	22	58	0	1	49.4	2	30
San Jose Freeway*	-	-	-	-	-	-	2.7	2	0	61	18	0	0	-	-	-	-	-	-	-	-	46.9	1	*
San Martin	98	1	83	4	4	70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Air monitoring at Sebastopol began in January 2014. Therefore, 3-year average statistics for ozone and $PM_{2.5}$ are not available. The Sebastopol site replaced the Santa Rosa site which closed on December 13, 2013.

Ozone monitoring using the federally accepted method began at Patterson Pass on April 1, 2015. Therefore, 3-year average ozone statistics are not available.

Near-road air monitoring at Laney College Freeway began in February 2014. Therefore, 3-year average $PM_{2.5}$ statistics are not available.

Near-road air monitoring at San Jose Freeway began in September 2014. Therefore, 3-year average $PM_{2.5}$ statistics are not available.

ppb = parts per billion; ppm = parts per million; µg/m^3 = micrograms per cubic meter

Localized Air Quality Concerns

Localized air quality concerns are addressed by evaluating the potential for adverse health impacts to sensitive receptors that may be located near an emissions source. Local air quality concerns are driven by so-called toxic air contaminants (TACs), along with $PM_{2.5}$.

Toxic Air Contaminants

TACs are chemicals that can be hazardous even at relatively low levels, and so they can present a concern for any sensitive receptors that may be located near to where they are emitted. A full list of the TACs of concern in the Bay Area can be found in Table 2-5-1 in Air District Regulation 2, Rule 5. (Federal regulations use the term hazardous air pollutants, or "HAPs", which covers essentially the same universe of air pollutants.)

The Air District measures concentrations of the most important TACs at each of its 25 monitoring sites throughout the Bay Area. Table 3-3 lists the maximum concentrations observed at any of the monitors in 2014, the most recent year for which data are available, as well as the mean (arithmetic average) for the entire year. Table 3-4 summarizes the mean TAC concentrations observed at each individual monitoring location for 2014.

TABLE 3-3
Summary of 2014 Air Toxics Monitoring Data

Compound	Maximum Observed Concentration (ppb)	Mean Concentration (ppb)
1,3-Butadiene	0.375	0.0439
Acetaldehyde	5.83	1.11
Acrolein	2	0.205
Benzene	28.1	0.594
Carbon Tetrachloride	0.149	0.0962
Chloroform	0.109	0.0273
Dichloromethane	1.62	0.226
Ethylbenzene	11	0.262
Ethylene Dibromide	0	0
Ethylene Dichloride	0.014	0.0000768
Formaldehyde	6.18	2.07
Methyl Chloroform	2.61	0.019
Naphthalene	272	59.7
N-Hexane	17.3	0.668
Styrene	7.03	0.131
Tetrachloroethylene	0.312	0.0143
Toluene	82.4	1.78
Trichloroethylene	0.222	0.00457
Vinyl Chloride	0.021	0.0000366
m/p-Xylene	29.9	0.982
O-Xylene	10	0.368

Source: BAAQMD, 2016

TABLE 3-4
Mean Concentrations of Toxic Air Contaminants in the Bay Area in 2014 (ppb)

Monitoring Station	BENZ	CCl_4	$CHCl_3$	DCM	EBZ	EDB	EDC	PERC	TCE	TOL	VC
Bethel Island	0.117	0.0982	0.0207	0.194	0.0266	0	0.000483	0.00279	0.00128	0.205	0
Concord - Treat Blvd	0.145	0.0933	0.0334	0.195	0.0409	0	0	0.00847	0.000867	0.227	0
Crockett - Kendall Ave	0.0972	0.0954	0.0171	0.204	0.0218	0	0	0.0128	0.000367	0.136	0
Ft. Cronkhite Building 1111	0.0719	0.0929	0.0153	0.175	0.0211	0	0	0.00221	0	0.15	0
Laney College	0.21	0.0943	0.0235	0.208	0.0719	0	0	0.0085	0	0.545	0
Livermore - Rincon Ave.	0.814	0.0976	0.031	0.246	0.459	0	0	0.0204	0	2.84	0
Martinez - Jones St	0.135	0.0952	0.018	0.212	0.042	0	0	0.00272	0	0.252	0
Napa - Jefferson St	0.222	0.0989	0.0401	0.269	0.0772	0	0	0.00876	0.00193	0.505	0
Oakland - International	0.251	0.103	0.0332	0.217	0.0969	0	0	0.0164	0.00847	0.612	0
Oakland West	0.215	0.102	0.0295	0.257	0.0914	0	0	0.0134	0.00473	0.536	0
Patterson Pass - PAMS	0.373	NA	NA	NA	0.106	NA	NA	NA	NA	0.713	NA
Redwood City	0.278	0.0983	0.047	0.284	0.194	0	0.000429	0.015	0.0498	0.858	0.00075
Richmond - 7th St	0.135	0.0982	0.0267	0.231	0.0573	0	0	0.0038	0.000333	0.309	0
San Francisco - Arkansas St.	0.189	0.0918	0.025	0.164	0.0907	0	0	0.00867	0.00536	0.378	0
San Jose - Jackson St.	0.253	0.0972	0.0306	0.281	0.121	0	0.000167	0.0493	0.00391	0.664	0
San Jose - Knox Av	0.362	0.0971	0.0305	0.23	0.146	0	0	0.00523	0	0.943	0
San Pablo - Rumrill	0.166	0.0941	0.0256	0.269	0.0674	0	0	0.0031	0	0.412	0
San Rafael	0.164	0.0953	0.023	0.188	0.0469	0	0	0.0123	0.00561	0.433	0
San Ramon	0.62	NA	NA	NA	0.225	NA	NA	NA	NA	1.84	NA
Sebastopol	0.146	0.0922	0.0213	0.23	0.0497	0	0.000138	0.00272	0.00341	0.296	0
Vallejo - Tuolumne St.	0.166	0.0951	0.0262	0.202	0.059	0	0.000143	0.00475	0.000321	0.387	0

(1) BENZ = benzene, CCl_4 = carbon tetrachloride, $CHCl_3$ = chloroform, DCM = methylene chloride, EBZ = ethyl benzene EDB = ethylene dibromide, EDC = ethylene dichloride, PERC = perchloroethylene, TCE = trichloroethylene, TOL = toluene, and VC = vinyl chloride. NA = Not available.
Source: BAAQMD, 2016.

$PM_{2.5}$

In addition to TACs, local air quality concerns are also driven by $PM_{2.5}$. $PM_{2.5}$ is not formally identified as a TAC, but it nevertheless has toxic health impacts – especially in the form of diesel PM emitted from heavy-duty trucks and other diesel-powered equipment. Thus, in addition to being a criteria pollutant subject to regional air quality standards, it is also an important local air pollution concern. If there are sensitive receptors located nearby to a large $PM_{2.5}$ emissions source – especially if it is diesel PM – then those receptors could be exposed to significant health risks locally, even if the emissions do not result in concentrations exceeding the regional ambient air quality standards. Current trends in $PM_{2.5}$ levels in the Bay Area are discussed above in connection with criteria pollutants. (See Figure 3-3 and Table 3-2.)

Assessing Health Risks

Health risk from exposure to these air pollutants is measured in two ways, one addressing carcinogenic health effects and one addressing non-carcinogenic health effects.

- *Non-Carcinogenic Health Effects*

For health problems other than cancer – i.e., non-carcinogenic health effects – exposure of a sensitive receptor to toxic air contaminants is measured against established "Reference Exposure Levels," which are levels that have been set by the California Office of Environmental Health Hazard Assessment (OEHHA). OEHHA sets these Reference Exposure Levels based on scientific and medical evidence showing that exposures below these levels do not result in adverse health impacts. The Reference Exposure Levels also have built-in margins of safety to ensure that exposures below those levels are indeed safe. Table 2-5-1 in Air District Regulation 2, Rule 5 lists the various Reference Exposure Levels that have been established for each TAC.

Health impacts from exposure to TACs are assessed by comparing the measured or modeled exposure of sensitive receptors near an emissions source to the applicable Reference Exposure Level to calculate a "Hazard Index", which is the ratio of the sensitive receptor's exposure to the Reference Exposure Level. Thus, if the sensitive receptor is exposed at half the Reference Exposure Level, the Hazard Index is 0.5; if the exposure is at exactly the Reference Exposure Level, the Hazard Index is 1; if the exposure is twice the Reference Exposure Level, the Hazard Index is 2; etc. Where the sensitive receptor may be exposed to multiple TACs, an individual Hazard Index calculation is undertaken for each individual TAC, and then the results are summed to give a total Hazard Index that is used to assess the total risk to the sensitive receptor for non-carcinogenic health impacts.

This Hazard Index approach is used for both short-term ("acute") and long-term ("chronic") toxic health impact concerns. It is important to consider both acute and chronic health impacts, because there could be situations where exposure levels are low enough that they do not cause any immediate health problems, but the exposure continues for a long period of time and creates health risks that way. Conversely, there could be situations where the receptor is exposed only for a short period of time, but at levels high enough to cause acute health problems. Health risk assessments therefore typically calculate a Hazard Index for both acute risk and chronic risk. If the Hazard Index is below 1 for both acute and chronic risk, that is an indication that the exposure does not

present any health concerns. If the Hazard Index is above 1 for either acute or chronic risk, that is an indication that the exposure is in the range where one could potentially start to observe adverse health outcomes.

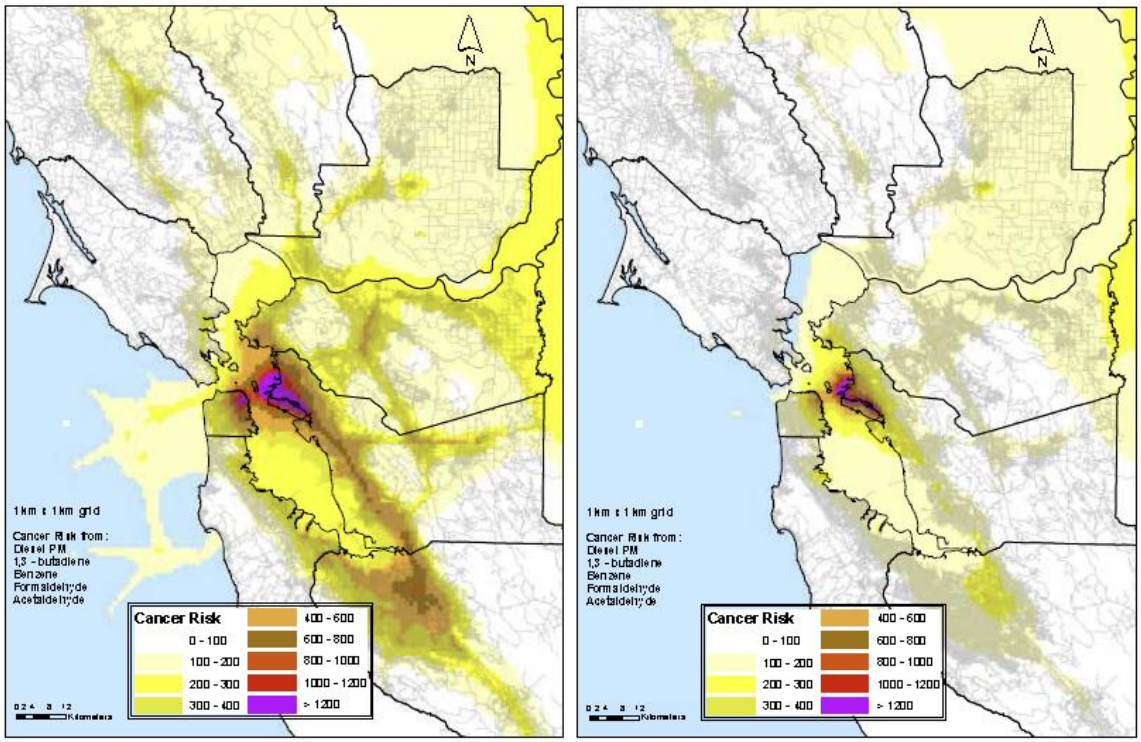
The chronic and acute Hazard Index is typically below 1 at most locations throughout the Bay Area, meaning that existing background TAC levels are not expected to cause any observable non-carcinogenic health effects. But there is always a concern with new sources of TAC emissions that they could expose sensitive receptors to TAC concentrations that would increase the Hazard Index above 1. The Air District addresses this concern by conducting health risk assessments of new TAC emissions, as well as applying other regulatory requirements as discussed in more detail below.

- *Carcinogenic Health Effects*

For air pollutants that cause cancer – i.e., carcinogenic health effects – there is no absolutely "safe" exposure level below which there will not be any cancer-causing effect. With carcinogenic effects, lowering the exposure level reduces the probability of developing cancer, but there is no level of exposure below which the risk falls completely to zero. Carcinogenic effects are therefore evaluated by assessing the additional risk that a sensitive receptor will develop cancer as a result of exposure to the air pollutant if they are exposed over their entire lifetime (assumed to be 70 years). The risk level is expressed as the number of additional cancers that would be expected out of a population of one million people exposed to an air pollutant at a given level for 70 years.

Existing carcinogenic risk from toxic air contaminants various throughout the Bay Area. Air District staff have used computer models to assess the respective carcinogenic risk at different locations, taking into account TAC emissions as well as particulate matter. Specifically, District staff modeled the carcinogenic risk from emissions of the four highest-risk TACs plus diesel PM. Figure 3-4 shows the results of this evaluation. Areas with lower risk are identified by lighter coloring, which corresponds to exposure levels that would be expected to cause around 100 or 200 additional cancers if one million people were exposed to that level for 70 years. Areas with higher risk identified by darker coloring, which corresponds to exposure levels that would be expected to cause 1,000 or more additional cancers if one million people were exposed to that level for 70 years. These areas are predominantly located in highly developed dense urbanized areas near high-volume roadways and other sources of diesel PM.

FIGURE 3-4: Potential Cancer Risk from Toxic Air Contaminants for the Bay Area in 2005 (left) and 2015 (right)



Source: BAAQMD, 2014

Regulatory Background

Criteria Pollutants

Criteria pollutants are regulated using a planning approach, in which the Air District develops regional plans to attain and maintain the various state and federal ambient air quality standards. These regional clean air plans identify the extent of the air quality challenges in the region and the amount of emission reductions that will be necessary to bring air pollution down to below the applicable air quality standards, and they outline various measures that the Air District and other authorities will implement in order to obtain those reductions. These measures can include adopting mandatory regulations that will force individual facilities to reduce emissions from specific types of equipment, as well as voluntary programs in which the District or other agencies offer incentives to businesses and individuals reduce their emissions, among other types of measures. Once the Air District has adopted a plan, it then goes forward to implement the plan and obtain the emission reductions and associated air quality improvements. The Air District adopted its most recent Clean Air Plan, entitled *Spare the Air, Cool the Climate*, in April of 2017.

The Air District is required to implement this planning effort to attain and maintain the applicable ambient air quality standards under both federal and California law. The federal Clean Air Act requires the District to adopt plans aimed at attaining and maintaining the federal National Ambient Air Quality Standards, which the District must submit (through CARB) for review and

approval by EPA. The California Clean Air Act imposes similar requirements, but they are aimed at attaining and maintaining the California standards.

Once the District has adopted these plans, it implements them by adopting regulations and taking other steps as outlined in the plans. The Air District uses its authority under Health & Safety Code sections 40001, 40702, and 40910 *et seq.*, as well as other statutory provisions, to adopt regulations requiring stationary sources to take certain measures to limit their emissions. These regulations can be found on the Air District's rulebook at www.baaqmd.gov/rules-and-compliance/current-rules. The Air District also uses its authority under the Health and Safety Code to provide grants and other incentives to encourage voluntary steps to reduce emissions, as well as providing leadership and advocacy to help encourage sound air quality policy choices throughout all sectors of the Bay Area's economy.

The New Source Review program that is the subject of the proposed amendments is an important aspect of this planning approach to attain and maintain the applicable air quality standards. New Source Review addresses the potential for increases from new and modified sources to hinder the District's efforts to reduce emissions from existing sources as outlined in its clean air plans. As required under the federal and California Clean Air Acts, the New Source Review program controls emissions growth from new and modified sources so that it does not stand in the way of attaining and maintaining the applicable air quality standards.

EPA has also adopted complementary standards called New Source Performance Standards that apply to new and modified sources in a number of source categories. These New Source Performance Standards are set forth in 40 C.F.R. Part 60. To date, EPA has adopted nearly 100 different New Source Performance Standards.

With respect to mobile sources, California imposes stringent motor vehicle emissions standards and fuel standards to address criteria pollutant emissions of concern. The Metropolitan Transportation Commission also implements measures designed to reduce emissions from the Bay Area's transportation infrastructure.

Toxic Air Contaminants

Toxic air contaminants emitted from stationary-source facilities are regulated using a two-fold approach, which (i) requires sources to limit their TAC emissions using pollution control equipment or other technological approaches, and (ii) requires a health risk assessment for nearby sensitive receptors to ensure that the TACs that are emitted do not create unacceptable health risks for nearby sensitive receptors.

With respect to regulations on TAC emissions, EPA has promulgated a suite of New Source Emissions Standards for Hazardous Air Pollutants (NESHAPs) for various different source categories. These standards require sources of hazardous air pollutants located at major facilities to meet emissions limitations reflecting the maximum degree of emission reduction that EPA has determined is achievable for their particular source category, taking into account cost, non-air-quality health and environmental impacts, and energy requirements. These standards are also known as Maximum Achievable Control Technology standards, or "MACT" standards. A full

listing of EPA's NESHAPs can be found at www.epa.gov/stationary-sources-air-pollution/national-emission-standards-hazardous-air-pollutants-neshap-9. Similarly, CARB has adopted a series of emissions standards called Airborne Toxic Control Measures (ATCMs) that limit TAC emissions. A full listing of CARB's ATCMs can be found at www.arb.ca.gov/toxics/atcm/atcm.htm. The Air District has also adopted additional standards of its own for certain TACs, which are set forth in District Regulation 11.

With respect to preventing unacceptable health risks for nearby sensitive receptors, these concerns are addressed primarily through California's Air Toxics "Hot Spots" Act, in Health and Safety Code section 39660 *et seq*. (also referred to as "AB 2588"). The Air Toxics Hot Spots Act requires stationary-source facilities to periodically inventory all of their TAC emissions and conduct a Health Risk Assessment to evaluate the health risks to neighboring sensitive receptors as a result of those emissions. Facilities are required to notify the public if the Health Risk Assessment shows any significant adverse health impacts, and they must also prepare and implement risk reduction plans in an effort to reduce risks from their TAC emissions to less-than-significant levels. The Air District implements the Air Toxics Hot Spots Act within the Bay Area as part of the District's Air Toxics Control Program. The Air District also has a stringent New Source Review program for toxics, in District Regulation 2, Rule 5, which requires facilities to demonstrate that any new or modified TAC sources will not create unacceptable health risks in order to obtain a permit.

Finally, in addition to these regulatory programs, the Air District also implements an important program called the Community Air Risk Evaluation (CARE) program to help identify and address areas within the region that have the greatest localized air pollution concerns along with populations that are the most vulnerable to air pollution's impacts. The CARE program has brought together government, communities and businesses in an effort to understand and address localized areas of elevated air pollution and its adverse health impacts on communities. The Air District uses information from the CARE program to develop and implement targeted risk reduction programs, including grant and incentive programs, community outreach efforts, collaboration with other governmental agencies, model ordinances, new regulations for stationary sources and indirect sources, and advocacy for additional legislation.

Significance Criteria

The Air District evaluates the air quality impacts of the proposed amendments using the following thresholds of significance.

Regional Air Pollution Concerns:

For regional air pollution concerns, air quality impacts are "significant" if regional pollutant levels exceed the applicable ambient air quality standards adopted by CARB and EPA. If the amount of air pollution in the ambient air exceeds these standards, the Air District considers that to be a "significant" impairment of air quality.

For regional air pollution, air quality exceeding the applicable ambient air quality standards is primarily a cumulative problem. It is highly unlikely that any individual project by itself will generate air pollution concentrations that exceed the standards. But emissions from a large number

of individual projects all throughout the Bay Area can combine together to cause pollution levels to exceed the standards, thereby creating a significant cumulative air quality impact.

That is the situation currently in the Bay Area with respect to two pollutants, ozone and particulate matter. Emissions from many sources throughout the region, while individually limited, are causing significant cumulative impacts on air quality – i.e., high levels of ozone and particulate matter exceeding the applicable standards. For all other regional pollutants, air quality is not significantly impacted because current air quality is well within the applicable standards, and is projected to continue to improve.

An individual project must be treated as significant under CEQA if its incremental contribution to a significant cumulative problem is "cumulatively considerable." (CEQA Guidelines 15064(h).) If the project will not result in any net emissions increase regionally, then it will have no impact on the region's ozone and particulate matter non-attainment. If the project will result in only a minimal increase that is not "cumulatively considerable," then it will be considered to be having a less-than-significant impact. Under Guidelines Section 15064(h)(3), a project will be less than "cumulatively considerable" – and thus not significant under CEQA – if it will be consistent with a previously-approved plan for attainment or maintenance of the applicable air quality standards.

Localized Air Pollution Concerns:

The District evaluates localized non-carcinogenic and carcinogenic air toxics impacts using the following thresholds.

Non-Carcinogenic Toxic Risk Impacts

For non-carcinogenic air toxics concerns, the threshold for a "significant" air quality impact is exposure of sensitive receptors to an acute or chronic toxic risk exceeding a Hazard Index of 1. As discussed above, a Hazard Index of less than 1 means that the exposure is below the level at which any observable health impacts would be expected to occur. If the Hazard Index exceeds 1, the exposure is at a level at which adverse health impacts could start to be seen.[3] If the amount of toxic air contaminants in the ambient air is exposing any sensitive receptors to a Hazard Index over 1, the Air District considers that to be a "significant" impairment of air quality.

Toxic air contaminants causing non-carcinogenic risk with a Hazard Index exceeding 1 can result from individual projects or from multiple projects in combination with each other. If a project's TAC emissions will generate a toxic risk with a Hazard Index over 1 all by themselves, the project will be considered to be causing an individually significant air quality impact. If the project's TAC emissions will not cause a Hazard Index over 1, but will combine with TACs emitted from existing sources and any current or probable future projects to cause a total Hazard Index over 1, the project

[3] Note that the Reference Exposure Levels (RELs) on which the Hazard Index value is based incorporate substantial safety margins – normally an order of magnitude – to allow for uncertainties in the scientific studies on which the RELs are based, variability in the sensitivity of people that might be exposed, etc. Exceeding a Hazard Index of 1 by a small amount therefore does not necessarily mean that health impacts will be seen. It does mean, however, that the exposure is starting to encroach upon the margin of safety provided, which raises concerns that the exposure is reaching the level at which health impacts could start to arise.

will be contributing to a significant cumulative air quality impact. The Air District considers any incremental contribution to a Hazard Index exceeding 1 to be "cumulatively considerable." If existing TAC emissions sources are causing a Hazard Index exceeding 1, any project that adds any additional incremental risk will be making a "cumulatively considerable" contribution to the significant cumulative impact, and will thus be considered significant under CEQA.

Carcinogenic Toxic Risk Impacts

For carcinogenic air toxics concerns, the threshold for a "significant" air quality impact is a lifetime cancer risk of 100 additional cancers per million people exposed. That is, concentrations of toxic air contaminants in the ambient air are considered "significant" if they exceed a level at which, if one million people were exposed to that air over a 70-year lifetime, 100 of them would be expected to develop cancer as a result. This is the level of carcinogenic risk found in the cleanest areas in the Bay Area. The Air District's goal is for all areas within the region to be able to enjoy air quality as clean as those cleanest areas. Thus, any level of carcinogenic risk higher than the 100-in-one-million risk found in the cleanest areas is considered a significant air quality impact.

This means that there currently is a significant cumulative carcinogenic air quality impact in nearly all of the developed parts of the Bay Area. This is because emissions of air toxics from existing sources are currently causing the level of carcinogenic risk to exceed the 100-in-one-million significance threshold. Where there are such significant cumulative impacts, projects are considered to be making a "cumulatively considerable" incremental contribution to the significant cumulative impact if they will add an additional cancer risk of 10 in one million. 10 in one million is a long-standing threshold that regulatory agencies have used to establish the incremental level of additional risk from a new project that is considered acceptable in the context of total carcinogenic risks from breathing the ambient air. It is also supported by EPA guidance for conducting air toxic risk analyses and making risk management decisions with respect to new projects.

Thus, if a new project's carcinogenic TAC emissions will cause any sensitive receptors to be exposed to carcinogenic risk exceeding 100 in one million all by themselves, the project will be considered individually significant under CEQA. If the project's carcinogenic TAC emissions are contributing to a cumulative risk exceeding 100 in one million when added to existing background risk plus any risk that will be added by current or probable future projects, then the project will be making a "cumulatively considerable" contribution to that significant cumulative impact – and will thus be considered significant under CEQA – if the project's incremental contribution exceeds 10 in one million.

Discussion of Impacts

III a. The proposed amendments are not expected to conflict with or obstruct implementation of the applicable air quality plan. The applicable air quality plan is the Air District's recently-adopted 2017 Clean Air Plan, *Spare the Air, Cool the Climate*. The Plan outlines a strategy for achieving the Bay Area's clean air goals by reducing emissions of ozone precursors, particulate matter, TACs and other pollutants in the region. The proposed amendments will not conflict with or obstruct

implementation of the 2017 Clean Air Plan, they will help achieve the Plan's goals by ensuring that the NSR and Title V programs can function effectively from a legal and practical standpoint. The proposed amendments will enhance the legal basis for the Air District's programs by ensuring that they are consistent with the federal Clean Air Act, which will allow EPA to fully approve them. The proposed amendments will enhance the practical functioning of the programs by clarifying how various provisions will be implemented. All of these technical and administrative amendments will therefore help promote the goals of the Clean Air Plan by allowing the NSR and Title V programs to achieve the air quality benefits associated with those programs.

III b and c. The proposed amendments are not expected to result in any net increases in emissions of any pollutants for which air quality standards have been adopted. The amendments are technical and administrative in nature and will not require affected facilities to make any substantial changes to their operations that will increase emissions. As such, the proposed amendments are not expected to cause any violations of any applicable air quality standards, or to result in any cumulatively considerable contribution to any existing or projected violation of any standard. With no increase in emissions, the proposed amendments will have no adverse impacts on compliance with applicable air quality standards.

III d. The proposed amendments are not expected to result in any increases in emissions of any TACs. The amendments are technical and administrative in nature and will not require affected facilities to make any substantial changes to their operations that will increase any TAC emissions. The proposed amendments are therefore not expected to cause any sensitive receptors to be exposed to non-carcinogenic health risks with an acute or chronic Hazard Index exceeding 1. To the extent that any regulated facilities may be located in an area where the existing acute or chronic Hazard Index exceeds 1 (or is projected to exceed 1 based on other current or future projects), the proposed amendments will not result in any increase TAC emissions that would increase this risk, so the proposed amendments would not be making a cumulatively considerable contribution to that significant health risk.

With respect to carcinogenic risk, although nearly all developed areas in the Bay Area where regulated facilities are located are impacted by a significant carcinogenic health risk based on emissions from existing sources, the proposed amendments will not make a cumulatively considerable contribution to that existing significant impact. The proposed amendments are not expected to result in any increased emissions, and so they are not expected to cause an increase in the cancer risk that any sensitive receptor is exposed to by more than 10 in one million, which is the level at which the Air District considers the contribution to be cumulatively considerable.

III e. The proposed technical and administrative revisions to the NSR and Title V rules will not require affected facilities to make any substantial changes to their operations and are not expected to result in any increase in odorous emissions from any facilities.

Conclusion

Based upon these considerations, no significant adverse air quality impacts are expected from the proposed revisions to the NSR Program and the Title V Major Facility Review program.

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
IV.	**BIOLOGICAL RESOURCES.** Would the project:				
a)	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☑
b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☑
c)	Have a substantial adverse effect on federally protected wetlands as defined by §404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☑
d)	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☑
e)	Conflicting with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☑
f)	Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☑

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles), so that land uses vary greatly and include commercial, industrial, residential, agricultural, and open space uses. A wide variety of biological resources are located within the Bay Area.

A complex interaction of soils, topography, and climate in the Bay Area supports numerous natural communities comprised of a diversity of vegetative types that provide habitat for a diverse number of plant and wildlife species. Broad habitat categories in the region include grasslands, coastal scrubs and chaparral, woodlands and forests, riparian systems and freshwater aquatic habitat, and wetlands. Extensive aquatic resources are provided by the San Francisco Bay Delta estuary, as well as numerous other rivers and streams. Urban and otherwise highly disturbed habitats, such as agricultural fields, also provide natural functions and values as wildlife habitat (ABAG, 2013).

Regulatory Background

Biological resources are generally protected by the City and/or County General Plans through land use and zoning requirements which minimize or prohibit development in biologically sensitive areas. Biological resources are also protected by the California Department of Fish and Wildlife, and the U.S. Fish and Wildlife Service. The U.S Fish and Wildlife Service and National Marine Fisheries Service oversee the federal Endangered Species Act. Development permits may be required from one or both of these agencies if development would impact rare or endangered species. The California Department of Fish and Wildlife administers the California Endangered Species Act which prohibits impacting endangered and threatened species. The U.S. Army Corps of Engineers and the U.S. EPA regulate the discharge of dredge or fill material into waters of the United States, including wetlands.

Significance Criteria

The proposed project impacts on biological resources will be considered significant if:

- The project results in a loss of plant communities or animal habitat considered to be rare, threatened or endangered by federal, state or local agencies.
- The project interferes substantially with the movement of any resident or migratory wildlife species.
- The project adversely affects aquatic communities through construction or operation of the project.

Discussion of Impacts

IV a, b, c and d). The proposed rule amendments are designed to make technical and administrative changes to the New Source Review pre-construction permit program and the Title V Major Facility Review operating permit program in the Bay Area. The modifications to the

NSR program would make the District's regulations consistent with the federal requirements, but they are not expected to require the construction of any new or modified equipment at stationary sources within the Bay Area. The amendments to the Title V program would remove GHGs as a regulated pollutant. The proposed Title V amendments are not expected to require the construction of any new equipment or modify equipment at stationary sources. Any new development potentially affecting biological resources would not be as a result of the proposed rule amendments and approval of those projects including evaluation of their potential biological impacts would occur regardless of the proposed amendments to Regulation 2.

Since construction activities are not expected, the rule amendments would not affect sensitive biological resources directly or indirectly, impact riparian habitats, protected wetlands, marshes, or vernal pools, coastal wetlands and would not conflict with local policies or ordinances protecting biological resources or an adopted habitat conservation plan.

IV e and f). The proposed amendments are not expected to affect land use plans, local policies or ordinances, or regulations protecting biological resources such as a tree preservation policy or ordinances for the reasons already given. Land use and other planning considerations are determined by local governments and land use or planning requirements are not expected to be altered by the proposed project. Similarly, the proposed rule amendments are not expected to affect any habitat conservation or natural community conservation plans, agricultural resources or operations, and would not create divisions in any existing communities.

Conclusion

Based upon these considerations, no significant adverse impacts to biological resources are expected from the adoption of the proposed Regulation 2 amendments including revisions to the NSR Program and the Title V Major Facility Review program.

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
V.	**CULTURAL RESOURCES.** Would the project:				
a)	Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☑
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☑
c)	Directly of indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☑
d)	Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☑

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles), so that land uses vary greatly and include commercial, industrial, residential, agricultural, and open space uses. Cultural resources are defined as buildings, sites, structures, or objects which might have historical architectural, archaeological, cultural, or scientific importance.

The Carquinez Strait represents the entry point for the Sacramento and San Joaquin Rivers into the San Francisco Bay. This locality lies within the San Francisco Bay and the west end of the Central Valley archaeological regions, both of which contain a rich array of prehistoric and historical cultural resources. The areas surrounding the Carquinez Strait and Suisun Bay have been occupied for millennia given their abundant combination of littoral and oak woodland resources.

The facilities affected by the proposed rule amendment are located in areas zoned as commercial, industrial, or institutional, which have primarily been graded to accommodate development.

Regulatory Background

The State CEQA Guidelines define a significant cultural resource as a "resource listed or eligible for listing on the California Register of Historical Resources" (Public Resources Code Section

5024.1). A project would have a significant impact if it would cause a substantial adverse change in the significance of a historical resource (State CEQA Guidelines Section 15064.5(b)). A substantial adverse change in the significance of a historical resource would result from an action that would demolish or adversely alter the physical characteristics of the historical resource that convey its historical significance and that qualify the resource for inclusion in the California Register of Historical Resources or a local register or survey that meets the requirements of Public Resources Code §§50020.1(k) and 5024.1(g).

Significance Criteria

The proposed project impacts to cultural resources will be considered significant if:

- The project results in the disturbance of a significant prehistoric or historic archaeological site or a property of historic or cultural significance to a community or ethnic or social group.
- Unique paleontological resources are present that could be disturbed by construction of the proposed project.
- The project would disturb human remains.

Discussion of Impacts

V a, b, c and d). CEQA Guidelines state that generally, a resource shall be considered 'historically significant' if the resource meets the criteria for listing in the California Register of Historical Resources including the following:

A. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

B. Is associated with the lives of persons important in our past;

C. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values;

D. Has yielded or may be likely to yield information important in prehistory or history (CEQA Guidelines §15064.5).

Generally, resources (buildings, structures, equipment) that are less than 50 years old are excluded from listing in the National Register of Historic Places unless they can be shown to be exceptionally important. Implementing the proposed rule amendments affect stationary sources at commercial or industrial facilities. Some affected stationary source facilities may have equipment or structures older than 50 years. However, such equipment does not typically meet the criteria identified in CEQA Guidelines §15064.5(a)(3). Further, the proposed rule amendments are not expected to result in any new development, physical modifications, earth moving or excavation. Since no construction activities are expected, the proposed rule amendments would not adversely affect historical or archaeological resources as defined in CEQA Guidelines §15064.5, destroy

unique paleontological resources or unique geologic features, or disturb human remains interred outside formal cemeteries. Therefore, no impacts to cultural resources are anticipated to occur as a result of the proposed project as no major construction activities are required.

Conclusion

Based upon these considerations, no significant adverse impacts to cultural resources are expected from the adoption of the proposed Regulation 2 amendments including revisions to the NSR Program and the Title V Major Facility Review program.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. GEOLOGY AND SOILS. Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a know fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☑
ii) Strong seismic ground shaking?	☐	☐	☐	☑
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☑
iv) Landslides?	☐	☐	☐	☑
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☑
c) Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☑
d) Be located on expansive soil, as defined in Table 18-1-B of the California Building Code (1994) (formerly referred to as the Uniform Building Code), creating substantial risks to life or property?	☐	☐	☐	☑
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?	☐	☐	☐	☑

Setting

The Bay Area is located in the natural region of California known as the Coast Ranges geomorphic province. The province is characterized by a series of northwest trending ridges and valleys controlled by tectonic folding and faulting, examples of which include the Suisun Bay, East Bay Hills, Briones Hills, Vaca Mountains, Napa Valley, and Diablo Ranges.

Regional basement rocks consist of the highly deformed Great Valley Sequence, which include massive beds of sandstone inter-fingered with siltstone and shale. Unconsolidated alluvial deposits, artificial fill, and estuarine deposits, (including Bay Mud) underlie the low-lying region along the margins of the Carquinez Straight and Suisun Bay. The estuarine sediments found along the shorelines of Solano County are soft, water-saturated mud, peat and loose sands. The organic, soft, clay-rich sediments along the San Francisco and San Pablo Bays are referred to locally as Bay Mud and can present a variety of engineering challenges due to inherent low strength, compressibility and saturated conditions. Landslides in the region occur in weak, easily weathered bedrock on relatively steep slopes.

The San Francisco Bay Area is a seismically active region, which is situated on a plate boundary marked by the San Andreas Fault System. Several northwest trending active and potentially active faults are included with this fault system. Under the Alquist-Priolo Earthquake Fault Zoning Act, Earthquake Fault Zones were established by the California Division of Mines and Geology along "active" faults, or faults along which surface rupture occurred in Holocene time (the last 11,000 years). In the Bay area, these faults include the San Andreas, Hayward, Rodgers Creek-Healdsburg, Concord-Green Valley, Greenville-Marsh Creek, Seal Cove/San Gregorio and West Napa faults. Other smaller faults in the region classified as potentially active include the Southampton and Franklin faults.

Ground movement intensity during an earthquake can vary depending on the overall magnitude, distance to the fault, focus of earthquake energy, and type of geological material. Areas that are underlain by bedrock tend to experience less ground shaking than those underlain by unconsolidated sediments such as artificial fill. Earthquake ground shaking may have secondary effects on certain foundation materials, including liquefaction, seismically induced settlement, and lateral spreading.

Regulatory Background

Construction is regulated by the local City or County building codes that provide requirements for construction, grading, excavations, use of fill, and foundation work including type of materials, design, procedures, etc. which are intended to limit the probability of occurrence and the severity of consequences from geological hazards. Necessary permits, plan checks, and inspections are generally required.

The City or County General Plan includes the Seismic Safety Element. The Element serves primarily to identify seismic hazards and their location in order that they may be taken into account in the planning of future development. The California Building Code is the principle mechanism for protection against and relief from the danger of earthquakes and related events.

In addition, the Seismic Hazard Zone Mapping Act (Public Resources Code §§2690 – 2699.6) was passed by the California legislature in 1990 following the Loma Prieta earthquake. The Act required that the California Division of Mines and Geology (DMG) develop maps that identify the areas of the state that require site specific investigation for earthquake-triggered landslides and/or potential liquefaction prior to permitting most urban developments. The act directs cities, counties, and state agencies to use the maps in their land use planning and permitting processes.

Local governments are responsible for implementing the requirements of the Seismic Hazards Mapping Act. The maps and guidelines are tools for local governments to use in establishing their land use management policies and in developing ordinances and reviewing procedures that will reduce losses from ground failure during future earthquakes.

Significance Criteria

The proposed project impacts on the geological environment will be considered significant if:

- Topographic alterations would result in significant changes, disruptions, displacement, excavation, compaction or over covering of large amounts of soil.
- Unique geological resources (paleontological resources or unique outcrops) are present that could be disturbed by the construction of the proposed project.
- Exposure of people or structures to major geologic hazards such as earthquake surface rupture, ground shaking, liquefaction or landslides.
- Secondary seismic effects could occur which could damage facility structures, e.g., liquefaction.
- Other geological hazards exist which could adversely affect the facility, e.g., landslides, mudslides.

Discussion of Impacts

VI a, c, and d). The proposed rule amendments are designed to make technical and administrative changes to the New Source Review pre-construction permit program and the Title V Major Facility Review operating permit program in the Bay Area. The modifications to the NSR program would make the District's regulations consistent with the federal requirements, but they are not expected to require the construction of any new or modified equipment at stationary sources within the Bay Area. The amendments to the Title V program would remove GHGs as a regulated pollutant.

Any new development potentially resulting in earthquake hazards would not be as a result of the proposed rule amendments and approval of those projects including evaluation of their potential biological impacts would occur regardless of the proposed amendments to Regulation 2. New construction (including modifications to existing structures) requires compliance with the California Building Code. The California Building Code is considered to be a standard safeguard against major structural failures and loss of life. The goal of the code is to provide structures that will: (1) resist minor earthquakes without damage; (2) resist moderate earthquakes without structural damage, but with some non-structural damage; and (3) resist major earthquakes without

collapse, but with some structural and non-structural damage. The California Building Code basis seismic design on minimum lateral seismic forces ("ground shaking"). The California Building Code requirements operate on the principle that providing appropriate foundations, among other aspects, helps to protect buildings from failure during earthquakes. The basic formulas used for the California Building Code seismic design require determination of the seismic zone and site coefficient, which represent the foundation conditions at the site. Compliance with the California Building Code would minimize the impacts associated with existing geological hazards.

VI b). The Regulation 2 amendments are not expected to result in the construction of any new or modified equipment. Proposed Regulation 2 amendments are not expected to result in substantial soil erosion or the loss of topsoil as no construction activities are expected as a result of the proposed amendments to Regulation 2.

VI e). Septic tanks or other similar alternative wastewater disposal systems are typically associated with small residential projects in remote areas. The proposed amendments to the NSR and Title V programs would affect stationary sources that have existing wastewater treatment systems or which are connected to appropriate wastewater facilities. Further, no increase in water use or wastewater generation is expected. Additionally, facilities affected by the modifications to the Title V program are industrial or commercial facilities that are connected or would be required to be connected to appropriate wastewater treatment facilities and are not expected to rely on septic tanks or similar alternative wastewater disposal systems. Based on these considerations, septic tanks or other alternative wastewater disposal systems are not expected to be impacted by the proposed project.

Conclusion

Based upon these considerations, no significant adverse impacts to geology and soils are expected from the adoption of the proposed Regulation 2 amendments including revisions to the NSR Program and the Title V Major Facility Review program.

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
VII.	**GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE.** Would the project:				
a)	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☐	☑
b)	Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☑

Setting

Global climate change refers to changes in average climatic conditions on the earth as a whole, including temperature, wind patterns, precipitation and storms. Global climate change is caused primarily by an increase in levels of greenhouse gases (GHGs) in the atmosphere. The major greenhouse gases are the so-called "Kyoto Six" gases – carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs) – as well as black carbon.[4] These greenhouse gases absorb longwave radiant energy (heat) reflected by the earth, which warms the atmosphere in a phenomenon known as the "greenhouse effect." The potential effects of global climate change include rising surface temperatures, loss in snow pack, sea level rise, ocean acidification, more extreme heat days per year, and more drought years.

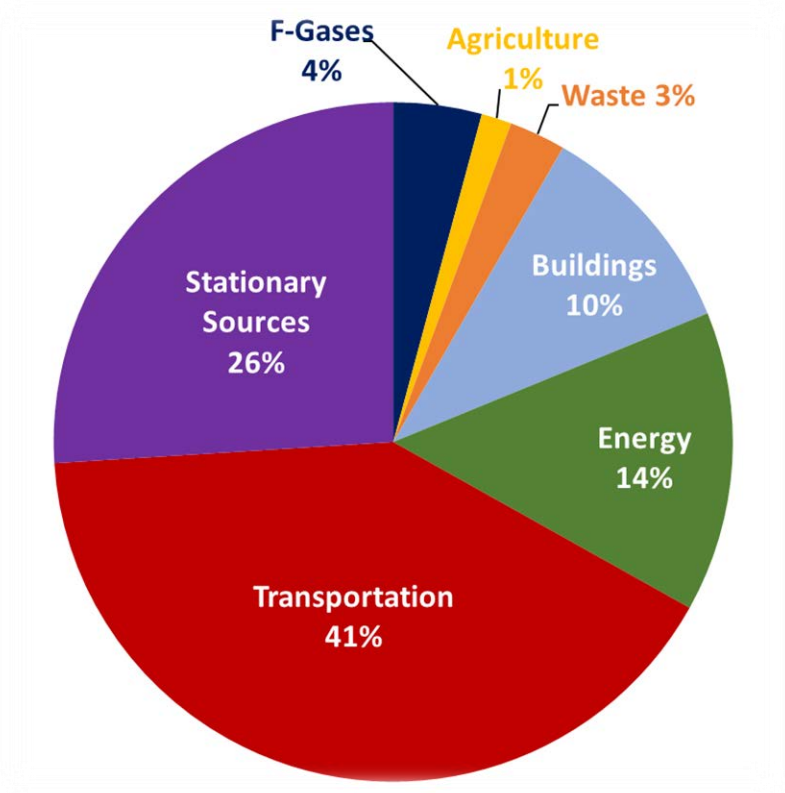
Increases in the combustion of fossil fuels (e.g., gasoline, diesel, coal, etc.) since the beginning of the industrial revolution have resulted in a significant increase in atmospheric levels of greenhouse gases. CO_2 levels have increased from long-term historical levels of around 280 ppm before the mid-18th century to over 400 ppm today. This increase in greenhouse gases has already caused noticeable changes in the climate. The average global temperature has risen by approximately 1.4°F (0.8°C) over the past one hundred years, and 16 of the 17 hottest years in recorded history have occurred since 2001, according to the National Oceanic and Atmospheric Administration.

Total global greenhouse gas emissions contributing to climate change are in the tens of billions of metric tons of CO_2e per year. The Bay Area's contribution to the global total is approximately 85 million tons per year. Figure 3-5 presents a breakdown of the region's greenhouse gas emissions by major source categories. As the table shows, transportation sources generate approximately 40 percent of the total, with the remaining 60 percent coming from stationary and area sources.

[4] Technically, black carbon is not a gas but is made up of solid particulates or aerosols. It is included in the discussion of greenhouse gas emissions because, like true greenhouse gases, it is an important contributor to global climate change.

FIGURE 3-5

2015 Bay Area GHG Emissions by Source Category (Total = 85 MMT CO_2e)

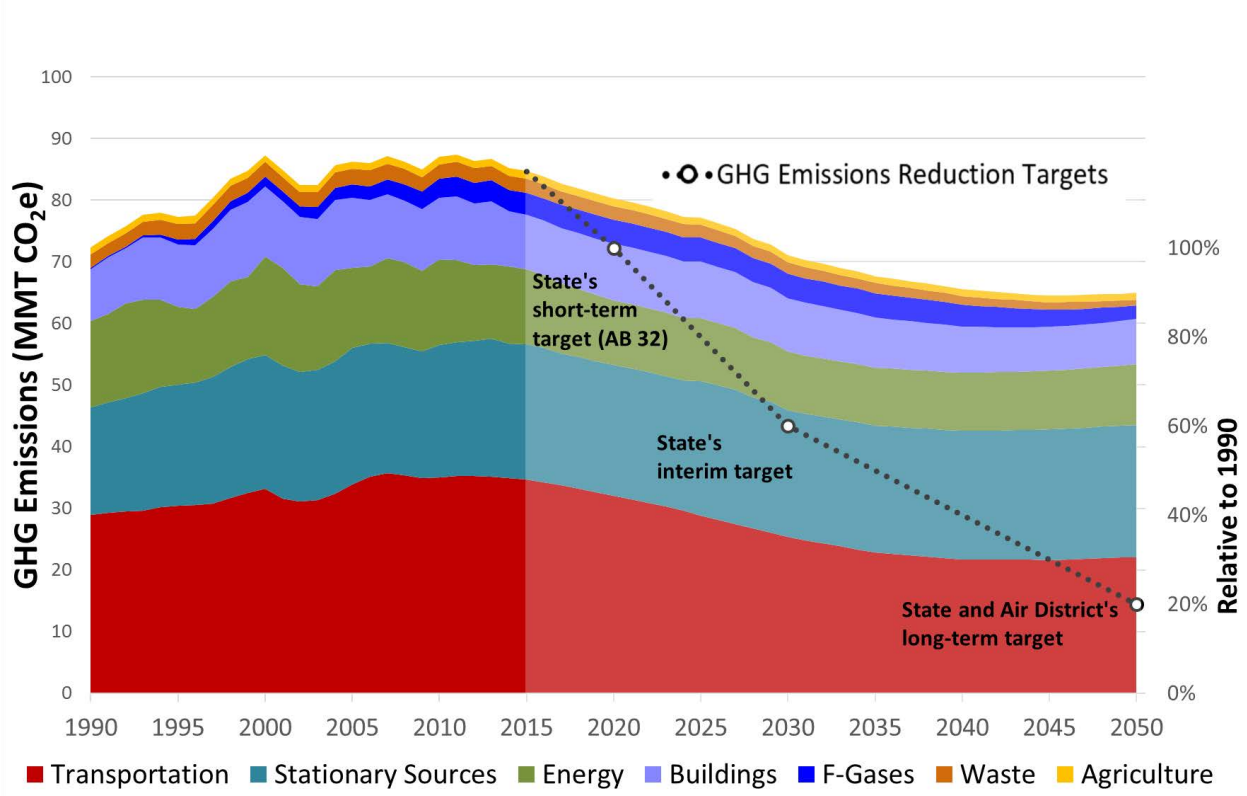


Source: BAAQMD, 2017

Historically, regional greenhouse gas emissions rose substantially as the Bay Area industrialized. But emissions have peaked recently, and they are expected to decline in the coming years. Figure 3-6 shows the Bay Area's total greenhouse gas emissions since 1990, with projections for future emissions through 2050. As the figure shows, emissions are expected to decline in the future as the region continues to shift away from burning fossil fuels and towards renewable energy resources such as wind and solar power. Emissions will need to decline even more than currently projected, however, in order to reach the aggressive targets adopted by California and by the Air District. These greenhouse gas reduction goals are represented by the dashed line on the graph in Figure 3-6.

FIGURE 3-6

Projected Bay Area GHG Emissions by Sector Based on State Policies



Source: BAAQMD, 2017

Regulatory Background

There is a general consensus that global temperature increases must be limited to well under 2°C in order to reduce the risks and impacts of climate change to an acceptable level. This consensus is embodied most notably in the Paris Climate Agreement, in which virtually every nation around the world committed to achieving this global goal. Limiting global climate change to no more than this amount is the lodestar that drives greenhouse gas regulation at every level.

For purposes of the Bay Area, the most important regulatory actions on climate change have been undertaken by the State of California. To fulfill its share of the burden of keeping climate change within acceptable limits, California has committed to reducing its greenhouse gas emissions to 1990 levels by 2020, to 40% below 1990 levels by 2030, and to 80% below 1990 levels by 2050. This commitment is enshrined in AB 32, the Global Warming Solutions Act of 2006, which adopted the 2020 target; in 2016's SB 32 (Pavley), which adopted the 2030 target; and in Executive Order S-3-05, which adopted the 2050 target. The Air District has adopted the same 80% reduction target for 2050 for the Bay Area's greenhouse gas emissions, in Board of Directors Resolution 2013-11.

To achieve these emission reduction goals, the California legislature has directed the California Air Resources Board (CARB) to develop a Scoping Plan setting forth regulatory measures that

CARB will implement, along with other measures, to reduce the state's greenhouse gas emissions. One of the principal regulatory measures is CARB's Cap and Trade program, which requires industrial greenhouse gas sources to obtain "allowances" equal to their greenhouse gas emissions. The amount of available allowances is subject to a "cap" on total emissions statewide, which CARB will reduce each year. Regulated facilities will either have to reduce their emissions or purchase allowances on the open market, which will give them a financial incentive to reduce emissions and will ensure that total annual emissions from the industrial sector will not exceed the declining statewide cap.

California has also adopted the so-called "Renewable Portfolio Standard" for electric power generation, which requires that at least 33% of the state's electric power must come from renewable sources by 2020, and at least 50% must come from renewables by 2030. To complement these efforts on electricity generation, the state has also committed to increasing the energy efficiency of existing buildings by 50% by 2050 in order to reduce energy demand.

California has also adopted regulatory measures aimed at reducing greenhouse gas emissions from mobile sources. These measures include the so-called "Pavley" standards for motor vehicle emissions and the state's Low Carbon Fuel Standard, which set limits on the carbon intensity of transportation fuels. California has also adopted SB 375, the Sustainable Communities and Climate Protection Act of 2008, which requires regional transportation and land use planning agencies to develop coordinated plans, called "Sustainable Communities Strategies," to reduce greenhouse gas emissions from the transportation sector by promoting denser development and alternatives to driving. The current Sustainable Communities Strategy for the Bay Area is *Plan Bay Area 2040*, was adopted by the Metropolitan Transportation Commission and the Association of Bay Area Governments in July of 2017.

The Air District supports these statewide goals through action at the regional level. The Air District has committed to reducing the Bay Area's regional greenhouse gas emissions to 80% below 1990 levels by 2050, as noted above. The Air District has also committed to a broad suite of specific measures to address greenhouse gases in the 2017 Clean Air Plan, *Spare the Air, Cool the Climate*. That document lays out the Air District's vision for what the Bay Area may look like in a post-carbon year 2050 and describes policies and actions that the region needs to take in the near- to mid-term to embark on that transformation.

At the federal level, the United States has joined the international community in signing on to the Paris Climate Agreement and its commitment to limit global temperature increases to well under 2°C. The United States has committed under the Paris Agreement to reducing its greenhouse gases by 26%-28% by 2025. EPA has adopted a number of regulatory measures to address greenhouse gas emissions in support of this goal, including emissions standards for cars and light duty trucks and the "Clean Power Plan" regulations setting caps on each state's emissions from the power generation sector. EPA has also extended the federal New Source Review requirements to greenhouse gases, requiring that major stationary sources use the "Best Available Control Technology" to limit their greenhouse gas emissions. The Air District implements this requirement under its NSR program that is the subject of the proposed amendments (*see* Regulation 2-2-304). The current administration has signaled that it will back off on these initiatives, however. If that

occurs, it will place even more emphasis on California, and on regions like the Bay Area, to take the lead in addressing climate change.

Significance Criteria

Global climate change caused by greenhouse gas emissions is the quintessential cumulative environmental impact. The greenhouse gas emissions from any individual project will not have any detectable impact on the global climate all by themselves, but they will contribute to what is indisputably a significant cumulative problem – a problem caused by millions of projects all around the world emitting greenhouse gases that together create a significant cumulative climate impact. Proposed projects are therefore significant for purposes of CEQA if they will be making a cumulatively considerable contribution to the significant cumulative climate impact resulting from greenhouse gas emissions globally. As the California Supreme Court has observed:

> With respect to climate change, an individual project's emissions will most likely not have any appreciable impact on the global problem by themselves, but they will contribute to the significant cumulative impact caused by greenhouse gas emissions from other sources around the globe. The question therefore becomes whether the project's incremental addition of greenhouse gases is "cumulatively considerable" in light of the global problem, and thus significant.

(*Cleveland National Forest Foundation v. San Diego Association of Governments* (July 13, 2017) ___ Cal. 5th __, Supreme Court Case No. S223603 (citations omitted).)

If the project will not result in any net greenhouse gas emissions increase, then it will have no impact on global climate change. If the project will result in only a minimal greenhouse gas emissions increase that is not "cumulatively considerable," then it will be considered to be having a less-than-significant impact. Under Guidelines Sections 15064(h)(3) and 15064.4(b)(3), a project will be less than "cumulatively considerable" – and thus not significant under CEQA – if it will be consistent with plans or regulations adopted to reduce or mitigate greenhouse gas emissions impacts.

Discussion of Impacts

VII a. The proposed amendments are not expected to result in any net increase in greenhouse gas emissions. The amendments are technical and administrative in nature and will not require affected facilities to make any substantial changes to their operations that will increase greenhouse gas emissions. The proposed amendments are therefore not expected to make a cumulatively considerable contribution to the significant cumulative impact caused by greenhouse gas emissions. Thus, there will be no significant greenhouse gas impacts.

VII b. The proposed amendments will not conflict with any plans, policies, or regulations addressing climate change. As discussed above, applicable plans, policies and regulations are aimed at limiting global climate change to well under 2°C, and at reducing regional and state-wide emissions to 80% below 1990 levels by 2050 in order to achieve that goal. The proposed amendments will not conflict with the Bay Area's progress towards achieving that emission reduction target. The amendments will not require affected facilities to make any substantial

changes and will not increase their greenhouse gas emissions, and they will not conflict with any regulatory efforts to achieve the state and regional greenhouse gas reduction goals under CARB's Scoping Plan, the District's 2017 Clean Air Plan, *Plan Bay Area 2040*, or any other local climate action plan.

Conclusion

Based upon these considerations, no significant adverse GHG impacts are expected from the proposed revisions to the NSR Program and the Title V Major Facility Review program.

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII.	**HAZARDS AND HAZARDOUS MATERIALS.** Would the project:				
a)	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☑
b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☑
c)	Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☑
d)	Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☑
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☑
f)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☑
g)	Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☑
h)	Significantly increased fire hazard in areas with flammable materials?	☐	☐	☐	☑

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara Counties, and potions of western Solano and southern Sonoma Counties. Because the area of coverage is vast (approximately 5,600 square miles), land uses vary greatly and include commercial, industrial, residential, and agricultural uses.

Facilities and operations within the District handle and process substantial quantities of flammable materials and acutely toxic substances. Accidents involving these substances can result in worker or public exposure to fire, heat, blast from an explosion, or airborne exposure to hazardous substances.

Fires can expose the public or workers to heat. The heat decreases rapidly with distance from the flame and therefore poses a greater risk to workers at specific facilities where flammable materials and toxic substances are handled than to the public. Explosions can generate a shock wave, but the risks from explosion also decrease with distance. Airborne releases of hazardous materials may affect workers or the public, and the risks depend upon the location of the release, the hazards associated with the material, the winds at the time of the release, and the proximity of receptors.

For all facilities and operations handling flammable materials and toxic substances, risks to the public are reduced if there is a buffer zone between process units and residences or if prevailing winds blow away from residences. Thus, the risks posed by operations at a given facility or operation are unique and determined by a variety of factors.

Hazards are related to the risks of fire, explosions, or releases of hazardous substances in the event of accident or upset conditions. Hazards are related to the production, use, storage, and transport of hazardous materials. Industrial production and processing facilities are potential sites for hazardous materials. Some facilities produce hazardous materials as their end product, while others use such materials as an input to their production processes. Examples of hazardous materials used by consumers include fuels, paints, paint thinner, nail polish, and solvents. Hazardous materials may be stored at facilities producing such materials and at facilities where hazardous materials are part of the production processes. Currently, hazardous materials are transported throughout the Bay Area in great quantities via all modes of transportation including rail, highway, water, air, and pipeline.

The potential hazards associated with handling such materials are a function of the materials being processed, processing systems, and procedures used to operate and maintain the facilities where they exist. The hazards that are likely to exist are identified by the physical and chemical properties of the materials being handled and their process conditions, including fires, vapor cloud explosions, thermal radiation, and explosion/overpressure.

Regulatory Background

There are many federal and state rules and regulations that facilities handling hazardous materials must comply with which serve to minimize the potential impacts associated with hazards at these facilities.

Under the Occupational Safety and Health Administration (OSHA) regulations [29 Code of Federal Regulations (CFR) Part 1910], facilities which use, store, manufacture, handle, process, or move highly hazardous materials must prepare a fire prevention plan. In addition, 29 CFR Part 1910.119, Process Safety Management (PSM) of Highly Hazardous Chemicals, and Title 8 of the California Code of Regulations, General Industry Safety Order §5189, specify required prevention program elements to protect workers at facilities that handle toxic, flammable, reactive, or explosive materials.

Section 112 (r) of the Clean Air Act Amendments of 1990 [42 U.S.C. 7401 et. Seq.] and Article 2, Chapter 6.95 of the California Health and Safety Code require facilities that handle listed regulated substances to develop Risk Management Programs (RMPs) to prevent accidental releases of these substances, U.S. EPA regulations are set forth in 40 CFR Part 68. In California, the California Accidental Release Prevention (CalARP) Program regulation (CCR Title 19, Division 2, Chapter 4.5) was issued by the Governor's Office of Emergency Services (OES). RMPs are documents prepared by the owner or operator of a stationary source containing detailed information including: (1) regulated substances held onsite at the stationary source; (2) offsite consequences of an accidental release of a regulated substance; (3) the accident history at the stationary source; (4) the emergency response program for the stationary source; (5) coordination with local emergency responders; (6) hazard review or process hazard analysis; (7) operating procedures at the stationary source; (8) training of the stationary source's personnel; (9) maintenance and mechanical integrity of the stationary source's physical plant; and (10) incident investigation. California is proposing modifications to the CalARP Program along with the state's PSM program in response to an accident at the Chevron Richmond Refinery. The proposed regulations were released for public comment on July 15, 2016 and the public comment period closes on September 15, 2016. After the close of the comment period a modified version of the proposed regulations was released in February 2017 and the public comment period for comments on the modifications closed on March 3, 2017.

Affected facilities that store materials are required to have a Spill Prevention Control and Countermeasures (SPCC) Plan per the requirements of 40 Code of Federal Regulations, Section 112. The SPCC is designed to prevent spills from on-site facilities and includes requirements for secondary containment, provides emergency response procedures, establishes training requirements, and so forth.

The Hazardous Materials Transportation (HMT) Act is the federal legislation that regulates transportation of hazardous materials. The primary regulatory authorities are the U.S. Department of Transportation, the Federal Highway Administration, and the Federal Railroad Administration. The HMT Act requires that carriers report accidental releases of hazardous materials to the Department of Transportation at the earliest practical moment (49 CFR Subchapter C). The

California Department of Transportation (Caltrans) sets standards for trucks in California. The regulations are enforced by the California Highway Patrol.

California Assembly Bill 2185 requires local agencies to regulate the storage and handling of hazardous materials and requires development of a business plan to mitigate the release of hazardous materials. Businesses that handle any of the specified hazardous materials must submit to government agencies (i.e., fire departments), an inventory of the hazardous materials, an emergency response plan, and an employee training program. The information in the business plan can then be used in the event of an emergency to determine the appropriate response action, the need for public notification, and the need for evacuation.

Contra Costa County has adopted an industrial safety ordinance that addresses the human factors that lead to accidents. The ordinance requires stationary sources to develop a written human factors program that considers human factors as part of process hazards analyses, incident investigations, training, operating procedures, among others.

Significance Criteria

The proposed project impacts associated with hazards will be considered significant if any of the following occur:

- Non-compliance with any applicable design code or regulation.
- Non-conformance to National Fire Protection Association standards.
- Non-conformance to regulations or generally accepted industry practices related to operating policy and procedures concerning the design, construction, security, leak detection, spill containment or fire protection.
- Exposure to hazardous chemicals in concentrations equal to or greater than the Emergency Response Planning Guideline (ERPG) 2 levels.

Discussion of Impacts

VIII a - b. The proposed rule amendments are designed to make technical and administrative changes to the New Source Review pre-construction permit program and the Title V Major Facility Review operating permit program in the Bay Area. The modifications to the NSR program would make the District's regulations consistent with the federal requirements, but they are not expected to require the construction of any new or modified equipment at stationary sources within the Bay Area. The amendments to the Title V program would remove GHGs as a regulated pollutant. The proposed Title V amendments are not expected to require the construction of any new equipment or modify equipment at stationary sources. Since no new equipment or modifications to existing equipment is expected, the proposed rule amendments are not expected to generate additional hazards at any stationary sources.

Health and Safety Code §25506 specifically requires all businesses handling hazardous materials to submit a business emergency response plan to assist local administering agencies in the

emergency release or threatened release of a hazardous material. Business emergency response plans generally require the following:

- Types of hazardous materials used and their locations;
- Training programs for employees including safe handling of hazardous materials and emergency response procedures and resources.
- Procedures for emergency response notification;
- Proper use of emergency equipment;
- Procedures to mitigate a release or threatened release of hazardous materials and measures to minimize potential harm or damage to individuals, property, or the environment; and
- Evacuation plans and procedures.

Hazardous materials at existing facilities would continue to be used in compliance with established OSHA or Cal/OSHA regulations and procedures, including providing adequate ventilation, using recommended personal protective equipment and clothing, posting appropriate signs and warnings, and providing adequate worker health and safety training. The exposure of employees is regulated by Cal-OSHA in Title 8 of the CCR. Specifically, 8 CCR 5155 establishes permissible exposure levels (PELs) and short-term exposure levels (STELs) for various chemicals. These requirements apply to all employees. The PELs and STELs establish levels below which no adverse health effects are expected. These requirements protect the health and safety of the workers, as well as the nearby population including sensitive receptors.

In general, all local jurisdictions and all facilities using a minimum amount of hazardous materials are required to formulate detailed contingency plans to eliminate, or at least minimize, the possibility and effect of fires, explosion, or spills. In conjunction with the California Office of Emergency Services, local jurisdictions have enacted ordinances that set standards for area and business emergency response plans. These requirements include immediate notification, mitigation of an actual or threatened release of a hazardous material, and evacuation of the emergency area.

The above regulations provide comprehensive measures to reduce hazards of explosive or otherwise hazardous materials. Compliance with these and other federal, state and local regulations and proper operation and maintenance of equipment should ensure the potential for explosions or accidental releases of hazardous materials is not significant. Therefore, the proposed rule amendments are not expected to create a significant hazard to the public or environment.

VIII c. Schools may be located within a quarter mile of commercial, industrial or institutional facilities affected by the proposed amendments to Regulation 2. It would be expected that these facilities are taking the appropriate and required actions to ensure proper handling of hazardous materials, substances or wastes near school sites. The proposed rule amendments would not result in the construction or operation of additional equipment or result in modifications to existing equipment, that would generate hazardous emissions, or result in the handling of hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or

proposed school. Therefore, no increase in hazardous emissions from implementation of the proposed amendments to Regulation 2 would be expected.

VIII d. Government Code §65962.5 requires creation of lists of facilities that may be subject to Resource Conservation and Recovery Act (RCRA) permits or site cleanup activities. Facilities affected by the proposed rule amendments are commercial, industrial, and institutional facilities, some of which may be located on the hazardous materials sites listed pursuant to Government Code §65962.5. The proposed rule amendments are not expected to result in the construction or operation of new equipment or modifications/alterations to existing facilities or equipment. Therefore, the proposed rule amendments would not interfere with site cleanup activities or create additional site contamination, and would not create a significant hazard to the public or environment.

VIII e. No new equipment or modifications/alterations to existing equipment is expected for facilities affected by the proposed rule amendments. The proposed rule amendments would not result in a safety hazard for people residing or working within two miles or a public airport or air strip. Therefore, no significant adverse impacts on an airport land use plan or on a private air strip are expected.

VIII f. Emergency response plans are typically prepared in coordination with the local city or county emergency plans to ensure the safety of the public (surrounding local communities), and the facility employees as well. As explained previously, the proposed rule amendments are not expected to result in the construction or operation of new equipment or modifications/alterations to existing facilities or equipment. Therefore, the proposed rule amendments would not impair implementation of, or physically interfere with any adopted emergency response plan or emergency evacuation plan as no physical facility changes are expected. It is expected that the existing affected facilities already have an emergency response plan in place, where required.

VIII g and h. Facilities affected by the proposed rule amendments may be adjacent to wildlands. The proposed rule amendments are not expected to generate additional development that would place structures closer to wildland areas. It is expected that facilities adjacent to wildland areas take appropriate and required actions to protect their property from wildland fires. The proposed rule amendments would not increase the existing risk of fire hazards in areas with flammable brush, grass, or trees, nor would it increase fire risk by increasing the use of flammable materials. The proposed rule amendments are not expected to expose people or structures to wild fires. Therefore, no significant increase in fire hazards is expected due to the proposed rule amendments.

Conclusion

Based upon these considerations, no significant adverse hazards and hazardous materials impacts are expected from the adoption of the proposed Regulation 2 amendments including revisions to the NSR Program and the Title V Major Facility Review program.

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. HYDROLOGY AND WATER QUALITY.					
Would the project:					
a)	Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☑
b)	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☑
c)	Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☑
d)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite?	☐	☐	☐	☑
e)	Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☑
f)	Otherwise substantially degrade water quality?	☐	☐	☐	☑
g)	Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☑
h)	Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☑

i)	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☑
j)	Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☑

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles). Reservoirs and drainage streams are located throughout the area within the BAAQMD's jurisdiction, and discharge into the Bays. Marshlands incised with numerous winding tidal channels containing brackish water are located throughout the Bay Area.

The San Francisco Bay estuary system is one of the largest in the country and drains approximately 40 percent of California. Water from the Sacramento and San Joaquin Rivers of the Central Valley flow into what is known as the Delta region, then into the sub-bays, Suisun Bay and San Pablo Bay, and finally into the Central Bay and out the Golden Gate. The Delta is a large triangle of interconnected sloughs and agricultural "islands" that forms a key link in California's water delivery system. Some of the fresh water flows through the Delta and into Bay, but much is diverted from the Bay. Nearly half of the surface water in California starts as rain or snow that falls within the watershed and flows downstream toward the Bay. Much of the water flowing toward the Bay is diverted for agricultural, residential, and industrial purposes as well as delivery to cities of southern California as part of state and federal water projects (ABAG, 2013).

The two major drainages, the Sacramento and San Joaquin Rivers receive more than 90 percent of runoff during the winter and spring months from rainstorms and snow melt. San Francisco Bay encompasses approximately 1,600 square miles and is surrounded by the nine Bay Area counties of which seven border the Bay. Other surface waters flow either directly to the Bay or Pacific Ocean. The drainage basin that contributes surface water flows directly to the Bay covers a total area of 3,464 square miles. The largest watersheds include Alameda Creek (695 square miles), the Napa River (417 square miles), and Coyote Creek (353 square miles) watersheds. The San Francisco Bay estuary includes deep-water channels, tidelands, and marshlands that provide a variety of habitats for plants and animals. The salinity of the water varies widely as the landward flows of saline water and the seaward flows of fresh water converge near the Benicia Bridge. The salinity levels in the Central Bay can vary from near oceanic levels to one quarter as much, depending on the volume of freshwater runoff (ABAG 2013).

Regulatory Background

The Federal Clean Water Act of 1972 primarily establishes regulations for pollutant discharges into surface waters in order to protect and maintain the quality and integrity of the nation's waters. This Act requires industries that discharge wastewater to municipal sewer systems to meet pretreatment standards. The regulations authorize the U.S. EPA to set the pretreatment standards. The regulations also allow the local treatment plants to set more stringent wastewater discharge requirements, if necessary, to meet local conditions.

The 1987 amendments to the Clean Water Act enabled the U.S. EPA to regulate, under the National Pollutant Discharge Elimination System (NPDES) program, discharges from industries and large municipal sewer systems. The U.S. EPA set initial permit application requirements in 1990. The State of California, through the State Water Resources Control Board, has authority to issue NPDES permits, which meet U.S. EPA requirements, to specified industries.

The Porter-Cologne Water Quality Act is California's primary water quality control law. It implements the state's responsibilities under the Federal Clean Water Act but also establishes state wastewater discharge requirements. The Regional Water Quality Control Board administers the state requirements as specified under the Porter-Cologne Water Quality Act, which include storm water discharge permits. The water quality in the Bay Area is under the jurisdiction of the San Francisco Bay Regional Water Quality Control Board.

In response to the Federal Act, the State Water Resources Control Board prepared two state-wide plans in 1991 and 1995 that address storm water runoff: the California Inland Surface Waters Plan and the California Enclosed Bays and Estuaries Plan, which have been updated in 2005 as the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California. Enclosed bays are indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. San Francisco Bay, and its constituent parts, including Carquinez Strait and Suisun Bay, fall under this category.

The San Francisco Bay Basin Plan identifies the: (1) beneficial water uses that need to be protected; (2) the water quality objectives needed to protect the designated beneficial water uses; and (3) strategies and time schedules for achieving the water quality objectives. The beneficial uses of the Carquinez Strait that must be protected which include water contact and non-contact recreation, navigation, ocean commercial and sport fishing, wildlife habitat, estuarine habitat, fish spawning and migration, industrial process and service supply, and preservation of rare and endangered species. The Carquinez Strait and Suisun Bay are included on the California list as impaired water bodies due to the presence of chlordane, copper, DDT, diazinon, dieldrin, dioxin and furan compounds, mercury, nickel, PCBs, and selenium.

Significance Criteria

Water Demand:

- The existing water supply does not have the capacity to meet the increased demands of the project, or the project would use more than 263,000 gallons per day of potable water.

Water Quality:

- The project will cause degradation or depletion of ground water resources substantially affecting current or future uses.
- The project will cause the degradation of surface water substantially affecting current or future uses.
- The project will result in a violation of National Pollutant Discharge Elimination System (NPDES) permit requirements.
- The capacities of existing or proposed wastewater treatment facilities and the sanitary sewer system are not sufficient to meet the needs of the project.
- The project results in substantial increases in the area of impervious surfaces, such that interference with groundwater recharge efforts occurs.
- The project results in alterations to the course or flow of floodwaters.

Discussion of Impacts

IX a. and f. The proposed rule amendments are designed to make technical and administrative changes to the New Source Review pre-construction permit program and the Title V Major Facility Review operating permit program in the Bay Area. The modifications to the NSR program would make the District's regulations consistent with the federal requirements, but they are not expected to require the construction of any new or modified equipment at stationary sources within the Bay Area. The amendments to the Title V program would remove GHGs as a regulated pollutant. The proposed Title V amendments are not expected to require the construction of any new equipment or modify equipment at stationary sources.

Based on the above, the proposed Regulation 2 and Title V amendments are not expected to require any physical facility modifications and would not require the construction or operation of additional equipment that could generate additional wastewater or result in water quality impacts. Thus, no increase in wastewater discharge or water quality impacts is expected as a result of the proposed project.

IX b. The proposed rule amendments are designed to make technical and administrative changes to the New Source Review pre-construction permit program and the Title V Major Facility Review operating permit program in the Bay Area. The proposed modifications are not expected to require the construction of any new or modified equipment, including equipment that would use additional water. Thus, no significant increase in water use is expected as a result of the proposed project and no impacts on groundwater levels would occur.

IX c, d, and e. The proposed amendments to Regulation 2 primarily involve changes to the NSR pre-construction permit program and the Title V Major Facility Review program. The proposed project does not have the potential to substantially increase the area subject to runoff since no construction is expected. Additionally, new facilities are typically expected to develop a SWPPP and existing facilities are required to implement SWPPPs to address storm water impacts. The proposed project is also not expected to alter the existing drainage or drainage patterns, result in erosion or siltation, alter the course of a stream or river, or substantially increase the rate or amount

of surface runoff in a manner that would result in flooding onsite or offsite as there will be no major construction or significant water use. Therefore, no significant adverse impacts to storm water runoff or existing drainage patterns are expected as a result of the proposed project.

IX g, h, i, and j. The proposed project does not include the construction of new or relocation of existing housing or other types of facilities and, as such, would not require the placement of housing or other structures within a 100-year flood hazard area. (See also XIII "Population and Housing"). No construction is expected as a result of the proposed project and as a result, the proposed project would not be expected to create or substantially increase risks from flooding; expose people or structures to significant risk of loss, injury or death involving flooding; or increase existing risks, if any, of inundation by seiche, tsunami, or mudflow.

Conclusion

Based upon these considerations, no significant adverse impacts to hydrology and water quality are expected from the adoption of the proposed Regulation 2 amendments including revisions to the NSR Program and the Title V Major Facility Review program.

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
X.	**LAND USE AND PLANNING.** Would the project:				
a)	Physically divide an established community?	☐	☐	☐	☑
b)	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to a general plan, specific plan, local coastal program or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☑
c)	Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☑

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles), so that land uses vary greatly and include commercial, industrial, residential, agricultural, and open space uses. The amendments to Regulation 2 would apply to stationary sources located in facilities which are located within commercial, industrial, or commercial areas in the Bay Area.

Regulatory Background

Land uses are generally protected and regulated by the City and/or County General Plans through land use and zoning requirements.

Significance Criteria

The proposed project impacts will be considered significant on land use and planning if the project conflicts with the land use and zoning designations established by local jurisdictions, or any applicable habitat conservation or natural community conservation plan.

Discussion of Impacts

X a-c. The proposed rule amendments are designed to make technical and administrative changes to the New Source Review pre-construction permit program and the Title V Major Facility Review operating permit program in the Bay Area. The modifications to the NSR program would make

the District's regulations consistent with the federal requirements, but they are not expected to require the construction of any new or modified equipment at stationary sources within the Bay Area. The amendments to the Title V program would remove GHGs as a regulated pollutant. The proposed Title V amendments are not expected to require the construction of any new equipment or modify equipment at stationary sources.

The proposed rule amendments do not include any components that would require major modifications to existing commercial, industrial, or institutional facilities and would not result in impacts that would physically divide an established community or generate additional development. Construction activities are not expected as a result of the proposed project.

Land uses surrounding industrial areas can vary considerably and include industrial areas, commercial areas, open space, and residential areas. The General Plans and land use plans for areas with industrial land uses, such as Richmond, Martinez, Benicia and Rodeo (Contra Costa County) allow for and encourage the continued use of industrial areas within their respective communities. Some of the General Plans encourage the modernization of existing industrial areas, including the refineries. A summary of the land use policies that apply to industrial areas is summarized for these communities.

1. Richmond General Plan 2030 includes the following land use policies regarding industrial areas (Richmond, 2015).

    - Action LU3.H Industrial Lands Retention and Consolidation Ensure that industrial uses are consolidated around rail and port facilities and work with existing industrial operators, economists and commercial brokers to remain informed about the future demand for industrial land.
    - Action LU3.I Industrial Modernization Support heavy industry's on-going efforts to modernize and upgrade their plants to reduce energy use, increase efficiency and reduce emissions.

2. City of Martinez General Plan includes the following land use policies regarding industrial areas (Martinez, 2015).

    - 21.51 Expansion of the petroleum refining and related industries must proceed in an orderly fashion and be consistent with protection of the community's air, water, scenic and fiscal resources.
    - 30.351 Adequate land for industrial growth and development should be provided. It is the policy of the City to encourage and assist existing industry to relocate away from the southern perimeter of the waterfront.
    - 30.352 The City should consider further annexation to the east of the current Martinez City Limits to provide space for expansion of industry.
    - 30.353 Industrial expansion accompanied by adverse environmental impact will not be permitted.
    - 30.354 Acceptability of any industry shall be based upon its demonstrated ability to conform to performance standards set by the City.

- 30.355 Architecture of some merit and landscaping of building sites and parking areas should be required; according to design and landscaping criteria for industrial sites.

3. City of Benicia General Plan includes the following land use policies regarding industrial areas (Benicia, 2015).

- **POLICY 2.6.1:** Preserve industrial land for industrial purposes and certain compatible "service commercial" and ancillary on-site retail uses.
- "Compatible," as defined in the California General Plan Glossary, means "capable of existing together without conflict or detrimental effects." Compatibility will often be decided on a case-by-case basis by the Planning Commission and City Council.
- **POLICY 2.6.2:** Other land uses should not adversely affect existing industrial and commercial land uses.
- Program 2.6.A: Where General Plan amendments propose to convert industrial land to non-industrial or non-commercial uses, require the preparation of a fiscal and economic impact analysis to ensure that the conversion does not adversely affect the city's long-term economic development, or the economic vitality of existing industrial/commercial uses.
- Program 2.6.B: Develop criteria for evaluating whether a proposed non-industrial/non-commercial use would impact the viability of existing industrial/commercial uses. Use the criteria to evaluate non-industrial and non-commercial projects proposed in the Industrial Park.
- **POLICY 2.6.3:** Facilitate continued development of the Industrial Park. Especially encourage general industrial uses to locate in the basin northeast of Downtown (around Industrial Way between East Second and the freeway).
- Program 2.6.C: For lands designated limited industrial, reduce the length of time and number of steps required for development proposals to proceed, consistent with CEQA, community development policies and ordinances, and the design review process for general industrial lands.
- **POLICY 2.6.4:** Link any expansion of Industrial land use to the provision of infrastructure and public services that are to be developed and in place prior to the expansion.
- Program 2.6.D: Continue to update the overall capital improvements program and infrastructure financing plan for the Industrial Park and other major industrial areas.
- Program 2.6.E: Develop Industrial Park infrastructure and public services standards, as approved by the City Council.
- **POLICY 2.6.5:** Establish and maintain a land buffer between industrial/commercial uses and existing and future residential uses for reasons of health, safety, and quality of life.
- Program 2.6.F: Use topography, landscaping, and distance as a buffer between Industrial Park uses and residential uses.
- A buffer is "adequate" to the extent that it physically and psychologically separates uses or properties so as to shield, reduce, or block one set of properties from noise, light, or other nuisances generated on or by the other set of properties. Buffers will be determined on a case by case basis.

4. Rodeo: The Contra Costa General Plan Land Use Element identifies the following land use policies (CCC, 2015).

- 3.163. A buffer of agricultural lands around the eastern Union Oil (currently Phillips 66) property is created in this plan to separate the viewpoint residential area from future industrial development on the property. These open space lands should remain undeveloped.

Based on a review of the applicable land use plans, the proposed project is not expected to conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project. The jurisdictions with land use approval recognize and support the continued use of industrial facilities. The proposed rule amendments would not interfere with those policies or objectives.

Conclusion

Based upon these considerations, no significant adverse land use impacts are expected from the adoption of the proposed Regulation 2 amendments including revisions to the NSR Program and the Title V Major Facility Review program.

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XI.	**MINERAL RESOURCES.** Would the project:				
a)	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☑
b)	Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☑

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles), so that land uses vary greatly and include commercial, industrial, residential, agricultural, and open space uses.

Regulatory Background

Mineral resources are generally protected and regulated by the City and/or County General Plans through land use and zoning requirements.

Significance Criteria

The proposed project impacts on mineral resources will be considered significant if:

- The project would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
- The proposed project results in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

Discussion of Impacts

XI a-b. The proposed amendments to Regulation 2 are not associated with any action that would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state, or of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. The proposed rule amendments are designed to make technical and administrative changes to the New Source

Review pre-construction permit program and the Title V Major Facility Review operating permit program in the Bay Area. The proposed amendments are not expected to require the construction of any new equipment or modify equipment at stationary sources. Therefore, no significant adverse impacts to mineral resources are expected.

Conclusion

Based upon these considerations, no significant adverse impacts to mineral resources are expected from the adoption of the proposed Regulation 2 amendments including revisions to the NSR Program and the Title V Major Facility Review program.

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XII.	**NOISE.** Would the project result in:				
a)	Exposure of persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☑
b)	Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☑
c)	A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☑
d)	A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☑
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☑
f)	For a project within the vicinity of a private airstrip would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☑

Setting

The ambient noise environment in the Bay Area is defined by a wide variety of noise sources, with the predominant noise source being traffic. Traffic noise exposure is primarily a function of the volume of vehicles per day (including automobiles, light, medium and heavy trucks, buses, and motorcycles), the speed of those vehicles, the number of those vehicles represented by the noisiest vehicle types (e.g., medium and heavy trucks), the distribution of those vehicles during daytime and nighttime hours, and the proximity of noise-sensitive receivers to the roadway. Existing traffic noise exposure is expected to be as low as 50 dB Ldn in the most isolated and less frequented locations of the Bay Area, while receivers adjacent to interstates are likely to experience levels as high as 75 dB Ldn (FTA, 2006). Bus transit also contributes to roadway noise levels. In San Francisco, a large portion of the transit bus fleet is electrified and, consequently, the contribution of bus transit to localized roadway noise levels is decreased (ABAG, 2013).

The Bay Area is also presently affected by noise from freight and passenger rail operations. While these operations generate significant noise levels in the immediate vicinity of the railways, train operations are intermittent and area railways are widely dispersed. Commuter rail such as SF MUNI and VTA operate with more frequency than standard gauge rail operations but lower speeds resulting in lower noise levels. BART operations, on the other hand, can attain higher speeds and have the potential for greater noise levels along extended stretches. The contribution of rail noise to the overall ambient noise environment in the Bay Area is relatively minor compared to other sources such as vehicle traffic. Train operations may be a source of significant groundborne vibration near the tracks. Vibration sensitive receivers within 100 feet of rail operations may be adversely affected by vibration exposure during train events (ABAG, 2013).

The Bay Area is home to many airports—including public use, private use, and military facilities. Major airports include San Francisco International, Oakland International and Norman Y. Mineta San José International. In addition to the numerous daily aircraft operations originating and terminating at these facilities, aircraft not utilizing these airports frequently fly over the Bay Area. All of these operations contribute to the overall ambient noise environment. In general, like rail noise, the proximity of the receiver to the airport and aircraft flight path determines the noise exposure. Other contributing factors include the type of aircraft operated, altitude of the aircraft, and atmospheric conditions. Atmospheric conditions may contribute to the direction of aircraft operations (flow) and affect aircraft noise propagation (ABAG, 2013).

A wide variety of industrial and other non-transportation noise sources are located within the Bay Area. These include manufacturing plants, landfills, treatment plants (e.g., water), power generation facilities, food packaging plants, lumber mills, and aggregate mining facilities, just to name a few. Noise generated by these sources varies widely, but in many cases may be a significant if not dominant contributor to the noise environment in a specific community.

Regulatory Background

Noise levels related to construction and operation activities are addressed in local General Plan policies and local noise ordinance standards. The General Plans and noise ordinances generally establish allowable noise limits within different land uses including residential areas, other sensitive use areas (e.g., schools, churches, hospitals, and libraries), commercial areas, and industrial areas.

Significance Criteria

The proposed project impacts on noise will be considered significant if:

- Construction noise levels exceed the local noise ordinances or, if the noise ordinance is currently exceeded, project noise sources increase ambient noise levels by more than three decibels (dBA) at the site boundary.
- The proposed project operational noise levels exceed any of the local noise ordinances at the site boundary or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three dBA at the site boundary.

Discussion of Impacts

XII a, c, and d. The proposed rule amendments are designed to make technical and administrative changes to the New Source Review pre-construction permit program and the Title V Major Facility Review operating permit program in the Bay Area. The modifications to the NSR program would make the District's regulations consistent with the federal requirements, but they are not expected to require the construction of any new or modified equipment at stationary sources within the Bay Area. The amendments to the Title V program would remove GHGs as a regulated pollutant. The proposed Title V amendments are not expected to require the construction of any new equipment or modify equipment at stationary sources. Any new development that could generate noise would not be as a result of the proposed rule amendments and approval of those projects including evaluation of their potential noise impacts would occur regardless of the proposed amendments to Regulation 2.

Based on the above, the proposed Regulation 2 amendments are not expected to require any physical facility modifications and would not require any construction or the operation of additional equipment that could generate noise. No increase in employees or additional delivery trucks would be expected. Therefore, the proposed amendments are not expected to result in an increase in noise impacts.

XII b. The proposed project is not expected to generate or expose people to excessive groundborne vibration or groundborne noise. No construction equipment that would generate vibration (e.g., backhoes, graders, jackhammers, etc.), no new industrial equipment, and no increase in traffic is expected to be required. Therefore, the proposed project is not expected to generate excessive groundborne vibration or noise.

XII e-f. The proposed Regulation 2 amendments may apply to facilities located with an airport land use plan or a private airstrip. However, as explained above, the amendments are not expected to require any physical facility modifications and would not require any construction or the operation of additional equipment that could generate noise. No increase in employees or additional delivery trucks would be expected. Therefore, the proposed amendments would have no noise impact on residents residing or working near public or private airports and no components of the proposed project would substantially increase ambient noise levels, either intermittently or permanently.

Conclusion

Based upon these considerations, no significant adverse noise impacts are expected from the adoption of the proposed Regulation 2 amendments including revisions to the NSR Program and the Title V Major Facility Review program.

		Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII.	**POPULATION AND HOUSING.** Would the project:				
a)	Induce substantial population growth in an area either directly (e.g., by proposing new homes and businesses) or indirectly (e.g. through extension of roads or other infrastructure)?	☐	☐	☐	☑
b)	Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑
c)	Displace a substantial number of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles), so that land uses vary greatly and include commercial, industrial, residential, agricultural, and open space uses. The amendments to Regulation 2 would apply to facilities which are located within commercial, industrial, or institutional areas in the Bay Area.

According to the Association of Bay Area Governments (ABAG), population in the Bay Area is currently about 7.2 million people and is expected to grow to about 9.3 million people by 2040 (ABAG, 2013). Two major demographic changes shape the forecast of household and job growth: the increase in the senior population and the increase in Latino and Asian populations. These demographic changes lead to three major trends in the regional growth by 2040:

- Increase in group houses. The increase in the senior population results in an increase in the amount of resident care facilities. More than 66,000 additional group housing residents are forecasted by 2040.
- Decline in labor force participation: The overall labor force participation rate declines given the increase in the senior population, even taking into account increases in the percentage of people working beyond the age of 65. By 2040, it is estimated that 49.8 out of 100 people will be employed or looking for work, compared by 51.6 in 2010.

- Increase in household size. The number of people per household is expected to increase from 2.69 in 2010 to 2.75 in 2040 as a result of the increase in the Latino and Asian populations, as well as the number of multi-generational households. .

Regulatory Background

Population and housing growth and resources are generally protected and regulated by the City and/or County General Plans through land use and zoning requirements.

Significance Criteria

The proposed project impacts on population and housing will be considered significant if:

- The demand for temporary or permanent housing exceeds the existing supply.
- The proposed project produces additional population, housing or employment inconsistent with adopted plans either in terms of overall amount or location.

Discussion of Impacts

XIII a). The proposed rule amendments are designed to make technical and administrative changes to the New Source Review pre-construction permit program and the Title V Major Facility Review operating permit program in the Bay Area. The modifications to the NSR program would make the District's regulations consistent with the federal requirements, but they are not expected to require the construction of any new or modified equipment at stationary sources within the Bay Area. The amendments to the Title V program would remove GHGs as a regulated pollutant. The proposed Title V amendments are not expected to require the construction of any new equipment or modify equipment at stationary sources.

Therefore, no impacts to population/housing are expected because no new workers would be required. The proposed project is not anticipated to generate any significant effects, either directly or indirectly, on the Bay Area's population or population distribution. As such, adopting the proposed project is not expected to induce population growth.

XIII b and c). As discussed previously, the proposed rule amendments are designed to make technical and administrative changes to the New Source Review pre-construction permit program and the Title V Major Facility Review operating permit program in the Bay Area. The amendments to Regulation 2 are not expected to require any construction activities at new or existing commercial, industrial, or institutional facilities in the Bay Area. The implementation of the proposed rule amendments is not expected to result in the creation of any industry/business that would affect population growth, directly or indirectly induce the construction of single- or multiple-family units, or require the displacement of people or housing elsewhere in the Bay Area. Based upon these considerations, significant population and housing impacts are not expected from the implementation of the proposed project.

Conclusion

Based upon these considerations, no significant adverse impacts to population and housing are expected from the adoption of the proposed Regulation 2 amendments including revisions to the NSR Program and the Title V Major Facility Review program.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. PUBLIC SERVICES. Would the project:				
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:				
Fire protection?	☐	☐	☐	☑
Police protection?	☐	☐	☐	☑
Schools?	☐	☐	☐	☑
Parks?	☐	☐	☐	☑
Other public facilities?	☐	☐	☐	☑

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles), so that land uses vary greatly and include commercial, industrial, residential, agricultural, and open space uses. Amendments to Regulation 2 would generally apply to facilities which are located within commercial, industrial, or institutional areas in the District.

Given the large area covered by the BAAQMD, public services are provided by a wide variety of local agencies. Fire protection services are managed at the local level, typically by municipalities, counties, fire protection districts, or volunteer fire companies. California Government Code §38611 states that any city organized under general law must establish a fire department unless it is included within the boundaries of an established fire protection district. State and federal lands are generally served by State and federal fire agencies, e.g., CALFIRE and National Park Service. In some cases, businesses and native tribes manage their own fire departments. Each fire protection agency is responsible for serving its own prescribed area, but mutual aid agreements are in wide use across the region such that agencies can rely on assistance from neighboring agencies in the case of overwhelming demand (ABAG, 2013).

Police services are provided on the State, county, and local levels. Police services provide law enforcement in crime prevention, traffic and congestion control, safety management, emergency response, and homeland security. The California Highway Patrol (CHP) is responsible for police protection along the interstate highway systems and provides services for traffic management, emergency response, and protection of the highway system. Each county in the Bay Area has its

own sheriff's department responsible for police protection in unincorporated areas of each county. Each incorporated city and town has a police department responsible for police protection within its own jurisdiction (ABAG, 2013).

Although the California public school system is under the policy direction of the Legislature, the California Department of Education relies on local control for the management of school districts. School district governing boards and district administrators allocate resources among the schools of the district and set education priorities for their schools. Each jurisdiction in the Bay Area provides residents with local public education facilities and services, including elementary, middle, secondary, and post-secondary schools, as well as special and adult education (ABAG, 20130).

Public facilities within the BAAQMD are managed by different county, city, and special-use districts.

Regulatory Background

City and/or County General Plans usually contain goals and policies to assure adequate public services are maintained within the local jurisdiction.

Significance Criteria

The proposed project impacts on public services will be considered significant if the project results in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or the need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response time or other performance objectives.

Discussion of Impacts

XIV a. The proposed rule amendments are designed to make technical and administrative changes to the New Source Review pre-construction permit program and the Title V Major Facility Review operating permit program in the Bay Area. The modifications to the NSR program would make the District's regulations consistent with the federal requirements, but they are not expected to require the construction of any new or modified equipment at stationary sources within the Bay Area. The amendments to the Title V program would remove GHGs as a regulated pollutant. The proposed Title V amendments are not expected to require the construction of any new equipment or modify equipment at stationary sources. Based on the above, no additional fire or police protection services would be required due to the proposed amendments to Regulation 2.

As noted in the "Population and Housing" discussion above, the proposed project is not expected to induce population growth because no increase in the local labor pool (e.g., workforce) would be required due to implementation of the proposed Regulation 2 amendments. Therefore, there will be no increase in local population and thus no impacts are expected to local schools or parks.

The proposed project would not result in the need for new or physically altered government facilities in order to maintain acceptable service ratios, response times, or other performance objectives. There will be no increase in population as a result of the adoption of the proposed rule amendments, therefore, no need for physically altered government facilities.

Conclusion

Based upon these considerations, no significant adverse impacts to public services are expected from the adoption of the proposed Regulation 2 amendments including revisions to the NSR Program and the Title V Major Facility Review program.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. RECREATION.				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☑
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☑

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara Counties, and potions of western Solano and southern Sonoma Counties. Because the area of coverage is vast (approximately 5,600 square miles), land uses vary greatly and include commercial, industrial, residential, and agricultural uses. The amendments to Regulation 2 would apply to facilities which are generally located within commercial, industrial, or institutional areas within the District.

The Bay Area contains over one million acres of parks and open space areas. Approximately 147,000 acres of new parkland were added to the regional's open space inventory between 2002 and 2011, representing a 26 percent increase. Additionally, approximately 200,000 acres of privately owned land are held in permanent reserve as of 2011. While access by the general public to these reserve areas is restricted, they are important for the preservation of wildlife habitats and the protection of the environment (ABAG, 2013).

Regulatory Background

Recreational areas are generally protected and regulated by the City and/or County General Plans at the local level through land use and zoning requirements. Some parks and recreation areas are designated and protected by state and federal regulations

Significance Criteria

The proposed project impacts on recreation will be considered significant if:

- The project results in an increased demand for neighborhood or regional parks or other recreational facilities.
- The project adversely affects existing recreational opportunities.

Discussion of Impacts

XV a-b. As discussed under "Land Use" above, there are no provisions in the amendments to Regulation 2 affecting land use plans, policies, or regulations. Land use and other planning considerations are determined by local governments; no land use or planning requirements will be altered by the proposed rule amendments. No new or modified equipment or operations are expected to be required to comply with the proposed amendments, so there would be no impacts on recreation facilities. The proposed project would not increase or redistribute population and, therefore, would not increase the demand for or use of existing neighborhood and regional parks or other recreational facilities or require the construction of new or the expansion of existing recreational facilities. Therefore, adoption of the proposed rule amendments is not expected to have any significant adverse impacts on recreation.

Conclusion

Based upon these considerations, no significant adverse recreation impacts are expected from the adoption of the proposed Regulation 2 amendments including revisions to the NSR Program and the Title V Major Facility Review program.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. TRANSPORTATION/TRAFFIC. Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☑
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established b the county congestion management agency for designated roads or highways?	☐	☐	☐	☑
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☑
d) Substantially increase hazards because of a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?	☐	☐	☐	☑
e) Result in inadequate emergency access?	☐	☐	☐	☑
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☑

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles). Transportation systems located within the Bay Area include railroads, airports, waterways, and highways. The Port of Oakland and three international airports in the area serve as hubs for commerce and transportation. The transportation infrastructure for vehicles and trucks in the Bay Area ranges from single lane roadways to multilane interstate highways. The Bay Area currently contains over 1,300 directional miles of limited-access highways, which include both interstates and state highways. In addition, the Bay Area has over 33,000 directional miles of arterials and local streets, providing more localized access to individual communities. Together, these roadway facilities accommodate nearly 17 million vehicle trips a day. There are over 11,500 transit route miles of service including heavy rail (BART), light rail (Muni Metro and VTA Light Rail), commuter rail (Caltrain and ACE), diesel and electric buses, cable cars, and ferries. The Bay Area also has an extensive local system of bicycle routes and pedestrian paths and sidewalks. At a regional level, the share of workers driving alone was about 68 percent in 2010. The portion of commuters that carpool was about 11 percent in 2010, while an additional 10 percent utilize public transit. About 3 percent of commuters walked to work in 2010. In addition, other modes of travel (bicycle, motorcycle, etc.), account for three percent of commuters in 2010 (ABAG, 2013). Cars, buses, and commercial vehicles travel about 149 million miles a day (2010) on the Bay Area Freeways and local roads. Transit serves about 1.6 million riders on the average weekday (ABAG, 2013).

The region is served by numerous interstate and U.S. freeways. On the west side of San Francisco Bay, Interstate 280 and U.S. 101 run north-south. U.S. 101 continues north of San Francisco into Marin County. Interstates 880 and 660 run north-south on the east side of the Bay. Interstate 80 starts in San Francisco, crosses the Bay Bridge, and runs northeast toward Sacramento. Interstate 80 is a six-lane north-south freeway which connects Contra Costa County to Solano County via the Carquinez Bridge. State Routes 29 and 84, both highways that allow at-grade crossings in certain parts of the region, become freeways that run east-west, and cross the Bay. Interstate 580 starts in San Rafael, crosses the Richmond-San Rafael Bridge, joins with Interstate 80, runs through Oakland, and then runs eastward toward Livermore. From the Benicia-Martinez Bridge, Interstate 680 extends north to Interstate 80 in Cordelia. Interstate 780 is a four lane, east-west freeway extending from the Benicia-Martinez Bridge west to I-80 in Vallejo.

Regulatory Background

Transportation planning is usually conducted at the state and county level. Planning for interstate highways is generally done by the California Department of Transportation.

Most local counties maintain a transportation agency that has the duties of transportation planning and administration of improvement projects within the county and implements the Transportation Improvement and Growth Management Program, and the congestion management plans (CMPs). The CMP identifies a system of state highways and regionally significant principal arterials and specifies level of service standards for those roadways.

Significance Criteria

The proposed project impacts on transportation and traffic will be considered significant if:

- A major roadway is closed to all through traffic, and no alternate route is available.
- The project conflicts with applicable policies, plans or programs establishing measures of effectiveness, thereby decreasing the performance or safety of any mode of transportation.
- There is an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.
- The demand for parking facilities is substantially increased.
- Water borne, rail car or air traffic is substantially altered.
- Traffic hazards to motor vehicles, bicyclists or pedestrians are substantially increased.

Discussion of Impacts

XVI a and b. The proposed rule amendments are designed to make technical and administrative changes to the New Source Review pre-construction permit program and the Title V Major Facility Review operating permit program in the Bay Area. The modifications to the NSR program would make the District's regulations consistent with the federal requirements, but they are not expected to require the construction of any new or modified equipment at stationary sources within the Bay Area. The amendments to the Title V program would remove GHGs as a regulated pollutant. The proposed Title V amendments are not expected to require the construction of any new equipment or modify equipment at stationary sources. Any new development potentially affecting traffic would not be as a result of the proposed rule amendments and approval of those projects including evaluation of their potential traffic impacts would occur regardless of the proposed amendments to Regulation 2.

Based on the above, the proposed Regulation 2 amendments are not expected to generate any additional traffic impacts as they are not expected to require physical facility modifications. No increase in employees or additional delivery trucks would be expected. Therefore, the proposed amendments are not expected to conflict with any traffic plans (including congestion management plans), ordinances or policies.

XVI c. The proposed rule amendments are not expected to involve the delivery of materials via air so no increase in air traffic is expected. No physical facility modifications are expected as part of the proposed amendments to Regulation 2 and the proposed project would not result in a change in air traffic patterns or result in a change in location that results in substantial safety risks.

XVI d - e. The proposed rule amendments would not increase traffic hazards or create incompatible uses. The proposed rule amendments do not involve construction of any roadways or other transportation design features, so no changes to current roadway designs that would increase traffic hazards are expected. Emergency access at the commercial, industrial, and institutional facilities affect by the proposed rule amendments is not expected to be impacted by the proposed project, as no physical modifications are expected to be required because of the proposed amendments. The proposed rule amendments are not expected to increase vehicle trips or to alter the existing long-term circulation patterns. The proposed project is not expected to

require a modification to circulation, thus, no long-term impacts on the traffic circulation system are expected to occur.

XVI f) The proposed rule amendments are not expected to affect the performance of mass transit or non-motorized travel to street, highways and freeways, pedestrian or bicycle paths as no new employees or additional delivery/truck trips would be generated since no physical modifications are expected to be required. Therefore, the proposed rule amendments would not conflict with any congestion management programs, result in changes to level of service at intersections, increase travel demand, impact public transit, or impact bicycle or pedestrian safety. No changes are expected to parking capacity at or in the vicinity of affected facilities as the proposed rule amendments are not expected to require additional employees or truck/delivery trucks. Therefore, no impacts resulting in changes to traffic patterns or adopted traffic plans or programs are expected.

Conclusion

Based upon these considerations, no significant adverse impacts to transportation and traffic are expected from the adoption of the proposed Regulation 2 amendments including revisions to the NSR Program and the Title V Major Facility Review program.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less-than-Significant Impact	No Impact
XVII. TRIBAL CULTURAL RESOURCES. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resourced Code section 5020.1(k), or	☐	☐	☐	☑
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.?	☐	☐	☐	☑

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles), so that land uses vary greatly and include commercial, industrial, residential, agricultural, and open space uses.

The Carquinez Strait represents the entry point for the Sacramento and San Joaquin Rivers into the San Francisco Bay. This locality lies within the San Francisco Bay and the west end of the Central Valley archaeological regions, both of which contain a rich array of prehistoric and historical cultural resources. The areas surrounding the Carquinez Strait and Suisun Bay have been occupied for centuries given their abundant natural resources and moderate climate. The arrival of Native Americans into the Bay Area is associated with documented cultural resources from about 5,500 years ago (ABAG, 2013).

Six different groups of Native American population, identified by their language, lived within the Bay Area, including Costanoan, Eastern Miwok, Patwin, Coast Miwok, Pomo, and Wappo. Native villages and campsites were inhabited on a temporary basis and are found in several ecological niches due to the seasonal nature of their subsistence base. Remains of these early populations indicate that main villages, seldom more than 1,000 residents, were usually established along water courses and drainages. By the late 1760s, about 300,000 Native Americans lived in California (ABAG, 2013).

Regulatory Background

The State CEQA Guidelines were amended in July 2015 to include evaluation of impacts on tribal cultural resources. Tribal cultural resources include sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe (Public Resources Code 21074).

Significance Criteria

The proposed project impacts to tribal resources will be considered significant if:

- The project results in the disturbance of a significant prehistoric or historic archaeological site or a property of tribal cultural significance to a community or ethnic or social group or a California Native American tribe.
- Unique objects with cultural value to a California Native American tribe are present that could be disturbed by construction of the proposed project.

Discussion of Impacts

XVII a). As discussed in Section V, Cultural Resources, resources (buildings, structures, equipment) that are less than 50 years old are excluded from listing in the National Register of Historic Places unless they can be shown to be exceptionally important. Implementing the proposed rule amendments affect stationary sources which are generally located at commercial, industrial, or institutional facilities. Some affected facilities may have equipment older than 50 years. However, such equipment does not typically meet the criteria identified in CEQA Guidelines §15064.5(a)(3), are not listed or eligible for listing in the California Register of Historic Resources or a local register of historical resources (Public Resources Code Section 5020.1(k), and are not considered to have cultural value to a California Native American tribe. Further, the proposed rule amendments are not expected to result in any new development or physical modifications. For these reasons, the proposed rule amendments are not expected to require physical changes to a site, feature, place, cultural landscape, sacred place or object with cultural value to a California Native American Tribe. Furthermore, the proposed rule amendments are not expected to result in a physical change to a resource determined to be eligible for inclusion or listed in the California Register of Historical Resources or included in a local register of historical resources. Any new development potentially affecting tribal resources would not be as a result of the proposed project and approval of those projects including evaluation of their impacts on tribal resources would occur regardless of the proposed amendments to Regulation 2.

As part of releasing this CEQA document for public review and comment, the document is circulated to the State Clearinghouse that provides notice of the proposed project to all California Native American Tribes that requested to be on the Native American Heritage Commission's (NAHC) notification list per Public Resources Code § 21080.3.1(b)(1). The NAHC notification list provides a 30-day period during which a Native American Tribes may respond to the notice, in writing, requesting consultation on the proposed Rule amendments.

Since no construction activities are expected, the proposed rule amendments would not adversely affect historical or tribal resources as defined in Public Resources Section 5020.1(k), or 5024.1. Therefore, no impacts to tribal resources are anticipated to occur as a result of the proposed Rule amendments.

Conclusion

Based upon these considerations, no significant adverse impacts to tribal resources are expected from the adoption of the proposed Regulation 2 amendments including revisions to the NSR Program and the Title V Major Facility Review program.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less-than-Significant Impact	No Impact
XVIII. UTILITIES/SERVICE SYSTEMS. Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☑
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☑
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☑
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements needed?	☐	☐	☐	☑
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☑
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☑
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☑

Setting

Given the large area covered by the BAAQMD, public utilities are provided by a wide variety of local agencies. Most industrial facilities have wastewater and storm water treatment facilities and discharge treated wastewater under the requirements of National Pollutant Discharge Elimination System (NPDES) permits. Water is supplied to affected facilities by several water purveyors in the Bay Area. Solid waste is handled through a variety of municipalities, through recycling activities and at disposal sites.

There are no hazardous waste disposal sites within the jurisdiction of the BAAQMD. Hazardous waste generated at facilities, which is not recycled off-site, is required to be disposed of at a licensed hazardous waste disposal facility. Two such facilities are the Chemical Waste Management Inc. (CWMI) Kettleman Hills facility in King's County, and the Safety-Kleen facility in Buttonwillow (Kern County). Hazardous waste can also be transported to permitted facilities outside of California.

City and/or County General Plans usually contain goals and policies to assure adequate utilities and service systems are maintained within the local jurisdiction.

Significance Criteria

The proposed project impacts on utilities/service systems will be considered significant if:

- The capacities of existing or proposed wastewater treatment facilities and the sanitary sewer system are not sufficient to meet the needs of the project.
- An increase in demand for utilities impacts the current capacities of the electric utilities.
- The existing water supply does not have the capacity to meet the increased demands of the project, or the project would use a substantial amount of potable water.
- The project increases demand for water by more than 263,000 gallons per day.
- The generation and disposal of hazardous and non-hazardous waste exceeds the capacity of designated landfills.

Discussion of Impacts

XVIII a, b, d and e). The potential water use and wastewater impacts associated with implementation of the proposed amendments to Regulation 2 were discussed under Hydrology and Water Quality (see Section IX a.). The proposed rule amendments are designed to make technical and administrative changes to the NSR pre-construction permit program and the Title V Major Facility Review operating permit program in the Bay Area. The proposed rule amendments are not expected to require the construction of any new equipment or create modifications to existing equipment or facility operations. No impacts on water use or wastewater discharge are expected due to the implementation of the proposed amendments to Regulation 2.

XVIII c). The proposed amendments to Regulation 2 are not expected to result in the construction of any new equipment, or result in modifications to existing equipment or operations. The amendments to Regulation 2 would not alter the existing drainage system or require the construction of new storm water drainage facilities. Nor would the proposed amendments create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff. Therefore, no significant adverse impacts on storm drainage facilities are expected.

XVIII f and g). The proposed amendments to Regulation 2 are not expected to result in the construction of any new equipment, or result in modifications to existing equipment or operations. Therefore, the proposed amendments are not expected to result in an increase in solid or hazards waste generated by affected facilities. No significant impacts on waste generation are expected

from the implementation of the amendments to Regulation 2. Waste streams from affected facilities would be treated/disposed/recycled in the same manner as they currently are handled. Therefore, no significant impacts to hazardous or solid waste disposal facilities are expected due to the proposed new rule. Facilities are expected to continue to comply with all applicable federal, state, and local statutes and regulations related to solid and hazardous wastes.

Conclusion

Based upon these considerations, no significant adverse impacts to utilities/service systems are expected from the adoption of the proposed Regulation 2 amendments including technical and administrative revisions to the NSR Program and the Title V Major Facility Review program.

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIX.	**MANDATORY FINDINGS OF SIGNIFICANCE.**				
a)	Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☐	☑
b)	Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)	☐	☐	☐	☑
c)	Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☑

Discussion of Impacts

XIX a.

The proposed rule amendments are designed to make changes to the New Source Review pre-construction permit program and the Title V Major Facility Review operating permit program in the Bay Area. The modifications to the NSR program would make the District's regulations consistent with the federal requirements, but they are not expected to require the construction of any new or modified equipment at stationary sources within the Bay Area. The amendments to the Title V program would remove GHGs as a regulated pollutant. The proposed Title V amendments are not expected to require the construction of any new equipment or modify equipment at stationary sources. Any new development potentially affecting environmental resources would not be as a result of the proposed rule amendments and approval of those projects including evaluation of their potential environmental impacts would occur regardless of the proposed amendments to Regulation 2.

Therefore, the proposed Regulation 2 amendments do not have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or

wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory, as discussed in the previous sections of the CEQA checklist. As discussed in Section IV - Biological Resources, Section V - Cultural Resources, and Section XVII – Tribal Cultural Resources, no significant adverse impacts are expected to biological, cultural or tribal cultural resources.

The proposed rule amendments are designed to make changes to the New Source Review pre-construction permit program and the Title V Major Facility Review operating permit program in the Bay Area. The modifications to the NSR program would make the District's regulations consistent with the federal requirements, but they are not expected to require the construction of any new or modified equipment at stationary sources within the Bay Area. The amendments to the Title V program would remove GHGs as a regulated pollutant. The proposed Title V amendments are not expected to require the construction of any new equipment or modify equipment at stationary sources.

XIX b-c. The proposed Regulation 2 amendments are not expected to result in any significant environmental impacts. The modifications to the NSR program would make technical and administrative changes. The technical and administrative modifications to the NSR program would make the District's regulations consistent with the federal requirements, but they are not expected to require the construction of any new or modified equipment at stationary sources within the Bay Area. The amendments to the Title V program would remove GHGs as a regulated pollutant. The proposed Title V amendments are not expected to require the construction of any new equipment or modify equipment at stationary sources.

As discussed in the previous checklist discussions, the proposed rule amendments are not expected to exceed any of the applicable significance thresholds, which also serve as the cumulative significance thresholds. Therefore, the proposed project impacts are not considered to be cumulatively considerable (CEQA Guidelines §15064 (h)(1)) and are not expected to generate significant adverse cumulative impacts. The proposed project does not have adverse environmental impacts that are limited individually, but cumulatively considerable when considered in conjunction with other regulatory control projects. The proposed rule amendments are not expected to have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly. No significant adverse environmental impacts are expected.

Chapter 4

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APPENDIX A

PROPOSED NEGATIVE DECLARATION

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[PROPOSED NEGATIVE DECLARATION FOR PUBLIC REVIEW AND COMMENT]

CALIFORNIA ENVIRONMENTAL QUALITY ACT
NEGATIVE DECLARATION

Technical and Administrative Amendments to Bay Area Air Quality Management District New Source Review and Title V Permitting Programs

Pursuant to the California Environmental Quality Act (CEQA), Public Resources Code §§ 21000 *et seq*, and Sections 15071 and 15074 of the CEQA Guidelines, the Board of Directors of the Bay Area Air Quality Management District (Air District) hereby adopts this Negative Declaration finding that the adoption of technical and administrative amendments to the Air District's New Source Review and Title V permitting programs will not have a significant effect on the environment.

Project Name: Technical and Administrative Amendments to the Bay Area Air Quality Management District New Source Review and Title V Permitting Programs.

Project Description: This Project is a set of technical and administrative amendments to the Air District's New Source Review (NSR) and Title V permitting programs. The amendments involve four rules in Regulation 2, which is the Air District's permitting regulation. The four rules are Regulation 2, Rule 1 (Permits – General Requirements), Regulation 2, Rule 2 (Permits – New Source Review), Regulation 2, Rule 4 (Permits – Emissions Banking), and Regulation 2, Rule 6 (Permits – Title V Major Facility Review). The amendments make certain revisions to these four rules (i) to address certain "deficiencies" identified by the U.S. Environmental Protection Agency (EPA) in order to allow EPA to fully approve the District's NSR program under the federal Clean Air Act; (ii) to address certain other areas where further revisions and clarifications of the NSR regulations are needed; and (iii) to align the Air District's programs with the U.S. Supreme Court's ruling in *Utility Air Regulatory Group v. EPA*. The amendments are described in more detail in the Initial Study attached hereto and in the Staff Report that Air District staff prepared to explain the basis for these revisions.

Project Location: The nine-county jurisdiction of the Bay Area Air Quality Management District, which includes all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties, and portions of southwestern Solano County and southern Sonoma County. A map of the project location is provided in Figure 2.2-1. on page 2-2 of the Initial Study attached hereto.

Project Proponent and Lead Agency: The Bay Area Air Quality Management District.

Finding of No Significant Impact: The Board of Directors of the Bay Area Air Quality Management District hereby finds, using its own independent judgment and analysis, that based on the whole record (including the Initial Study and public comments received) there is no substantial evidence that the Technical and Administrative Amendments to the Bay Area Air Quality Management District New Source Review and Title V Permitting Programs will have a significant effect on the environment.

Initial Study: A copy of the Initial Study documenting the reasons supporting the finding of no significant impact is attached hereto.

Mitigation Measures: No mitigation measures need to be included in the project to avoid potentially significant effects, as the project will not have any potentially significant effects.

August 3, 2017

Socioeconomic Impact Analysis of Proposed Revisions to Regulation 2 Rule 1, Regulation 2 Rule 2, and Regulation 2 Rule 6

Prepared for:

Bay Area Air Quality Management District

Prepared by:

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ADE - 30 YEARS OF SERVICE

APPLIED DEVELOPMENT ECONOMICS

BAY AREA GREEN BUSINESS

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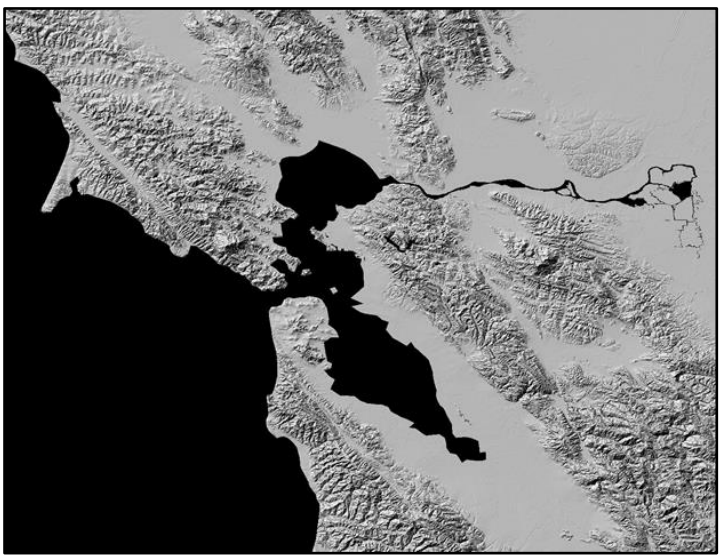
1. INTRODUCTION

The Bay Area Air Quality Management District ("District") seeks to amend the "New Source Review" pre-construction program and the Title V "Major Facility Review" operating permit program. Specifically, the District proposes to revise Regulation 2, Rule 1 (Permits – General Requirements), Regulation 2, Rule 2 (Permits – New Source Review), and Regulation 2, Rule 6 (Permits – Major Facility Review). This report analyzes the socioeconomic impacts associated with the proposed revisions.

After this introduction, this report discusses the proposed revisions in greater detail (Section Two). After that discussion, the report describes the socioeconomic impact analysis methodology and data sources (Section Three). The report describes population and economic trends in the nine-county San Francisco Bay Area (Section Four), which serves as a backdrop against which the Air District is contemplating its various rule changes. Finally, the socioeconomic impacts stemming from the proposed rule changes are discussed in Section Five. The report is prepared pursuant to Section 40728.5 of the California Health and Safety Code, which requires an assessment of socioeconomic impacts of proposed air quality rules. The findings in this report can assist Air District staff, members of the Board of Directors, regulated entities, and interested members of the public in understanding the socioeconomic impacts of the proposed requirements. Figure 1 is a map of the nine-county region that comprises the San Francisco Bay Area Air Basin.

Figure 1 – Map of San Francisco Bay Area Region



2. OVERVIEW OF PROPOSED REVISIONS TO REG. 2 RULE 1, REG. 2 RULE 2, AND REG. 2 RULE 6

The Air District's New Source Review (NSR) program is a comprehensive air permitting program that applies to stationary-source facilities within the District's jurisdiction. The NSR program is the Air District's principal substantive permitting program, applying to a wide variety of stationary-source facilities throughout the Bay Area. Whenever a facility wants to install a new source of air emissions or make a modification to an existing source, the NSR program requires the facility to obtain a permit and implement state-of-the-art air pollution control technology to limit the source's emissions. NSR is a pre-construction permitting requirement, meaning that the facility is required to obtain its NSR permit before it can begin work on the new source or modification.

The Air District's Title V Major Facility Review (Title V) program requires "major" facilities – those with emissions of over 10, 25, or 100 tons per year, depending on the pollutant – to obtain operating permits. The Title V operating permit does not impose any additional substantive requirements on these facilities to limit their emissions. Instead, the purpose of the Title V permit is to collect all of the substantive emissions control requirements applicable to the facility under District, state and federal permits and regulations into one comprehensive document, which improves the transparency and enforceability of the regulatory requirements for these complex "major" facilities.

Since the last time when the District updated its NSR and Title V regulations in 2012, the District has determined that a number of developments have given rise to a need to consider further revisions to enhance the effectiveness of these permit programs. BAAQMD staff indicate that while the proposed revisions are relatively minor, and are mostly technical and administrative in nature, the proposed changes are important to ensure that the Air District's NSR and Title V programs function properly from a legal standpoint. The developments that triggered the need for the proposed revisions are summarized below:

- In 2016, EPA approved the Air District's 2012 revisions as satisfying the requirements of the federal Clean Air Act, with the exception of 11 identified "deficiencies." The District needs to make certain revisions to address these deficiency items so that EPA can fully approve the District's NSR program.

- In addition, Air District Staff have gained further experience in working with the 2012 updates since they were adopted, and have identified certain areas where additional revisions and clarifications are needed to ensure that the NSR program functions as effectively as possible.

- Finally, in 2014 the U.S. Supreme Court issued a ruling in Utility Air Regulatory Group v. EPA (134 S.Ct. 2427 (2014)) that interpreted several relevant provisions of the federal Clean Air Act regarding the Act's NSR and Title V program requirements. The Air District needs to make certain revisions to align the District's regulations with the Supreme Court's ruling.

COST OF COMPLIANCE

The revisions the Air District is considering to address the deficiency items identified by EPA are mostly minor and administrative in nature. As such, these revisions are not expected to have any significant impact on emissions or on compliance costs. According to the District, changes aimed at improving the functioning of the NSR program are similarly minor and administrative in nature, and thus are not expected to have any significant compliance cost impacts.

The only substantive revision the Air District needs to make to address the UARG v. EPA decision is to revise Regulation 2, Rule 6 to provide that a facility does not become subject to the Title V Major Facility Review operating permit requirements solely because of GHG emissions. The revision affects a very limited number of facilities that exceed the now-vacated 100,000 tpy CO_2e Title V threshold for GHGs, but do not exceed the Title V threshold for any other pollutants. These facilities will no longer be subject to Title V permit requirements. For similar reasons, the District has determined that there will be little economic impact on any affected facilities because they will still face the exact same costs of compliance with respect to their substantive emissions requirements, which will remain unchanged.

3. METHODOLOGY

Applied Development Economics (ADE) typically begins its impact analysis by preparing a statistical description of the industries affected by proposed rules and amendments, analyzing data on the number of establishments, jobs, and payroll. We also estimated sales generated by impacted industries. To generate its estimates, ADE relies on the most current data available from a variety of sources, particularly the State of California's Employment Development Department (EDD) Labor Market Information Division, the US Census County Business Patterns, and the US Internal Revenue Service. When presented with a list of specific firms affected by proposed new regulations, ADE also analyzes firm-specific data from private data vendors, such as InfoUSA.

When compliance cost information is readily available, ADE then compares costs against net profits, in the case of private sector entities affected by proposed rules, with the results of socioeconomic analysis shows what proportion of profits the compliance costs represent. Based on assumed thresholds of significance, ADE discusses in the report whether the affected sources are likely to reduce jobs as a means of recouping the cost of rule compliance or as a result of reducing business operations. To the extent that such job losses appear likely, the indirect multiplier effects of the jobs losses are estimated using a regional IMPLAN input-output model. In the case of impacts borne by public sector entities, ADE analyzes whether affected sources can cover costs a combination of sources' annual revenues and fund balance reserves.

When analyzing the socioeconomic impacts of proposed new rules and amendments, ADE attempts to work closely within the parameters of accepted methodologies discussed in a 1995 California Air Resources Board (ARB) report called "Development of a Methodology to Assess the Economic Impact Required by SB513/AB969" (by Peter Berck, PhD, UC Berkeley Department of Agricultural and Resources Economics, Contract No. 93-314, August, 1995). The author of this report reviewed a methodology to assess the impact that California Environmental Protection Agency proposed regulations would have on the ability of California businesses to compete. The ARB has incorporated the methodologies described in this report in its own assessment of socioeconomic impacts of rules generated by the ARB. One methodology relates to determining a level above or below which a rule and its associated costs is deemed to have significant impacts. When analyzing the degree to which its rules are significant or insignificant, the ARB employs a threshold of significance that ADE follows. Berck reviewed the threshold in his analysis and wrote, "The Air Resources Board's (ARB) use of a 10 percent change in [Return on Equity] ROE (i.e. a change in ROE from 10 percent to a ROE of 9 percent) as a threshold for a finding of no significant, adverse impact on either competitiveness or jobs seems reasonable or even conservative."

4. ECONOMIC AND DEMOGRAPHIC TRENDS

This section of the report discusses the larger context within which the Air District is contemplating revisions to Reg. 2 Rule 1, Reg. 2 Rule 2, and Reg. 2 Rule 6. This section begins with a broad overview of demographic and economic trends, with discussion then narrowing to industries and sources affected by the proposed rule changes.

REGIONAL POPULATION TRENDS

Table 1 tracks population growth in the nine-county San Francisco Bay Area between 2006 and 2016, including data for the year 2011. Between 2006 and 2017, the region grew by approximately 0.9 percent a year. Between 2011 and 2016, the region grew annually at a somewhat faster rate of 1.2 percent per year. Overall, there are 7,649,565 people in the region. At 1,927,888 Santa Clara County has the most people, while Napa has the least, at 142,028. Santa Clara grew the fastest between 2011 and 2016, at 1.3 percent a year, while Marin grew by the slowest rate (0.6 percent a year) over the same period.

Table 1: Population Trends: Bay Area Counties, Region, and California

JURISDICTION	2006	2011	2016	06-11 CAGR	11-16 CAGR	06-16 CAGR
California	36,116,202	37,536,835	39,255,883	0.8%	0.9%	0.8%
SF Bay Area	6,915,872	7,220,443	7,649,565	0.9%	1.2%	1.0%
Alameda	1,462,371	1,525,695	1,627,865	0.9%	1.3%	1.1%
Contra Costa	1,007,169	1,059,495	1,123,429	1.0%	1.2%	1.1%
Marin	246,969	253,964	262,274	0.6%	0.6%	0.6%
Napa	131,330	136,913	142,028	0.8%	0.7%	0.8%
San Francisco	781,295	815,854	866,583	0.9%	1.2%	1.0%
San Mateo	699,347	726,305	766,041	0.8%	1.1%	0.9%
Santa Clara	1,706,676	1,803,362	1,927,888	1.1%	1.3%	1.2%
Solano	410,964	413,438	431,498	0.1%	0.9%	0.5%
Sonoma	469,751	485,417	501,959	0.7%	0.7%	0.7%

Source: ADE, Inc., based on California Dept. of Finance E-5 Reports (note: CAGR = compound annual growth rate)

REGIONAL ECONOMIC TRENDS

Data in Table 2 describe the larger economic context within which officials are contemplating the proposed revisions to Reg. 2 Rule 1, Reg. 2 Rule 2, and Reg. 2 Rule 6. Businesses in the region employ over three and a half million workers, or 3,611,076. Of the 3,611,076 workers, 157,408 or 4.4 percent, are civil servants in the public sector (109,269 are local government employees and 48,140 are state and federal workers). This figure does not include public sector education employees, who were combined with private sector education employees in an effort to present a picture as to the total number of persons in the education in the Bay Area. There are 145,498 employees in "Education:

elementary and secondary", and another 77,514 in "Education: post-secondary", for a total of 223,012 (or 6.2 percent). For the same reason, we combined public sector workers in health care with private sector workers in health.

Table 2 — San Francisco Bay Area Employment Trends By Sector: 2006 - 2016

	Industry Sector	2006	2011	2016	2016	2016 CA	SFBA CAGR* 06-11	SFBA CAGR 11-16	CA CAGR 11-16
Total		3,150,735	3,040,409	3,611,076	100.00%	100%	-0.7%	3.5%	2.7%
62	Health and Social Assist.	345,833	384,305	469,975	13.01%	14.1%	2.1%	4.1%	3.8%
54	Prof., Scientific	312,042	339,865	436,816	12.10%	7.3%	1.7%	5.1%	2.8%
44-45	Retail	336,232	311,906	343,504	9.51%	10.0%	-1.5%	1.9%	1.7%
31-33	Manufacturing	352,040	311,361	335,243	9.28%	7.8%	-2.4%	1.5%	0.9%
72	Food Srv, Drnkng (NAICS 722)	222,418	236,326	300,218	8.31%	8.1%	1.2%	4.9%	4.6%
56	Admin. Support (NAICS 561)	175,238	158,050	200,162	5.54%	6.2%	-2.0%	4.8%	4.4%
23	Construction	192,897	130,376	184,119	5.10%	4.6%	-7.5%	7.1%	6.5%
51	Information	112,820	116,668	172,891	4.79%	3.1%	0.7%	8.2%	3.8%
61	Education: elem., sec.	123,430	120,714	145,498	4.03%	5.4%	-0.4%	3.8%	1.6%
52	Finance and Insurance	151,360	118,888	129,338	3.58%	3.2%	-4.7%	1.7%	0.9%
42	Wholesale	125,200	113,953	128,274	3.55%	4.3%	-1.9%	2.4%	1.8%
81	Other Services***	105,108	105,729	123,827	3.43%	3.1%	0.1%	3.2%	2.9%
92	Public: Local Govt**	116,196	105,061	109,269	3.03%	3.9%	-2.0%	0.8%	0.5%
48-49	Transportation\Warehousing	85,970	76,695	89,958	2.49%	3.0%	-2.3%	3.2%	4.7%
61	Education: post-secondary	68,644	69,239	77,514	2.15%	3.1%	0.2%	2.3%	1.0%
55	Mgt. of Companies	56,807	60,196	72,498	2.01%	1.3%	1.2%	3.8%	2.8%
71	Arts, Entertain., Recreation	50,976	52,549	61,090	1.69%	1.7%	0.6%	3.1%	3.7%
53	Real Estate	62,020	52,139	58,855	1.63%	1.6%	-3.4%	2.5%	2.2%
72	Accommodations (NAICS 721)	47,380	46,522	51,100	1.42%	1.3%	-0.4%	1.9%	2.2%
92	Public: State and Federal**	59,325	66,047	48,140	1.33%	2.5%	2.2%	-6.1%	-0.7%
11	Agriculture	20,450	19,231	20,317	0.56%	2.5%	-1.2%	1.1%	1.6%
99	Unclassified	131	12,567	19,630	0.54%	0.5%	149.1%	9.3%	7.4%
22	Utilities	15,689	18,940	18,705	0.52%	0.6%	3.8%	-0.2%	0.3%
56	Waste Mgtmnt. (NAICS 562)	10,482	11,105	12,499	0.35%	0.3%	1.2%	2.4%	3.0%
21	Mining	2,047	1,977	1,638	0.05%	0.1%	-0.7%	-3.7%	-2.8%

*Source: Applied Development Economics, Inc. based on California EDD LMID QCEW (http://www.labormarketinfo.edd.ca.gov/qcew/cew-select.asp). *Note: CAGR = compound annual growth rate. **Note: EDD LMID public education (elementary, secondary, and post-secondary), public health, and public utilities employment data moved out of local, state and federal public administration categories and into their corresponding private categories above, in an effort to accurately profile employment trends by sector. ***Note: in 2013, the US BLS moved a large portion of NAICS 814110 (private households) to NAICS 624120 (Support to elderly persons and persons with disabilities): the totals above account for that adjustment for 2006 and 2011.*

Economic sectors in the table above are sorted by the share of total employment. The top-five sectors in the Bay Area in terms of total number of workers are Health and Social Assistance (NAICS 62) (469,75 workers), Professional/Technical Services (NAICS 54) (436,816 workers), Retail (NAICS 44-45) (343,504), Manufacturing (NAICS 31-33) (335,243) and Food Services (300,218). Of the top-ten leading sectors in terms of employment, six exhibited high rates of annual growth from 2010 to 2015,

growing annually by more than four percent. These sectors are Health and Social Assistance (4.1 percent per year), Professional/Technical Services (5.1 percent), Food Services (4.9 percent), Administrative Support (NAICS 561) (4.8 percent), Construction (NAICS 23) (7.1 percent per year) and Information (NAICS 51), which grew at a phenomenal annual rate of 8.1 percent. Combined, these five sectors employ 49 percent of total employment, or 1,764,180 out of 3,611,076. The table also demonstrates the advanced nature of the regional economy, as 12.1 percent of all workers are in the Professional, Scientific and Technical (NAICS 54), whereas in the state as a whole, 7.3 percent of all workers are in this sector. Interestingly, at 1.5 percent per year, manufacturing employment growth in the Bay Area almost doubled statewide manufacturing growth rates (0.9 percent), underscoring the diversity of the regional economy.

5. SOCIOECONOMIC IMPACT ANALYSIS OF PROPOSED REVISIONS TO REGULATION 2

As indicated above, Regulation 2 and its various rules apply to firms across a wide set of industries, to the extent that firms (and the respective industries that firms are in) create a new or modify an existing stationary source facility that generates criteria pollutant emissions in amounts that exceed regional air quality and emissions standards. Currently, BAAQMD has approximately 8,000 sources subject to NSR permitting. The firms comprising the 8,000–plus permittees are of all sizes and are in a wide range of private and public sector industries. Oil refineries, hospitals, "big box" retailers, manufacturing plants, and even establishments such as some fast-food restaurants are a few examples of the types of industries subject to NSR. BAAQMD does not regulate transportation sources (cars, trucks, trains, etc.), so at this point the NSR applies only to stationary sources.

While almost all industries are potentially subject to NSR, most NSR-related revisions BAAQMD intends to make affect "major" facilities, which means facilities with total facility emissions over 100 or 250 tons per year (depending on the facility type). Further underscoring limits to the reach of the NSR, the bulk of the BAAQMD's to Reg. 2 Rule 1, Reg. 2 Rule 2, and Reg. 2 Rule 6 revisions are being required by EPA to address federal Clean Air Act (CAA) requirements applying mostly to "major" facilities. Whether a firm is a small or large establishment, or whether affected firms' stationary source facilities are "major" facilities or not, the administrative and technical revisions to Reg. 2 Rule 1, Reg. 2 Rule 2, and Reg. 2 Rule 6 are minor and are not expected to have any significant impact on emissions or on compliance costs, resulting in less than significant impacts for purposes of the socioeconomic impact analysis.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Final Report

Demonstration of SO_2 Precursor Contributions to $PM_{2.5}$ in the San Francisco Bay Area

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Contents

1. INTRODUCTION AND EXECUTIVE SUMMARY

This report documents a modeling analysis conducted by the Bay Area Air Quality Management District (Air District) that addresses the sensitivity of fine particulate matter ($PM_{2.5}$) concentrations within the San Francisco Bay Area to potential increases in sulfur dioxide (SO_2) emissions from major point sources in the region. This modeling analysis demonstrates that SO_2 emissions increases from major sources will not contribute significantly to any regional $PM_{2.5}$ levels exceeding the $PM_{2.5}$ 24-hour-average National Ambient Air Quality Standards (NAAQS), even if the Bay Area experiences a high level of SO_2 emissions growth in the future. The Air District is submitting this demonstration to the US Environmental Protection Agency (EPA) to support an exemption from the requirement to regulate SO_2 under the District's Nonattainment New Source Review (NNSR) requirements pursuant to Section 189(e) of the Clean Air Act and 40 CFR Section 51.165(a)(13).

The San Francisco Bay Area's air quality currently does not exceed the $PM_{2.5}$ 24-hour-average NAAQS, as EPA concluded in its 2013 "Clean Data Finding" for $PM_{2.5}$. *See Determination of Attainment for the San Francisco Bay Area Nonattainment Area for the 2006 Fine Particle Standard*, 78 FR 1760 (Jan. 9, 2013). By definition, therefore, there are no major sources of SO_2 that contribute significantly to any $PM_{2.5}$ levels exceeding the NAAQS within the meaning of Section 189(e). EPA is nevertheless requiring the Air District to conduct a sensitivity analysis in order to support a Section 189(e) exemption. The Air District has therefore analyzed the potential for future SO_2 emissions increases to contribute significantly to ambient 24-hour-average $PM_{2.5}$ concentrations in accordance with EPA's requirements for making $PM_{2.5}$ precursor demonstrations under 40 CFR Section 51.1006(a)(3), using conservative assumptions about a high level of potential emissions growth.

The analysis conservatively assumed that all existing major SO_2 sources in the Bay Area, and all existing minor SO_2 sources that emit 4 tons per year or more, would increase their emissions by 20%; and also that 7 new major SO_2 emissions sources would be built around the region emitting 370 TPY SO_2 each. These are highly conservative assumptions, as regional SO_2 emissions have been declining for years, not increasing, and are expected to continue to go down; and because it is unlikely that any new major SO_2 sources will be built in the region at all, let alone 7 new major sources with 370 TPY of new SO_2 emissions each. The Air District nevertheless used these very large growth assumptions in its analysis in order to be highly conservative in evaluating what could potentially occur in the future.

This hypothetical future emissions growth was modeled using two models: the CALPUFF plume dispersion model, which modeled impacts throughout an entire calendar year; and the Community Multiscale Air Quality (CMAQ) photochemical grid model, which modeled impacts for December and January, the winter months when the region typically experiences its highest $PM_{2.5}$ levels. The CALPUFF model indicated a maximum modeled impact (as SO_4) of just under 0.7 $\mu g/m^3$, and the CMAQ model indicated a maximum modeled impact of just under 0.6 $\mu g/m^3$.

These results demonstrate that even if the San Francisco Bay Area were to experience a high level of SO_2 emissions growth in the future, the total modeled impact on ambient $PM_{2.5}$ concentrations would not exceed 0.7 $\mu g/m^3$. This level of increase is not statistically significant in light of the

inherent variability in observed ambient $PM_{2.5}$ concentrations due to fluctuating meteorological conditions and changes in day-to-day source operations. This level of modeled impact is only slightly over half of the 1.3 $\mu g/m^3$ level of increase that would be considered significant. The modeling results therefore support the conclusion that SO_2 emissions from major sources in the Bay Area do not and will not contribute significantly to 24-hour $PM_{2.5}$ concentrations exceeding the NAAQS within the meaning of Section 189(e) and 40 CFR Section 51.165(a)(13).

This report describes the results of the Air District's modeling analysis in detail. The report is organized as follows. After this Executive Summary, Section 2 of the report discusses the purpose of the $PM_{2.5}$ Precursor Demonstration project to provide a technical basis for exempting SO_2 from the Clean Air Act's NNSR requirements under Section 189(e) and 40 CFR Section 51.165(a)(13). Section then 3 details the modeling and analysis methodology the Air District used in the analysis. Section 4 presents the results from the two model applications, and Section 5 summarizes the findings of the analysis and presents conclusions. Appendices are included at the end of this report to document the protocol the Air District followed in undertaking this analysis and the data and settings used in the models.

2. PURPOSE OF THE SO_2 DEMONSTRATION

The San Francisco Bay Area has been designated as a nonattainment area for the 2006 24-hour $PM_{2.5}$ NAAQS. The Air District is therefore required under the Clean Air Act to regulate $PM_{2.5}$ emissions from major stationary sources under its NNSR permitting program. The Clean Air Act also requires emissions of $PM_{2.5}$ precursors such as SO_2 to be regulated on the same basis as $PM_{2.5}$, unless EPA determines that emissions of the precursor from major sources do not contribute significantly to $PM_{2.5}$ concentrations exceeding the NAAQS. CAA § 189(e), 42 USC 7513a(e); *see also* 40 CFR § 51.165(a)(13). The purpose of this SO_2 Precursor Demonstration is to provide a technical basis for EPA to make this determination with respect to SO_2 emissions from major sources in the San Francisco Bay Area.

EPA's requirements for making $PM_{2.5}$ precursor demonstrations for NNSR permitting programs are set forth in 40 CFR Section 51.1006(a)(3). That provision requires the Air District to evaluate the sensitivity of ambient $PM_{2.5}$ concentrations in the region to increases in SO_2 emissions resulting from potential major source growth in the area under conservative growth assumptions. If potential future growth in SO_2 emissions from major sources will not have a significant effect on regional $PM_{2.5}$ concentrations, then EPA can exempt the Bay Area from the Clean Air Act's NNSR requirements with respect to SO_2 as a $PM_{2.5}$ precursor. The Air District has designed this SO_2 Precursor Demonstration project to conform to EPA's requirements for a sensitivity analysis under Section 51.1006(a)(3) that will allow EPA to make this exemption determination.

3. SO_2 DEMONSTRATION APPROACH

This section summarizes the Air District's approach for analyzing the $PM_{2.5}$ impacts from potential future SO_2 emissions growth in the Bay Area.

3.1 Development of SO_2 Demonstration Protocol

In undertaking this SO_2 Precursor Demonstration, the Air District followed a Protocol developed in conjunction with staff from EPA Region 9 and EPA's Office of Air Quality Planning and Standards (OAQPS). In drafting the Protocol, the Air District incorporated the principles set forth in EPA's Draft $PM_{2.5}$ Precursor Demonstration Guidance,[1] and Air District staff met several times with EPA staff to discuss and refine the Protocol's approach. The final Protocol that resulted from these planning meetings details and formalizes the modeling methodology the Air District used in the Demonstration. The Protocol is set forth in Appendix A to this Report for reference.

The Protocol describes current trends in 24-hour-average $PM_{2.5}$ concentrations in the Bay Area. The region's "Design Value" for 24-hour-average $PM_{2.5}$ – the statistical metric used to determine compliance with the NAAQS[2] – has held relatively steady from 2010 through 2016 between 25 and 30 $\mu g/m^3$, just below the NAAQS of 35 $\mu g/m^3$. Concentrations exceeded 35 $\mu g/m^3$ on a number of individual days during this period, however. These exceedances are primarily a wintertime phenomenon. They tend to occur during the months of December and January during cold, foggy episodes characterized by strong stability and weak easterly surface winds, and not during the summer months when $PM_{2.5}$ concentrations are relatively low as a result of strong westerly winds that efficiently ventilate the Bay Area. Winter exceedances are primarily impacted from residential woodburning.

The Protocol also describes current trends in SO_4 concentrations in the region. SO_4 is the principal constituent of $PM_{2.5}$ that is generated by SO_2 emissions. SO_2 emissions react in the atmosphere to form SO_4, which forms an aerosol of fine droplets less than 2.5 microns in diameter – *i.e.*, $PM_{2.5}$. This is why SO_2 is a pollutant of concern for regulation as a $PM_{2.5}$ precursor.

SO_4 makes a relatively small contribution to total $PM_{2.5}$ levels in the Bay Area, and it has the biggest effect on $PM_{2.5}$ during the summer months, when $PM_{2.5}$ levels are the lowest. As discussed in the Protocol, monthly-average SO_4 concentration over 2012-2014 reached just over 1 $\mu g/m^3$ in the summer, but were less than 0.5 $\mu g/m^3$ during winter months. Additionally, SO_4 did not vary much across different monitoring sites around the region, suggesting that SO_4 in the Bay Area is primarily the result of background sources well outside the Bay Area, potentially including oceanic sources.

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[1] "$PM_{2.5}$ Precursor Demonstration Guidance", U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Air Quality Assessment Division and Air Quality Policy Division, Research Triangle Park, NC (EPA-454/P-16-001, November 2016).

[2] The Design Value is defined as the 3-year average of the highest 98th percentile monitor reading at the monitoring location with the highest such value. Thus, to determine the Design Value, the 98th percentile concentration observed at each monitoring site during each year of a 3-year period is identified; the identified 98th-percentile concentrations for each of the 3 years are averaged for each site; and then the highest of these 3-year-average values out of all of the monitoring locations in the region is defined as the region's Design Value.

The Protocol also describes SO_2 emissions in the Bay Area that contribute to SO_4 formation. According to the Air District's 2012 modeling inventory, SO_2 emissions in the Bay Area total 26.9 tons per day (TPD), which is comprised of 17.7 TPD from stationary point sources; 6.3 TPD from ocean-going vessels (which is likely to be lower by now due to offshore Emission Control Area regulations); 2.5 TPD from mobile sources (both road and non-road); and 0.4 TPD from stationary area sources.

3.2 Selection of Models For Use In The Analysis

The Air District used two different models to assess the potential impacts of SO_2 emissions growth on regional $PM_{2.5}$ concentrations. The first is the CALPUFF plume model, which was run to simulate SO_2 dispersion and subsequent SO_4 production from specific point sources over a domain encompassing the Bay Area. The second is the Community Multiscale Air Quality (CMAQ) photochemical grid model, which was run to simulate the full photochemical evolution of SOx, NOx, and organic compounds in both gas and particulate phase from all sources over a large central California domain.

To model the $PM_{2.5}$ impacts of potential SO_2 emissions increases, the Air District used existing modeling datasets for the year 2012 that address $PM_{2.5}$, SO_2 and SO_2 contributions to fine particulate SO_4. 2012 is an appropriate year for this purpose because it is reasonably recent and representative of current $PM_{2.5}$ patterns in the Bay Area, as detailed in the Protocol. And 2012 has been extensively modeled and analyzed by the Air District to investigate Bay Area patterns and emissions sensitivity for both ozone and $PM_{2.5}$, so modeling datasets for 2012 are readily available and fully vetted.

The modeling analysis was based on a comparison of two modeled scenarios: (i) a "base case" scenario reflecting existing emissions levels (based on the 2012 datasets), and (ii) a "modified case" scenario based on a conservatively high estimate of potential SO_2 emissions growth, as discussed in more detail in Section 3.4 below. Impacts from the potential SO_2 emissions growth were determined by the difference between the base case and modified case scenarios.

The CALPUFF model was run to simulate the impacts from potential SO_2 emissions growth throughout the entire year to address SOx chemistry and transport associated with point source plumes. The CMAQ model was run for the months of December and January – the months when the Bay Area experiences the highest $PM_{2.5}$ concentrations and occasional exceedances of the 35 $\mu g/m^3$ standard – to explicitly treat detailed chemistry and transport from all sources during exceedance-level $PM_{2.5}$ events.

3.3 Evaluation of CMAQ Model Performance Compared To Observed Concentrations

As explained in the Protocol, CMAQ modeling characterizes the Bay Area's observed seasonal $PM_{2.5}$ and SO_4 patterns well, both in magnitude and spatially. The protocol recommended evaluating relative differences in modeled concentrations should the model performance be poor for SO_4 and $PM_{2.5}$. The Air District therefore undertook a more detailed quantitative performance evaluation for the CMAQ model. This evaluation focused on the model's ability to replicate observed patterns of SO_4 and total $PM_{2.5}$ throughout the Bay Area during high/exceedance wintertime pollution episodes. The analysis compared the model's predictions

for January and December with actual observed values from 5 monitoring sites around the Bay Area for SO_4 and 13 monitoring sites for total $PM_{2.5}$. For each day during the periods of January 2-31 and December 2-30, 2012, the analysis compared observed SO_4 and $PM_{2.5}$ concentrations as measured at each monitor with the values predicted by the CMAQ v5.0.2 model for the grid cell containing that monitor. (Not all monitoring sites had valid data for each day throughout this date range, so the analysis was based only on days with non-missing, validated measurements.)

The results are shown in Figure 1 (for SO_4) and Figure 2 (for total $PM_{2.5}$), which plot the observed concentration for each day against the concentration predicted by the model for that day. The plotted values for each day are the average values across all of the monitoring locations used in the analysis for that day. Also shown are four key statistical measures: mean bias (MB), mean (unsigned or gross) error (ME), normalized mean bias (NMB) and normalized mean error (NME). These statistical measures are calculated from individual model/observation differences at each site and for each day, as opposed to being calculated from an average across multiple locations for each day.

This evaluation establishes that model performance is sufficient to base the SO_2 Precursor Demonstration on absolute (rather than relative) simulated impacts to SO_4 and $PM_{2.5}$. For SO_4, the model over-predicted SO_4 concentrations during most of the period evaluated, and it tended to perform best on the days with hightest observed SO_4. It typically over-predicted SO_4 by less than 0.2 $\mu g/m^3$ (MB) in both months, relative to an observed range of 0.2-1.0 $\mu g/m^3$ in January and 0.2-0.6 $\mu g/m^3$ in December (a NMB range of 30-36%). These biases and unsigned errors are typical of model performance achieved throughout the US over the past decade,[3] especially for small observed concentrations below 1 $\mu g/m^3$. For $PM_{2.5}$, the model similarly over-predicted $PM_{2.5}$ in both months, with a nearly consistent absolute bias and gross error each month, but higher normalized relative bias and error in December because of lower observed concentrations than in January. In general, CMAQ replicated the observed day-to-day patterns, but over predicted typically by about 3-4 $\mu g/m^3$ MB (20-45% NMB).

The analysis thus shows that the model is capable of replicating overall SO_4 and $PM_{2.5}$ concentrations and day-to-day variations, with a tendency for slight over-prediction. Evaluating impacts based on absolute modeled concentration changes is therefore appropriate, and may even be conservative, depending on the role of background sources of SO_4 within the modeling domain and as specified via boundary conditions.

[3] Emery, C., Z. Liu, A.G. Russell, M.T. Odman, G. Yarwood, N. Kumar (2016): Recommendations on statistics and benchmarks to assess photochemical model performance, *Journal of the Air & Waste Management Association*, DOI:10.1080/10962247.2016.1265027; Simon, H., K.R. Baker, S., Phillips (2012). Compilation and interpretation of photochemical model performance statistics published between 2006 and 2012. *Atmospheric Environment,* 61:124–39, doi:10.1016/j.atmosenv.2012.07.012.

Figure 1

CMAQ Model Predictions Compared To Observed Concentrations – SO_4

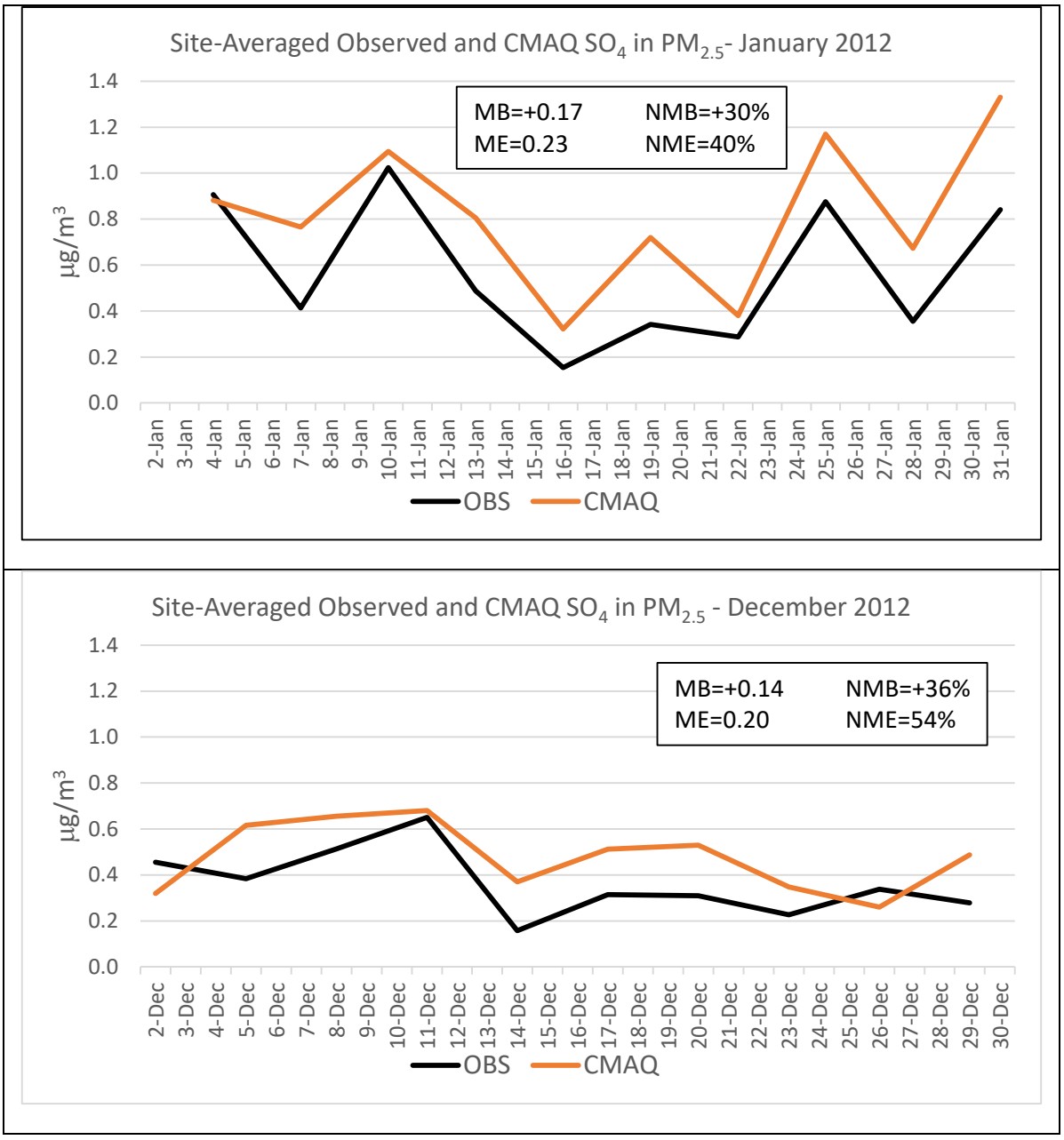


Figure 1 presents a time series of observed and simulated 24-hour SO_4 in $PM_{2.5}$, averaged over 5 measurement sites in the Bay Area with valid data, for the January (top) and December (bottom) 2012 modeling periods. Each plot notes key statistical measures: mean bias (MB), mean unsigned error (ME), normalized mean bias (NMB) and normalized mean error (NME).

Figure 2

CMAQ Model Predictions Compared To Observed Concentrations – Total $PM_{2.5}$

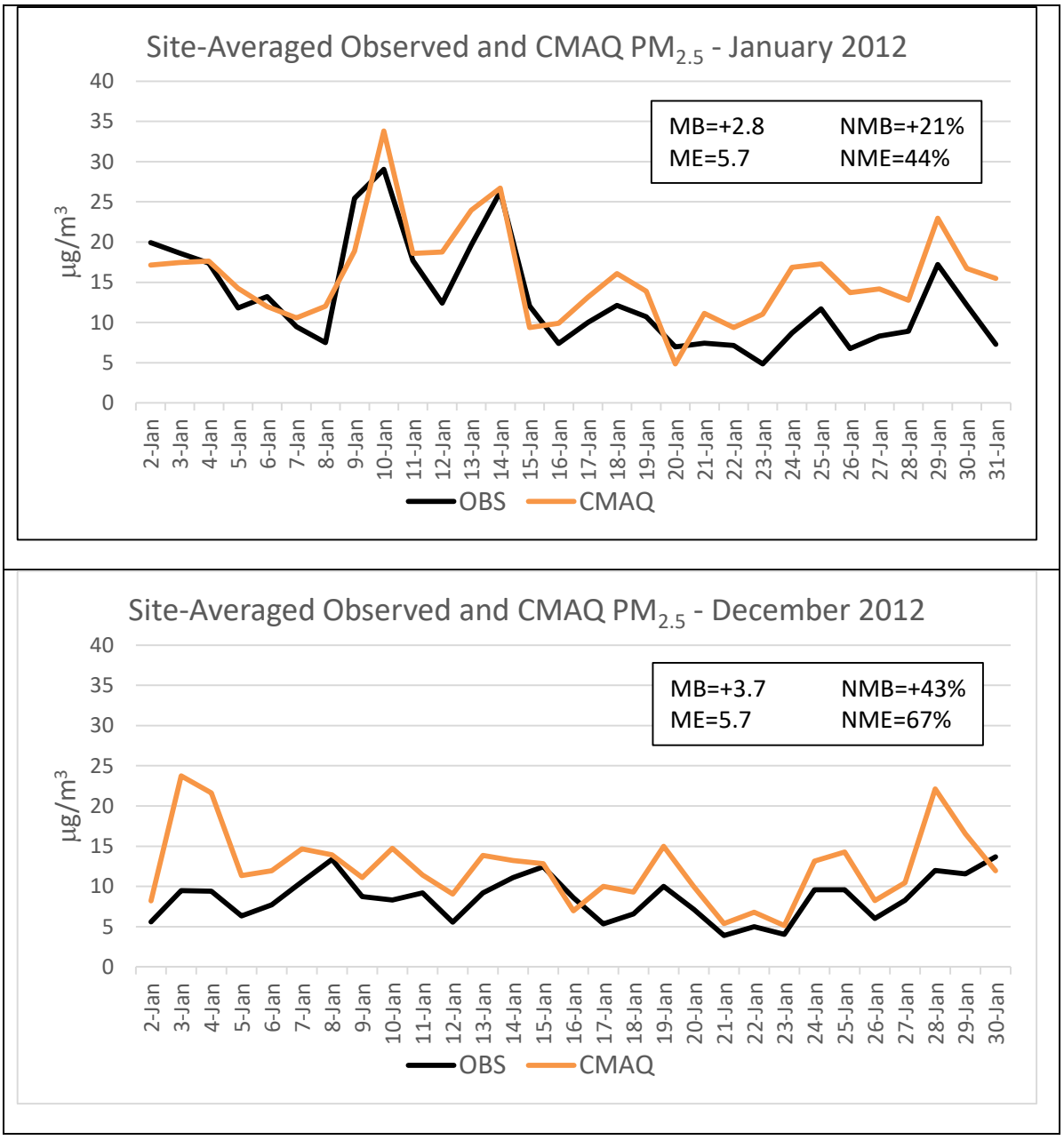


Figure 2 presents a time series of observed and simulated 24-hour total $PM_{2.5}$, averaged over 13 measurement sites in the Bay Area with valid data, for the January (top) and December (bottom) 2012 modeling periods. Each plot notes key statistical measures: mean bias (MB), mean unsigned error (ME), normalized mean bias (NMB) and normalized mean error (NME).

3.4 Selection of Conservative SO_2 Emissions Growth Scenario

The Protocol also outlines the bases for the conservative SO_2 emissions growth assumptions the Air District used in the demonstration. In this context, "conservative" means that the Air District estimated potential new emissions growth on the very high side of what is reasonably expected in order to ensure that the analysis does not underestimate what could occur in the future. As EPA's draft $PM_{2.5}$ Demonstration Guidance states, the demonstration should evaluate more emissions growth "than what is merely 'likely' to occur in the area," so that the NAAQS will be protected even if growth is higher than anticipated.

The Air District developed a conservative SO_2 emissions growth scenario by assuming that all existing stationary sources in the Bay Area that currently emit at least 4 TPY SO_2 (including both major sources and minor sources) would increase their emissions by 20%; and that seven new major sources would be built emitting 370 TPY SO_2 each.

For the increase from existing sources, including all sources with emissions of at least 4 TPY SO_2 encompasses a total of 129 sources emitting 6,082 TPY of SO_2, or 16.7 TPD on average. This accounts for over 94% of all point source SO_2 emissions in the District. The Air District conservatively assumed that each of these 129 sources would increase its SO_2 emissions by 20%. These increases were modeled at the location of the existing sources, using their existing stack parameters and characteristics.

For the 7 hypothetical new major sources, the Air District conservatively assumed that they would emit 370 TPY SO_2 each, which is the average emissions rate among all major SO_2 sources in California. The locations of these hypothetical new major sources were carefully selected to cover the entire Bay Area with reasonable density, including locations that are already populated with existing major sources but also extending to the north and south bay regions where such large sources do not currently exist.

The total increase in SO_2 emissions under this conservative growth scenario would be 3,806 TPY, or 10.4 TPD on average. This represents a 39% increase in Bay Area total SO_2 emissions and a 59% increase in Bay Area point source SO_2 emissions. Again, the District does not anticipate that emission increases of this magnitude will actually occur. But they represent a conservative "worst case" approach in keeping with EPA's draft Demonstration Guidance.

3.5 Determination of Significant Contribution Threshold

The Protocol also outlines the basis for the 1.3 $\mu g/m^3$ threshold below which the modeled SO_2 emissions growth will not be considered to make a "significant" contribution to $PM_{2.5}$ concentrations for purposes of the sensitivity analysis. Due to fluctuating meteorological conditions and changes in day-to-day source operations, there is inherent variability in the air quality in the area of a monitoring site. A concentration difference of 1.3 $\mu g/m^3$ is the 50% confidence interval for the 35 $\mu g/m^3$ 24-hour-average $PM_{2.5}$ NAAQS, representing a "significant" impact. Thus, where the modeled impact from the highly conservative SO_2 emissions growth scenario is less than 1.3 $\mu g/m^3$, the analysis can conclude that such growth will not contribute significantly to any $PM_{2.5}$ concentrations exceeding the NAAQS.

3.6 Methodology For $PM_{2.5}$ Impact Projections

As outlined in the Protocol, the Air District modeled SO_4 and $PM_{2.5}$ concentrations in the "base case" scenario (without any SO_2 emission increases) and the "modified case" scenario with the hypothetical future emissions growth. The $PM_{2.5}$ impacts throughout the Bay Area were assessed using the "brute force" approach, which calculates the difference between the two scenarios. The District compared the base case vs. modified case scenarios on an absolute basis (rather than relative) from the combination of all modified sources (not separately). As discussed in Section 3.3, CMAQ replicates total SO_4 and $PM_{2.5}$ (from all sources) well during high-concentration episodes, with a slight tendency for over prediction, which provides confidence in an assessment of absolute modeled impacts.

Impacts on 24-hour-average SO_4 concentrations (for both CALPUFF and CMAQ) and 24-hour average $PM_{2.5}$ concentrations (for CMAQ) from the increased SO_2 emissions were estimated by applying the following steps to the output of the CMAQ and CALPUFF modeling simulations.

1) The 24-hour SO_4/$PM_{2.5}$ concentration was determined for each grid cell of the modeling domain for each day under the base case scenario. Concentrations were determined from hourly CMAQ and CALPUFF output. In the case of CMAQ, SO_4 and $PM_{2.5}$ concentrations were calculated from the sum of component species (sulfate, nitrate, organics, other) for each day of the January and December 2012 modeling period. For CALPUFF, SO_4 concentrations were calculated for all days of 2012.

2) The 24-hour $PM_{2.5}$ concentration was determined for each grid cell for each day under the modified case scenario, in the same way as the base case for both models.

3) The difference in 24-hour concentrations between the modified case and base case scenarios was tabulated for each grid cell for all of the days evaluated. For CMAQ, the difference in concentration was calculated for SO_4 and $PM_{2.5}$, whereas for CALPUFF the difference was calculated for SO_4. These calculations yielded daily, gridded impacts from the modified case scenario, as compared to the base case.

4) The modeled 24-hour $PM_{2.5}$ and SO_4 impacts from the respective CMAQ and CALPUFF modeled time periods were rank-ordered and assessed for the purpose of the demonstration. Impacts were quantified both in terms of absolute concentration differences and relative percentage differences.

The results of modeling methodology are outlined in the next section.

4. MODELING ANALYSES AND RESULTS

This section discusses the details of the CALPUFF and CMAQ modeling analyses and presents their results.

4.1 CALPUFF Modeling

CALPUFF Model Runs

CALPUFF version 6.42 was run for the entirety of 2012, month-by-month, to simulate the dispersion of SO_2 from point sources and its chemical conversion to SO_4. CALPUFF was configured and run identically to the Air District's existing applications for SO_2 and SO_4 simulations; Appendix B presents the CALPUFF control input file for January. The modeling domain consists of a 67x67 grid covering the 9-county area within the Air District's boundaries, with 4 km horizontal grid spacing and 10 vertical layers extending to 3 km above terrain elevation. The MESOPUFF-II chemistry was invoked to simulate chemical production of SO_4. Background concentrations of certain pollutants such as ozone (O_3), ammonia (NH_3) and hydrogen peroxide (H_2O_2) were specified according to Table 1.

Table 1: Chemistry options selected in the CALPUFF control input file.

Option Name	Value
MCHEM	1, transformation rates computed internally (MESOPUFF II scheme)
MWET	1, wet removal modeled
MDRY	1, dry deposition modeled
MOZ	0, use monthly background ozone values
BCKO3	40 ppb for all 12 months
MNH3	0, use monthly background ammonia values
BCKNH3	10 ppb for all 12 months
BCKH2O2	1 ppb for all 12 months

Hourly meteorological inputs for 2012 were prepared using CALMET version 6.211. Surface and upper-air meteorological measurements were obtained from the National Center for Atmospheric Research (NCAR) and the National Climatic Data Center, respectfully. Surface measurements from NCAR's DS472 included hourly data at 48 sites. Vertical profile measurements included 12-hourly data from the Oakland radiosonde. Terrain elevation and land use data were obtained from the US Geological Survey. CALMET options such as mixing depth processes were carefully selected to best represent the region. CALMET was run one month at a time; CALMET parameters and configuration settings for January are shown in Appendix C. The simulated meteorological fields were evaluated and compared against observations. Graphical displays of key meteorological parameters were generated and visually inspected for accuracy, representativeness and reasonableness.

Point source emissions were taken from the CMAQ point source emissions inventory file for 2012. The CMAQ point source file consists of stack information and emissions for 29,847 individual point processes in the Bay Area. The analysis focused on point sources emitting 4 TPY or more SO_2, as discussed in Section 3.4. There are 129 such sources, which account for over 94% of all

point source SO_2 emissions in the Bay Area. These 129 processes are routed to 114 individual stacks, with specific characteristics (e.g., height, diameter, exit temperature and speed) from which to determine plume rise. A CALPUFF emissions input file was prepared that contains: source ID, latitude, longitude, stack height, base elevation, exit diameter, exit velocity, exit temperature, building downwash, and emissions of SO_2 for each of the 114 stacks. This file represents the "base case" inputs for the CALPUFF simulation.

The "modified case" scenario includes a 20% increase in SO_2 emissions from the 114 existing stacks and the addition of 7 hypothetical new sources, as described above. Stack parameters for the hypothetical new sources were developed based on an evaluation of stack parameters for existing sources of similar size within the Bay Area. Specifically, stack parameters for the two Bay Area sources with annual SO_2 emissions closest to 370 tons (one source was above 370 tons and the other below 370 tons) were tested in CALPUFF, and the set of stack parameters that resulted in the highest SO_4 concentrations was selected. These parameters, which are shown below, are from a representative refinery stack at Tesoro Refinery. Table 2 specifies stack parameters and location coordinates for the representative stack and all 7 hypothetical new sources.

Height: 330 ft
Diameter: 3.25 ft
Temperature: 175.7 °F
Flow Rate: 338.33 ft^3/s
Velocity: 40.75 ft/s

As previously noted, each hypothetical new source was set to emit 370 TPY SO_2; no other precursors were emitted from these sources. Appendix D provides a complete listing of all 121 CALPUFF point sources including stack parameters and emission rates.

Table 2: Stack Parameters and Location Coordinates of the 7 Hypothetical New SO_2 Sources and the Representative Refinery Stack On Which They Are Based

FIPS	PlantID	PointID	StackID	blrID	FCC Name	SCC	Latitude	Longitude
6013	14628	1411	1402	2	TesoroRefining&MarketingCo	30102306	38.0239	-122.0646
6097	99001	1	1	1	New_Petaluma	30102306	38.2389	-122.5895
6013	99002	2	1	1	New_Delta_West	30102306	38.0183	-122.2350
6013	99003	3	1	1	New_Delta_East	30102306	38.0220	-122.0006
6001	99004	4	1	1	New_San_Leandro	30102306	37.6045	-122.0807
6001	99005	5	1	1	New_Livermore	30102306	37.6535	-121.8852
6085	99006	6	1	1	New_Near_Lehigh	30102306	37.2957	-121.9985
6085	99007	7	1	1	New_Gilroy	30102306	36.9939	-121.5573

CALPUFF Results

The results of the CALPUFF modeling are shown in Figure 3. The top graph shows the maximum SO_4 concentration predicted by CALPUFF over the entire modeled domain for each day of 2012 for both the base case (orange) and modified case (blue). (Note that the location of the maximum modeled concentration may differ from day to day.) The bottom graph shows the maximum difference between the modified case and the base case for each day. The difference represents the impact predicted by the model resulting from the additional SO_2 emissions in the modified

case. The modeled increase in SO_4 concentrations corresponds to the predicted increase in $PM_{2.5}$ concentrations, as SO_4 is the principal constituent of $PM_{2.5}$ that is generated from SO_2 emissions.

As Figure 3 shows, the largest predicted increases in SO_4 concentrations reach up to nearly 0.7 $\mu g/m^3$ during two episodes in January and late November. This is about half of the threshold level of 1.3 $\mu g/m^3$ at which a modeled impact would be considered significant, indicating that even with the very conservative (high) SO_2 increases assumed in the modified case scenario, CALPUFF results indicate that maximum incremental impacts from additional SO_2 emissions during winter $PM_{2.5}$ episodes would be well below a significant $PM_{2.5}$ contribution.

The spatial distribution of the modeled impacts around the Bay Area is shown in Figure 4. The top panel in Figure 4 shows a spatial (gridded isopleth) plot of the modeled 24-hour SO_4 impacts on January 4, the day of peak SO_4 impact. The maximum SO_4 impact of 0.68 $\mu g/m^3$ occurs in a small area of western Contra Costa County due to industrial sources in that region. The bottom panel of Figure 4 is a similar plot for SO_2 impacts. It shows the spatial distribution of modeled 24-hour SO_2 impacts on November 2, the day of peak SO_2 impact.

Figure 5 shows the maximum SO_4 and SO_2 impacts predicted for each grid cell throughout the region over the entirety of the modeling period. Note that in this type of plot, the maximum modeled impacts in different grid cells may occur on different dates, and the maximum SO_4 and SO_2 impacts in a given cell may occur on different dates. The highest SO_4 impact of 0.68 $\mu g/m^3$ on January 4 in western Contra County seen in Figure 4 remains the same, but the surrounding areas show higher impacts than in Figure 4 because this plot shows the highest impact of any day throughout the year, not just the impact on January 4. Around the Bay Area, the maximum modeled SO_4 impact for the year is typically in the range of 0.4-0.5 $\mu g/m^3$.

Figure 3:

Modeled $PM_{2.5}$ Impacts From High SO_2 Emissions Growth Scenario

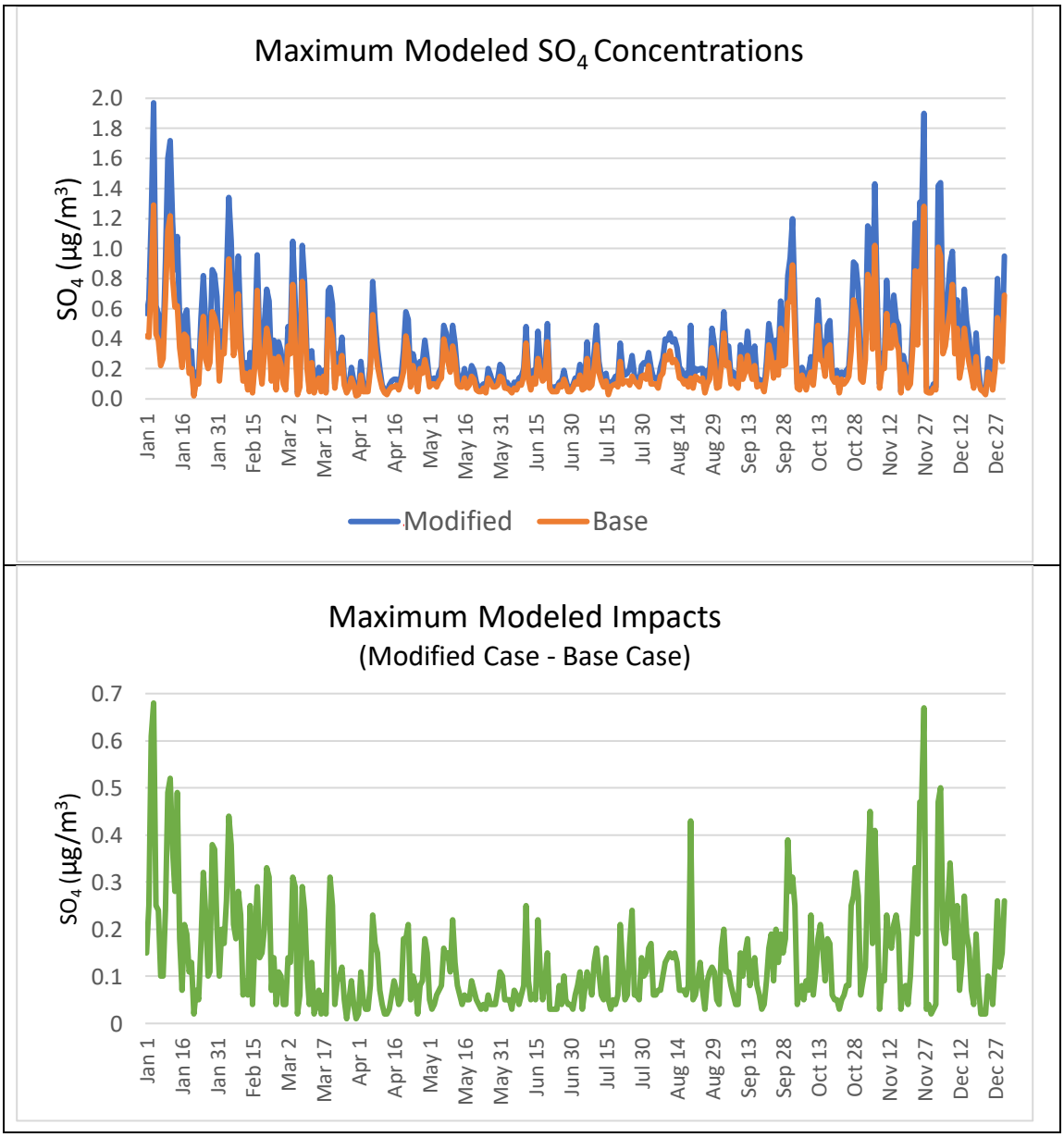


Figure 3 shows the CALPUFF modeling results. The top graph shows the maximum SO_4 concentration predicted by CALPUFF throughout the entire modeled domain for each day of the year for both the base case (orange) and modified case (blue). The bottom graph shows the maximum difference between the modified case and base case for each day, which represents the maximum modeled impact for that day.

Figure 4:
Spatial Distribution of Modeled Impacts On SO_4 (top) and SO_2 (bottom) on Highest-Impact Days

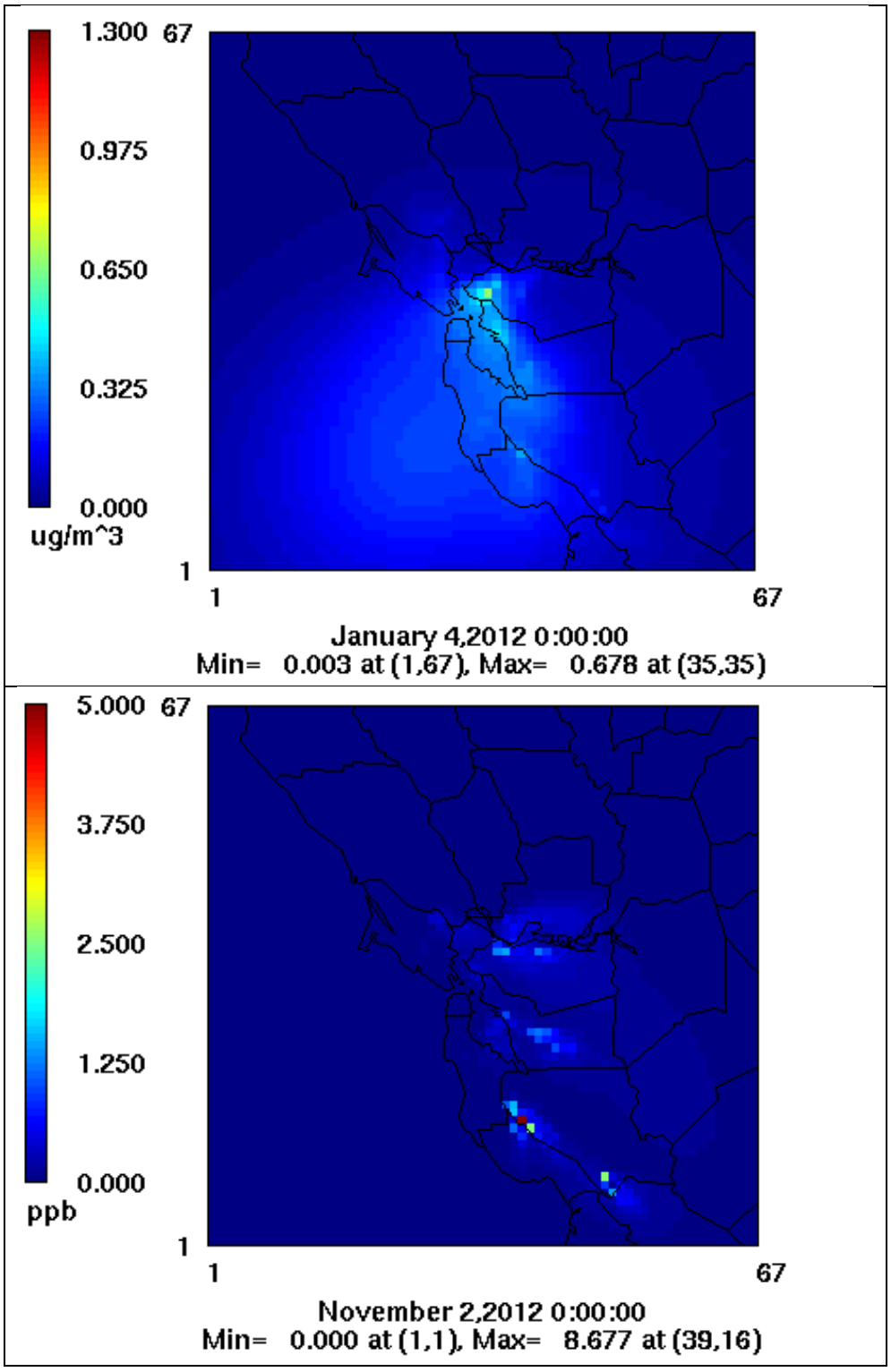


Figure 4 shows the spatial distribution of 24-hour SO_4 difference between the base case and modified scenarios on January 4, 2012 (top), and the 24-hour SO_2 difference on November 2, 2012 (bottom).

Figure 5:

Maximum Modeled Impacts In Each Grid Cell For SO_4 (top) and SO_2 (Bottom)

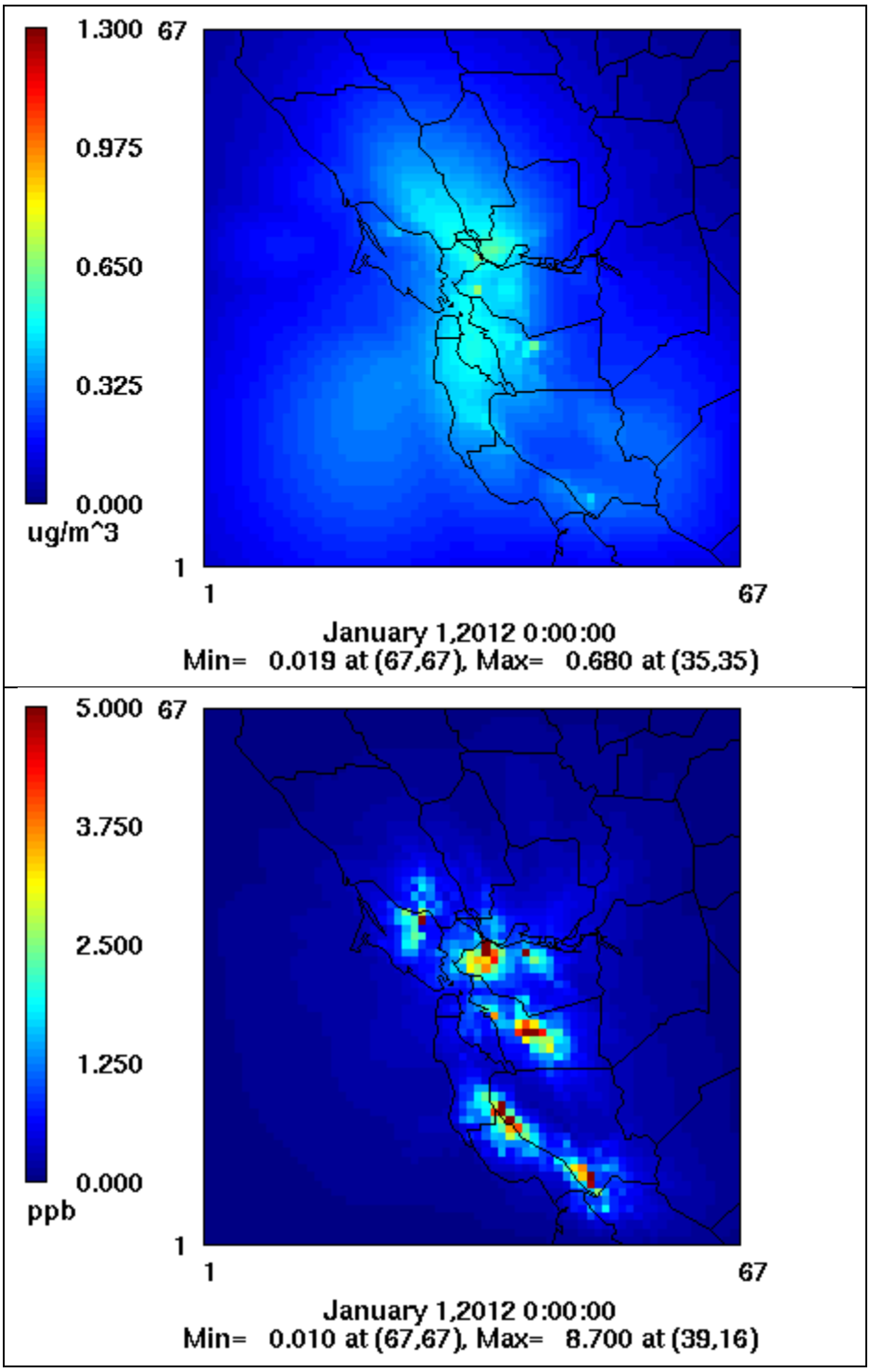


Figure 5 shows the maximum difference between the base case and modified case scenarios over the course of the entire year for each grid cell, for SO_4 (top) and SO_2 (bottom).

4.2 CMAQ Modeling

CMAQ Model Runs

CMAQ version 5.0.2 was run on a single domain with 4 km horizontal grid spacing and 15 vertical layers extending to approximately 16 km above terrain elevation. This domain was established for the 2000 Central California Ozone Study and has been used by various agencies including the CARB and the San Joaquin Valley Air Pollution Control District. CMAQ employed the SAPRC99 gas-phase photochemical mechanism in conjunction with the AE5 aerosol treatment, which includes homogeneous (gas-phase) and heterogeneous (aqueous) inorganic and organic aerosol production and gas-particle partitioning. The performance of CMAQ in replicating observed patterns of ozone, $PM_{2.5}$ and precursors throughout the Bay Area has been rigorously evaluated as part of the Air District's 2017 Clean Air Plan.[4]

Meteorological inputs to CMAQ were prepared using the Weather Research and Forecasting (WRF) model. WRF was run with three nested domains: (1) an outer domain covering the entire western US and the eastern Pacific Ocean at 36 km resolution; (2) an intermediate domain covering all of California and a portion of Nevada at 12 km resolution; and (3) an inner domain extending just beyond the CMAQ grid at 4 km resolution. All three domains included 50 vertical layers to approximately 16 km above terrain elevation, consistent with CMAQ. WRF was run in six-day segments, where the last day of each segment overlapped with the first day of the following segment; the first day of each segment was restricted to WRF spin-up from initial conditions and was not used for air quality modeling. Various model options were tested and a combination of the best-performing options was selected for the final simulation. Four-dimensional data assimilation was used to bring simulations toward observations. A comprehensive model evaluation was conducted and documented as part of the Air District's 2017 Clean Air Plan.

The 2012 emissions inventory was obtained from the CARB and processed using the Sparse Matrix Operator Kernel Emissions (SMOKE) system to prepare hourly emissions inputs for CMAQ. CMAQ boundary conditions (BCs) were generally developed from publicly-available 6-hourly MOZART global chemistry model output specific to the year 2012. However, BCs for ozone were developed from monthly-average ozonesonde measurements collected at Trinidad Head, California, and BCs for six species not treated by MOZART were based on CMAQ default BC profiles. Emissions data and global chemistry data were processed to the 4-km CMAQ grid and speciated to support SAPRC99/AE5 chemistry in CMAQ.

CMAQ was run for two winter months of 2012 (January 2-31 and December 2-30) to comprehensively simulate emissions, dispersion, removal and chemistry of all $PM_{2.5}$ components and associated precursors from all anthropogenic, biogenic and background sources throughout the region. These simulations specifically address conditions that result in exceedance-level $PM_{2.5}$ concentrations in the Bay Area and Central California. The base case scenario modeled the existing 2012 inventory, while the modified case scenario included the 20% increase in SO_2 for the 129 existing sources emitting at least 4 TPY and the 7 hypothetical new major sources, as

[4] The 2017 Clean Air Plan is available online at: www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en.

described above. The additional emissions and stack data for the hypothetical new sources were incorporated into the Air District's 2012 modeling inventory and processed through SMOKE to generate the modified case scenario inputs for CMAQ.

Both SO_4 and total $PM_{2.5}$ concentrations were modeled. SO_4 is the primary driver of impacts on $PM_{2.5}$ concentrations that result from SO_2 emissions, because SO_2 is converted in the atmosphere into SO_4, which is a constituent of $PM_{2.5}$ as explained above. But some of the SO_4 may subsequently react with ammonia to form ammonium sulfate, which is also a constituent of $PM_{2.5}$. The CMAQ model is capable of modeling the contributions from this formation of ammonium sulfate as well, and so the Air District evaluated both SO_4 and total $PM_{2.5}$ in its analysis. As the results set forth below show, however, in most cases SO_4 accounts for nearly all of the modeled impacts, with the modeled impacts on total $PM_{2.5}$ concentrations (which includes the impacts from conversion to ammonium sulfate) showing only a slight increase over the modeled impacts on SO_4 concentrations.

CMAQ Results

The results of the CMAQ modeling analysis are shown in Figures 6 and 7. Figure 6 shows the results for SO_4, and Figure 7 shows the results for total $PM_{2.5}$. As with the CALPUFF results in Figure 3, the top graphs in Figures 6 and 7 show the maximum modeled concentrations for each day during the modeled period for both the base case (orange) and the modified case (blue). The results shown are from a domain consistent with the CALPUFF grid centered on the Bay Area for each day of January and December 2012. (Note again that the locations of the maximum concentrations may differ from day to day.) The bottom graphs shows the maximum difference between the modified case and base case for each day, which represents the maximum increase in 24-hour concentrations of SO_4 and total $PM_{2.5}$, respectively, predicted by the model for that day as a result of the SO_2 emissions increases in the modified case.

Figure 6 shows predicted increases in SO_4 concentrations reaching up to a maximum of nearly 0.5 $\mu g/m^3$, and Figure 7 shows predicted increases in total $PM_{2.5}$ reaching up to a maximum of nearly 0.6 $\mu g/m^3$. These maximum modeled impacts are consistent with although smaller than the CALPUFF signal. This level of impact is less than half of the threshold level of 1.3 $\mu g/m^3$ at which a modeled impact would be considered significant, indicating that even with the very conservative (high) SO_2 increases included in the modified case scenario, CMAQ predicts that maximum incremental $PM_{2.5}$ impacts from potential future SO_2 emissions growth would be well below a significant $PM_{2.5}$ contribution.

Note also that Figures 6 and 7 show several features that clearly differ from the CALPUFF results. First, CMAQ-simulated total SO_4 concentrations are much higher than the results from the CALPUFF modeling, because CMAQ includes all local, regional and background sources of SOx, whereas CALPUFF modeled only point-source contributions. Second, the temporal patterns of the CMAQ results differ from CALPUFF; this is likely the result of more complex interactions between dispersion, chemistry, and the interplay among local, regional and background sources of SOx that CMAQ takes into account.

Figure 6:
Modeled SO_4 Impacts From High SO_2 Emissions Growth Scenario

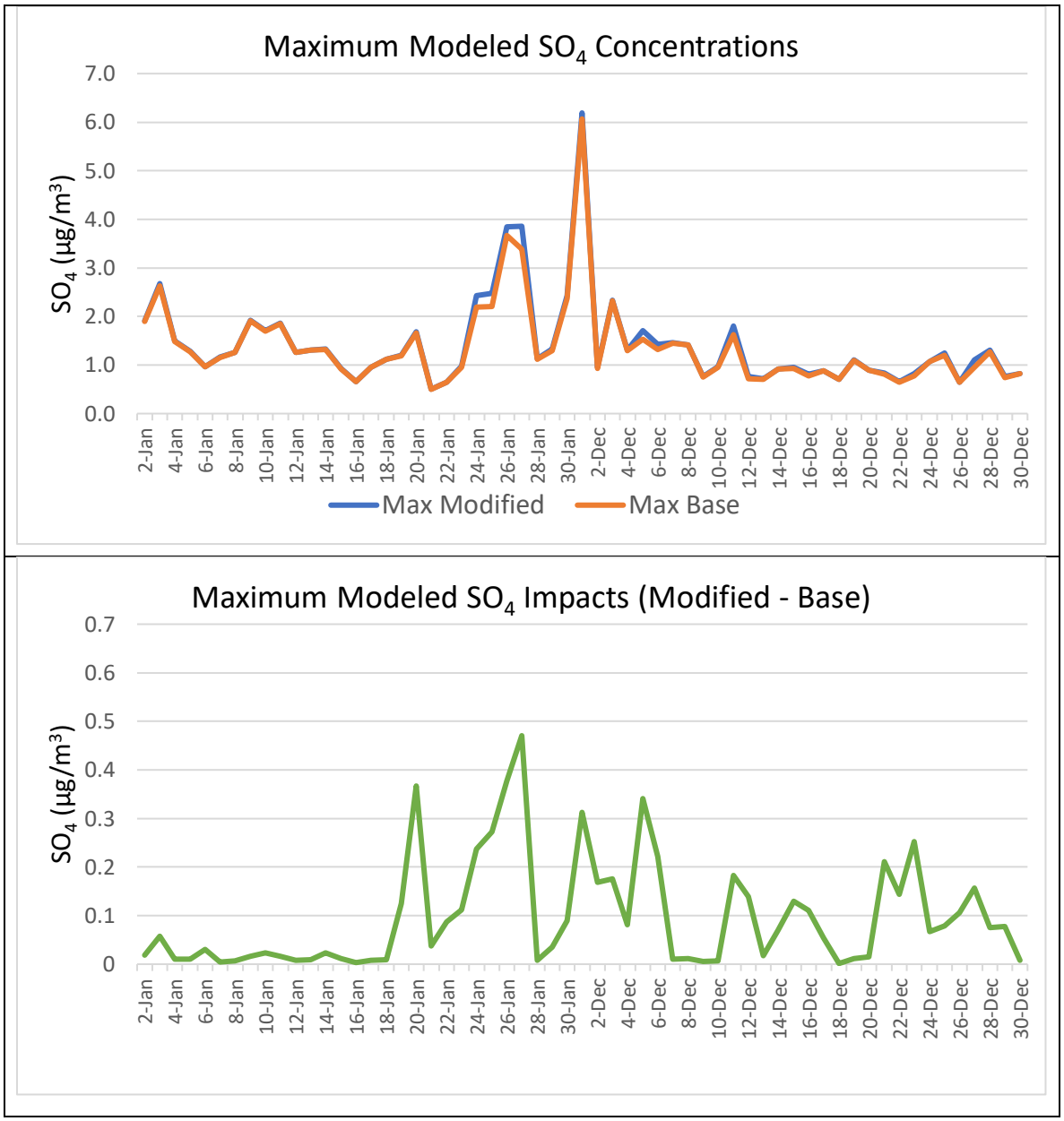


Figure 6 shows the results of the CMAQ modeling analysis for SO_4. The top graph shows the maximum SO_4 concentration predicted by CMAQ for each day of January and December 2012 for both the base case and modified case. The bottom graph shows the maximum difference in SO_4 concentrations between the base case and modified case for each day modeled.

Figure 7:
Modeled Total $PM_{2.5}$ Impacts From High SO_2 Emissions Growth Scenario

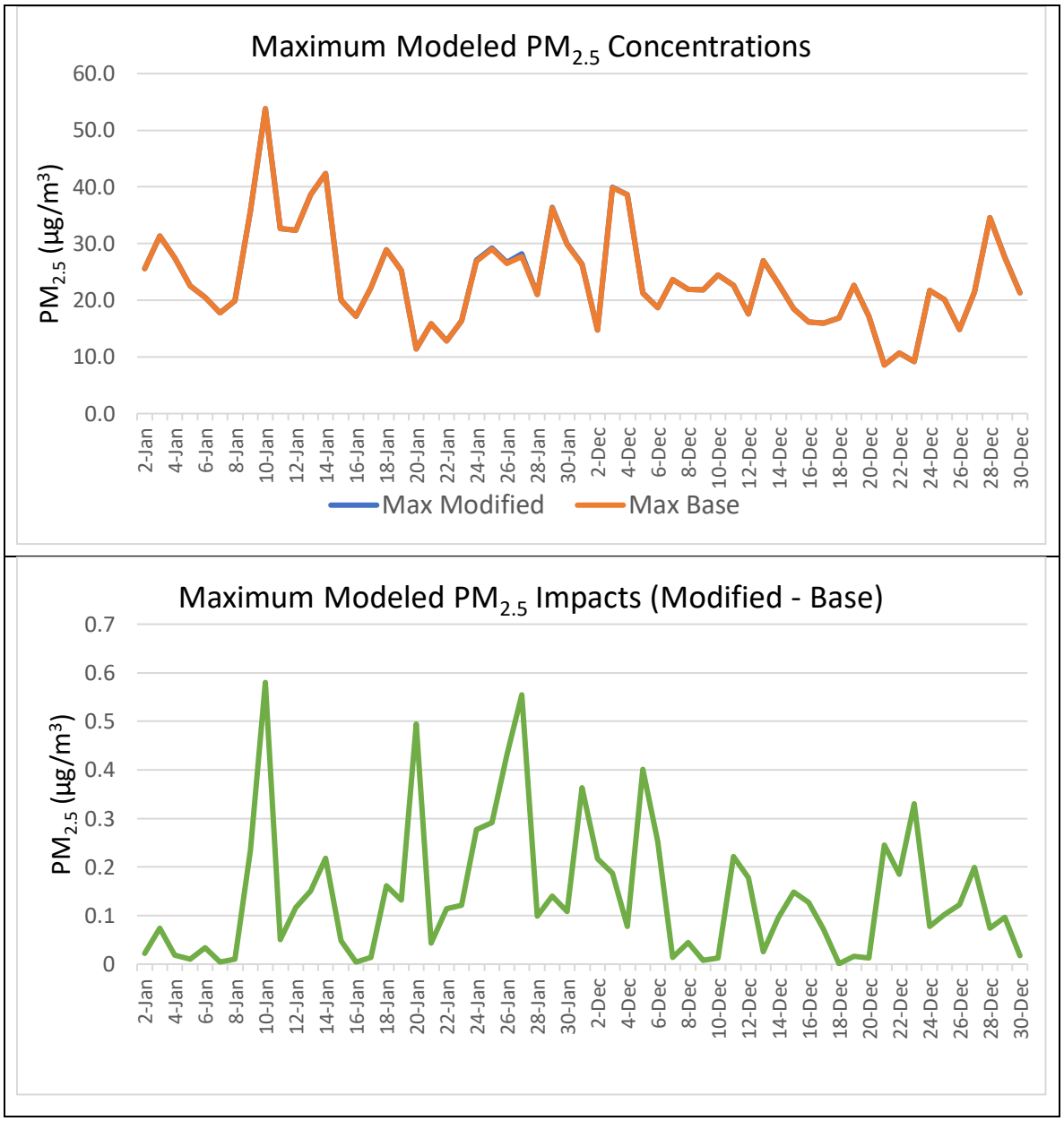


Figure 7 shows the results of the CMAQ modeling analysis for total $PM_{2.5}$. The top graph shows the maximum $PM_{2.5}$ concentration predicted by CMAQ for each day of January and December 2012 for both the base case and modified case. The bottom graph shows the maximum difference in $PM_{2.5}$ concentrations between the base case and modified case for each day modeled.

Comparing the modeled SO_4 impacts in Figure 6 (bottom graph) to the modeled total $PM_{2.5}$ impacts in Future 7 (bottom graph), they generally track each other closely, with $PM_{2.5}$ impacts consistently higher than SO_4 impacts by 0.05-0.1 $\mu g/m^3$ due to the fact that the total $PM_{2.5}$ results reflect the formation of ammonium sulfate in addition to SO_4, as noted above. The two notable exceptions are January 10 and 14, where the model shows total $PM_{2.5}$ impacts that do not have a large SO_4 component, according to the model.

The spatial distribution of the modeled impacts around the Bay Area is shown in Figure 8. These plots show a subset of the CMAQ grid covering the Bay Area consistent with the CALPUFF grid, with predicted 24-hour SO_4 impacts (top plot) and total $PM_{2.5}$ impacts (bottom plot) for January 27, the day with the highest modeled SO_4 impact. The maximum impacts are similar to the maximum impact predicted by CALPUFF, but the day on which the peak impact occurs is different from the peak CALPUFF day, and as a result the spatial patterns are somewhat different.

The spatial distribution of 24-hour SO_2 impacts is shown in Figure 9 for January 24, the day of peak SO_2 impact. The peak SO_2 impact of 1.625 ppb is lower than peak SO_2 impact from CALPUFF by more than a factor of 5. Peak SO_2 impacts occur along the Suisun Bay where many existing and hypothetical new sources are located.

Figure 8:
Spatial Distribution of Modeled Impacts on SO_4 (top) and Total $PM_{2.5}$ (bottom)
On Highest-Impact Day

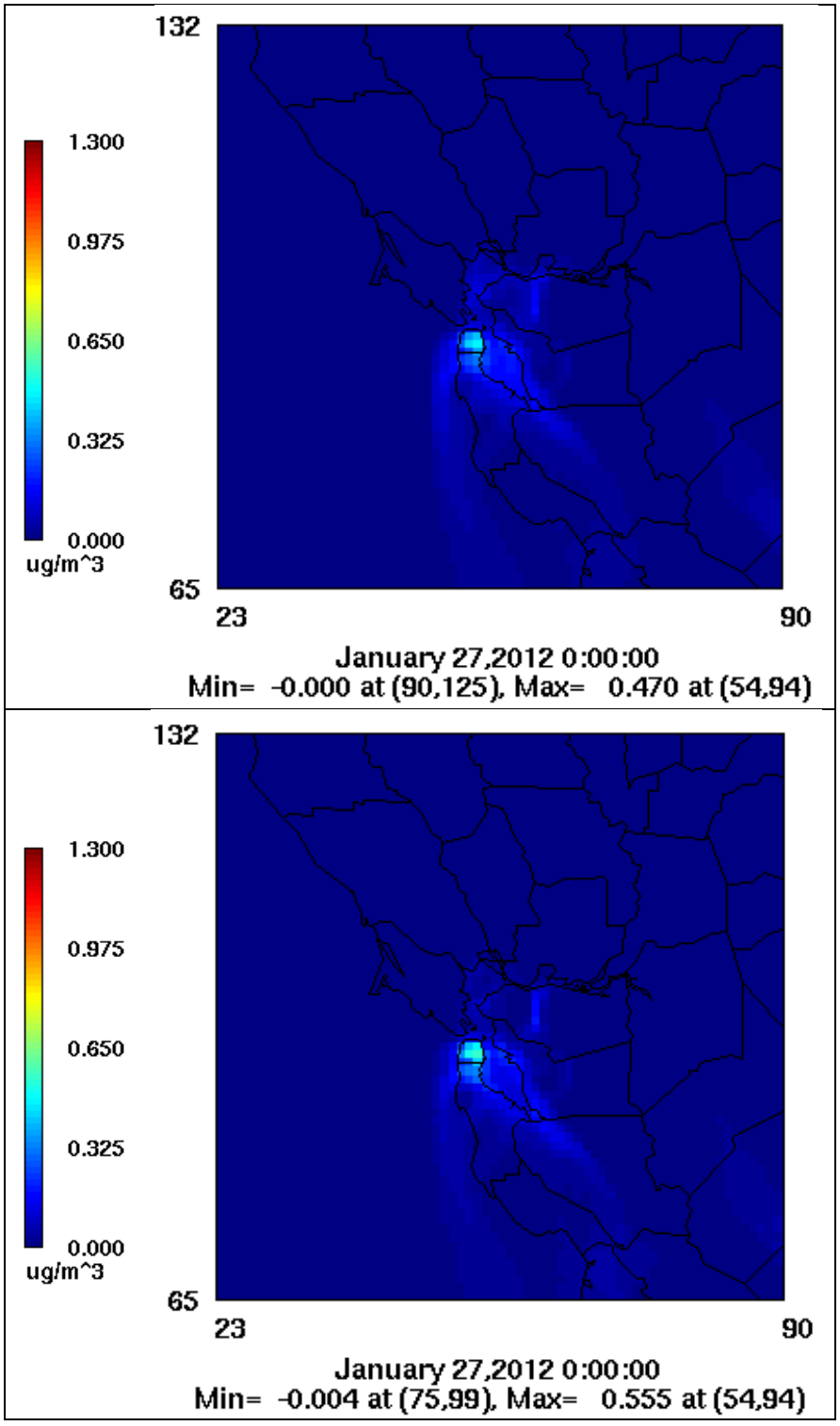


Figure 8 shows the spatial distribution of 24-hour SO_4 and total $PM_{2.5}$ differences between the base case and modified case scenarios on January 27, 2012, the day with the highest predicted impact.

Figure 9:
Spatial Distribution of Modeled SO_2 Impacts On Day Of Highest Impact

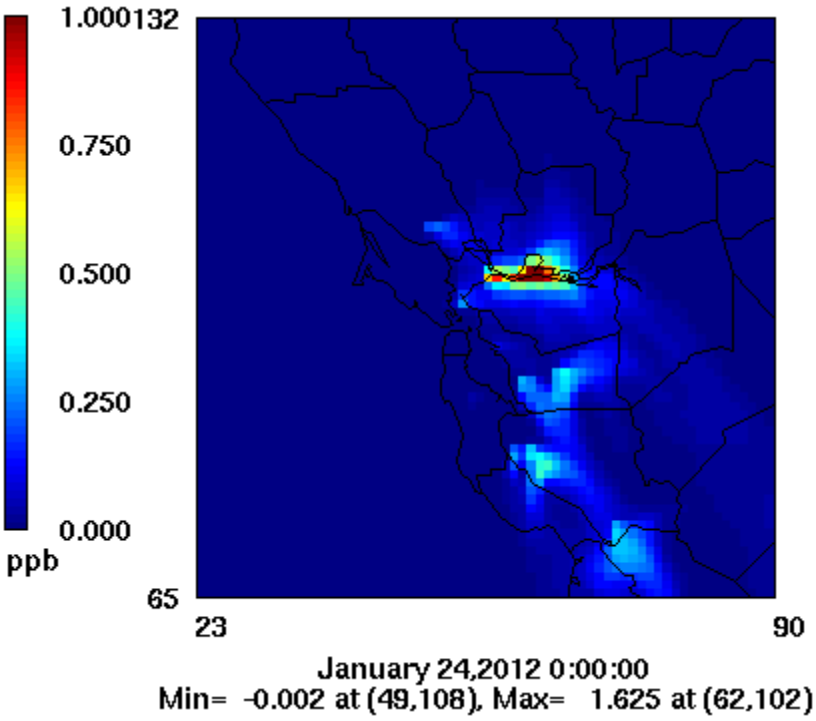


Figure 9 shows the spatial distribution of 24-hour SO_2 difference between the base case and modified case scenarios on January 24, 2012.

Figure 10 shows the maximum SO_4 and total $PM_{2.5}$ impacts predicted for each location (grid cell) throughout the region over the entirety of the January and December 2012 modeling period. These plots are similar to the corresponding plots from CALPUFF in Figure 5. As was the case with the CALPUFF plots in Figure 5, the points of maximum impact remain the same as Figure 8, but the surrounding areas show somewhat higher impacts than in Figure 8 because the plots show the highest impacts from any day during the modeling period, not just the impacts on January 27, the day shown in Figure 8.

The spatial distribution of maximum simulated SO_4 impacts between CALPUFF (Figure 5, top) and CMAQ (Figure 10, top) are quite different, given different models, time periods, and chemistry. As opposed to the more diffuse patterns evident in the CALPUFF results, the CMAQ results shown in the top plot in Figure 10 show much more isolated and localized impacts and sharper gradients. Maximum impacts in western Contra Costa County seen in the CALPUFF results are practically non-existent in the CMAQ results; this could be related to the fact that SO_2 sources in that area are primarily associated with refineries, with high stack releases, and so vertical stratification simulated by CMAQ's vertical layer structure may prevent SOx mass from reaching the surface more so than CALPUFF's vertical dispersion rates. The difference in spatial patterns could also be related to the heterogeneous patterns of clouds and fog, where the treatment of clouds and aqueous PM interactions are better treated by CMAQ than in CALPUFF.

Figure 10:

Maximum Modeled Impacts In Each Grid Cell For SO_4 (top) and $PM_{2.5}$ (Bottom)

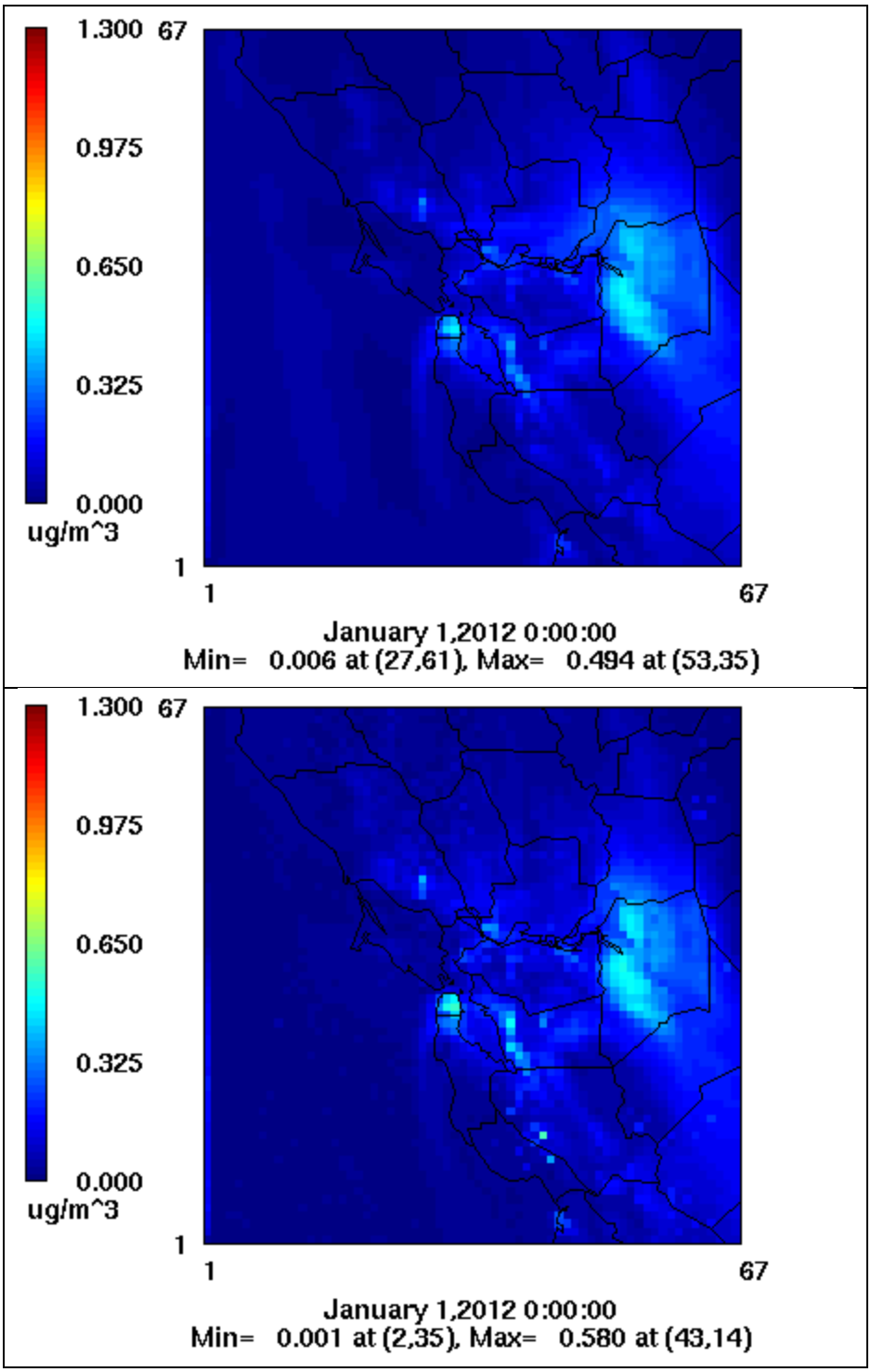


Figure 10 shows the maximum difference between the base case and modified case scenarios in each grid cell during the entirety of the January and December modeling periods for 24-hour SO_4 (top) and $PM_{2.5}$ (bottom).

With respect to maximum $PM_{2.5}$ impacts shown in the bottom plot in Figure 10, the impact patterns correlate directly with the SO_4 impacts in the top plot, but the $PM_{2.5}$ concentrations are slightly higher across the domain. This is attributed to the additional ammonium sulfate associated with the small increases in sulfate, which is not shown in the SO_4 plot. Notably, certain localized $PM_{2.5}$ impacts appear where the associated SO_4 impacts are much smaller or absent. This is particularly true for $PM_{2.5}$ peaks outside the urbanized Bay Area where larger sources of agricultural ammonia exists. Again, maximum $PM_{2.5}$ impacts in the Bay Area remain below 0.6 $\mu g/m^3$.

Figure 11:
Maximum Modeled SO_2 Impacts For Each Grid Cell

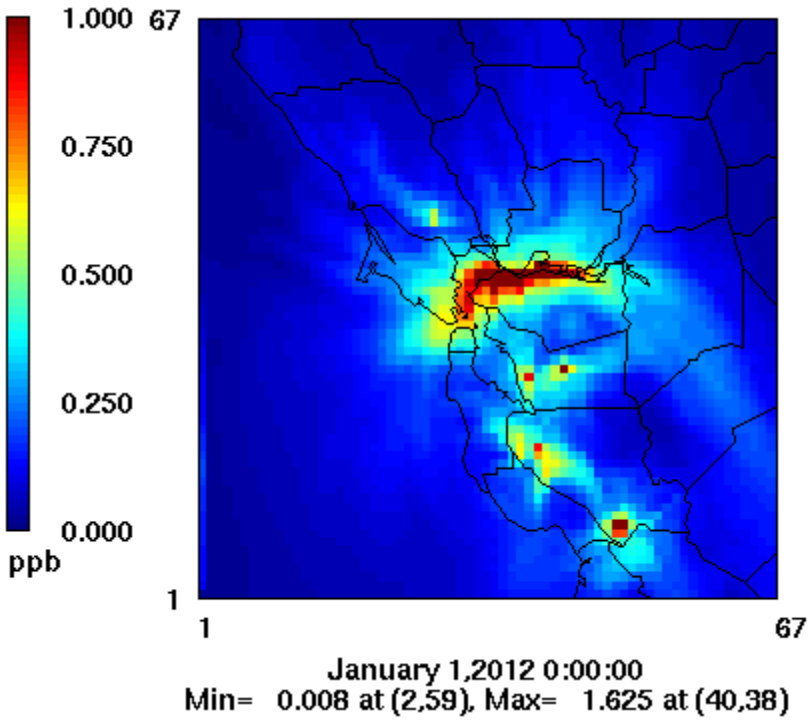


Figure 11 shows the maximum difference in modeled 24-hour SO_2 concentrations between the base case and modified case scenarios for each grid cell throughout the entire modeling period.

The highest modeled SO_2 impact at each grid cell out of all of the days in the modeling period are shown in Figure 11. Note that the maximum SO_2 impact in a given grid cell may occur on a different date than the maximum SO_4 and total $PM_{2.5}$ impacts shown in Figure 10. For SO_2, the CMAQ pattern of maximum impact agrees better with CALPUFF results (Figure 5, bottom) given that this is a directly-emitted precursor, and so the maximum impacts remain near their sources. However, CMAQ-predicted SO_2 impacts are much lower than CALPUFF-predicted impacts. This is likely related to some extent to the fact that in CMAQ, SO_2 emissions are instantly diluted to grid volumes, whereas in CALPUFF they are confined to smaller puff volumes. As mentioned previously, vertical stratification simulated in CMAQ may prevent SOx mass from reaching the surface more so than CALPUFF vertical dispersion rates.

5. CONCLUSIONS

A modeling analysis was conducted in conformance with EPA's requirements for NNSR precursor demonstrations in 40 CFR Section 51.1006(a)(3) to address the sensitivity of $PM_{2.5}$ concentrations in the San Francisco Bay Area to potential increases in SO_2 emissions from major point sources within the region. The analysis was conducted according to a Protocol developed in conjunction with EPA Region 9 and OAQPS Staff, and consistent with EPA's draft $PM_{2.5}$ Precursor Demonstration Guidance.

The modeling analysis evaluated the potential impacts on 24-hour-average $PM_{2.5}$ concentrations in the Bay Area from a conservative high-emissions-growth scenario. This scenario assumed that all point sources currently emitting 4 TPY or more SO_2 would increase their emissions by 20%, and also that 7 new major sources would be built emitting 370 TPY each. This level of emissions growth is not expected, but it was used to ensure that the analysis represented a reasonable "worst-case" scenario.

The analysis compared a "base case" modeled using existing emissions and a "modified case" modeled based on the conservative emissions growth scenario. The two cases were modeled using CALPUFF and CMAQ models, with CALPUFF applied over the entirety of 2012 and CMAQ applied over December and January to explicitly treat detailed chemistry and transport during exceedance-level $PM_{2.5}$ events, which predominantly occur during those months. The predicted impacts from the assumed growth in SO_2 emissions were derived based on the difference between the modeled concentrations from the base case scenario and the modeled concentrations from the modified case scenario.

The CALPUFF and CMAQ analyses were similar in their predicted maximum impacts on 24-hour-average $PM_{2.5}$ concentrations. The maximum modeled CALPUFF impact was just under 0.7 $\mu g/m^3$, and the maximum modeled CMAQ impact was just under 0.6 $\mu g/m^3$. The two models showed different temporal and spatial patterns of impacts, owing to the different source mixtures, chemistry, and heterogeneity addressed by CMAQ and CALPUFF. The results of both analyses are well below the 1.3 $\mu g/m^3$ level at which the impact would be considered significant.

This modeling analysis demonstrates that SO_2 emissions from major sources in the Bay Area will not contribute significantly to $PM_{2.5}$ levels exceeding the 24-hour $PM_{2.5}$ NAAQS, even if the region were to experience a high level of SO_2 emissions growth. The analysis therefore provides a basis for EPA to make a determination under 40 CFR Section 51.165(a)(13) that the Air District's NSR permitting program does not need to apply the Clean Air Act's NNSR requirements to SO_2.

In addition, the performance of the CMAQ model was evaluated. The model was found to perform well in replicating spatial and day-to-day patterns of observed SO_4 concentrations at monitoring locations throughout the Bay Area, with a slight tendency for over prediction. The good performance exhibited by CMAQ supports the focus on absolute modeled impacts in this demonstration, as opposed to relative impacts.

Appendix A:

Protocol For Demonstration of SO_2 Precursor Contributions to $PM_{2.5}$ in the San Francisco Bay Area

This document sets forth a protocol under which the Bay Area Air Quality Management District (District) will evaluate of the sensitivity of fine particulate matter ($PM_{2.5}$) levels within the San Francisco Bay Area to potential increases in sulfur dioxide (SO_2) emissions from point sources within the region. The purpose of this evaluation is to support a demonstration that SO_2 emissions do not contribute significantly to $PM_{2.5}$ levels exceeding the $PM_{2.5}$ National Ambient Air Quality Standards (NAAQS) under 40 CFR section 51.1006(a)(3). The District intends to submit this demonstration to EPA to support an exemption from the requirement to regulate SO_2 under the District's Nonattainment New Source Review (NNSR) requirements pursuant to Section 189(e) of the Clean Air Act and 40 CFR section 51.165(a)(13).

INTRODUCTION

The San Francisco Bay Area is a designated nonattainment area for the 24-hour fine particulate matter ($PM_{2.5}$) National Ambient Air Quality Standard (NAAQS). The Bay Area Air Quality Management District has jurisdiction over permitting and controlling stationary source emissions in the nonattainment area. The District is preparing to demonstrate that sulfur dioxide (SO_2) precursor emissions from major point sources do not currently, and will not under reasonably conservative growth scenarios, contribute significantly to $PM_{2.5}$ exceedances in the Bay Area so that SO_2 may be excluded as a $PM_{2.5}$ precursor from the District's permitting program under the NNSR requirements.

40 CFR section 51.1006(a)(3) sets forth EPA's requirements for making $PM_{2.5}$ precursor demonstrations[1]. The rule provides for agencies to demonstrate that a specific precursor (SO_2, nitrogen oxides [NOx], volatile organic compounds [VOC] or ammonia [NH_3]) does not contribute significantly to $PM_{2.5}$ levels exceeding the NAAQS within their nonattainment area. If approved, the agency's NNSR program may exclude that precursor under 40 CFR section 51.165(a)(13).

The US Environmental Protection Agency (EPA) has issued draft Demonstration Guidance[2] to assist air agencies in developing precursor demonstrations for $PM_{2.5}$ under Section 51.1006. The District's SO_2 demonstration will involve modeling and analyses in accordance with Section 6 of the Demonstration Guidance (NNSR Precursor Demonstration), which outlines procedures for examining and documenting model sensitivity to changes in emissions. The District has previously modeled $PM_{2.5}$, SO_2 and SO_2 contributions to $PM_{2.5}$ sulfate within the Bay Area for the year 2012.

[1] 40 CFR section 51.1006 and related provisions addressing precursor demonstrations were adopted in EPA's $PM_{2.5}$ SIP Requirements Rule, Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements, 81 FR 58010 (Aug. 24, 2016).

[2] "$PM_{2.5}$ Precursor Demonstration Guidance", U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Air Quality Assessment Division and Air Quality Policy Division, Research Triangle Park, NC (EPA-454/P-16-001, November 2016).

For the purpose of the precursor demonstration, the District will conduct new simulations using the same modeling system but with increased SO_2 emissions from existing and new hypothetical major point sources representing conservatively large growth[3]. All modeling and analyses will be conducted in accordance with EPA's Demonstration Guidance and discussions with EPA staff from Region 9 and the Office of Air Quality Planning and Standards (OAQPS).

This demonstration protocol first presents the purpose of the $PM_{2.5}$ precursor demonstration project, followed by a detailed methodology of the modeling and analysis. The discussion includes the District's rationales for the increase in major point source SO_2 emissions to be modeled; for the locations of the hypothetical point sources and their emission rates and stack parameters; for the choice of modeling year and the models to be employed; and for the threshold below which the contribution of SO_2 emissions to $PM_{2.5}$ levels exceeding the NAAQS will be considered less than significant. Additional information on the characterization of Bay Area $PM_{2.5}$ emissions and modeling approach is included at the end of this report.

PURPOSE OF THE SO_2 DEMONSTRATION

The District updated its New Source Review rule in District Regulation 2, Rule 2, in 2012 to add $PM_{2.5}$ as a pollutant subject to the rule's NNSR requirements. One outstanding issue from that process concerns whether the District must also subject SO_2 to the NNSR requirements as a $PM_{2.5}$ precursor. EPA's NNSR regulations require that $PM_{2.5}$ precursors such as SO_2 must be subject to NNSR requirements unless the permitting authority can demonstrate that emissions of the precursor from major sources in the region do not contribute significantly to any $PM_{2.5}$ levels exceeding the NAAQS. (See 40 CFR § 51.165(a)(13).) The purpose of this SO_2 demonstration is to make such a showing with respect to SO_2 in the San Francisco Bay Area.[4]

In preparation of the $PM_{2.5}$ precursor demonstration for SO_2, the District met several times with EPA Region 9 and OAQPS in early 2017 to discuss the rationale and approach. This protocol formalizes and builds from that information. The presentation material from those meetings is appended to this protocol.

As described in the characterization section of this protocol, measurements of SO_4 throughout the Bay Area are consistently below 1 $\mu g/m^3$, fairly independent of monitoring site, season and year. The highest SO_4 concentrations approaching 1 $\mu g/m^3$ occur during warm months, whereas the lowest concentrations (<0.5 $\mu g/m^3$) occur during the winter months when the highest exceedance-level $PM_{2.5}$ is measured. Therefore, SO_4 does not contribute significantly to $PM_{2.5}$

[3] In this context, "conservative" means that we have estimated potential new emissions growth on the very high side of what is reasonably expected. EPA's draft Demonstration Guidance advises that the demonstration should evaluate more emissions growth "than what is merely 'likely' to occur in the area," so that the NAAQS will be protected even if growth is higher than actually anticipated.

[4] Note that there are not currently any $PM_{2.5}$ levels in the Bay Area in violation of the NAAQS. EPA has determined this to be the case in its *Determination of Attainment for the San Francisco Bay Area Nonattainment Area for the 2006 Fine Particle Standard*, 78 FR 1760 (Jan. 9, 2013), in which EPA found that "the San Francisco Bay Area . . . has attained the 2006 24-hour $PM_{2.5}$ NAAQS . . . ." By definition, therefore, there are no major sources of SO_2 that are contributing significantly to any $PM_{2.5}$ levels exceeding the NAAQS. The focus of this demonstration is on what could happen in future, if there is significant growth in SO_2 emissions (which the District does not anticipate, but which cannot be ruled out).

levels exceeding the NAAQS in the Bay Area. Even if SO_4 concentrations were doubled, the incremental $PM_{2.5}$ increase would likely be less than the 1.3 $\mu g/m^3$ significant impact threshold recommended by EPA in the draft Demonstration Guidance. Recent modeling conducted by the District indicates that a 20% SO_2 reduction results in less than a 0.04 $\mu g/m^3$ SO_4 impact.

According to the District's 2012 modeling inventory, SO_2 emissions in the Bay Area total 26.9 tons per day (TPD). This is comprised of 17.7 TPD from stationary point sources, 0.4 TPD from stationary area sources, 6.3 TPD from ocean-going vessels, and 2.5 TPD from mobile sources (both on- and non-road).

There are 131 permitted point sources in the Bay Area that emit more than 4 tons per year (TPY) of SO_2; together they contribute 16.7 TPD or over 94% of all stationary point source SO_2 emissions. For the purpose of the demonstration, conservative growth will be applied to these 131 sources in addition to 7 hypothetical new sources.

SO_2 DEMONSTRATION APPROACH

Overview

This SO_2 precursor demonstration will evaluate the extent to which ambient $PM_{2.5}$ concentrations in the Bay Area are sensitive to potential SO_2 emission increases from existing and potential new major stationary sources. To do so, the District will model increases in SO_2 emissions from existing and hypothetical new major point sources. These increases will include two components:

1) A 20% increase in SO_2 emissions from the 131 existing point sources in the Bay Area that emit at least 4 TPY;
2) Seven hypothetical new major point sources located throughout the Bay Area, each emitting 370 TPY of SO_2, based on an analysis of the top 30 facilities across California that emit more than 100 TPY.

The total increase in SO_2 emissions resulting from these changes is 3,780 TPY or 10.4 TPD. This represents a 38% increase in Bay Area total SO_2 and a 59% increase in Bay Area point source SO_2. The District does not anticipate that emissions increases of this magnitude will actually occur, but it will use this approach as a conservative "worst case" approach in keeping with EPA's draft Demonstration Guidance.

To model the $PM_{2.5}$ impacts of these emissions increases, the District will build off of work that the District has previously done in modeling $PM_{2.5}$, SO_2 and SO_2 contributions to $PM_{2.5}$ for the year 2012. Two types of models were used: the CMAQ photochemical grid model applied over January and December 2012, and the CALPUFF plume model applied over the entirety of 2012. The District will conduct additional simulations of the alternative SO_2 emission scenario outlined above, assuming a 20% increase from the 131 existing point sources over 4 TPY and 7 new major sources emitting 370 TPY. The District will compare the modeled $PM_{2.5}$ concentrations under the "base case" (without the increases) and the "modified case" (with the increases) to assess the sensitivity of $PM_{2.5}$ concentrations in the Bay Area to these hypothetical SO_2 emissions increases.

The project will follow Section 6 of EPA's Demonstration Guidance on assessing source-specific significant impact thresholds, as well as District and EPA discussions on the approach.

In developing the protocol for this sensitivity analysis, the District has focused on three questions identified in EPA's draft Demonstration Guidance:

1) What amount of emissions increase should be examined?
2) Where should precursor emissions increases be located?
3) What concentration threshold determines an insignificant modeled 24-hour $PM_{2.5}$ change?

The District's rationale with respect to each of these issues is discussed below.

Rationale for Amount of Emission Increases

The emission increases that the District is proposing to use for the SO_2 precursor demonstration present a reasonably conservative "worst case" scenario for the Bay Area.

With respect to the 20% increase in emissions for the 131 sources that currently emit more than 4 TPY SO_2, this is a conservative estimate because actual emissions of SO_2 from these facilities have decreased over the last decade.

With respect to the seven new hypothetical major SO_2 sources, the District has followed the approach suggested in the draft Demonstration Guidance and assessed what types of potential new major SO_2 sources would be most likely within the Bay Area (to the extent that any new major SO2 sources locate here at all). The District did so by evaluating the largest SO_2 major sources throughout California, based on the California Air Resources Board (CARB) 2015 point source emissions inventory. The 29 largest SO_2 sources in California that emit more than 100 TPY are listed in Table 1. The average SO_2 emission rate among these 29 sources is just under 370 TPY. Ten of these sources exist in the Bay Area, including 8 refineries, 1 cement plant and a carbon plant. These facilities existed prior to the District's permitting program, and thus their SO_2 emission rates are grandfathered. In fact, the District has never permitted a new SO_2 facility larger than 300 TPY since the inception of our permitting program in the 1970s. Any new facility would most likely be capped at less than 300 TPY due to regulations, such as state Best Available Control Technology (BACT) which is required for any new or modified SO_2 source with emissions of 10 pounds per day or more, offset requirements which apply to any proposed new or modified SO_2 source emitting more than 100 TPY, and federal Prevention of Significant Deterioration (PSD) requirements.

For example, the Bay Area cement plant emits more than 1,000 TPY, but if permitted under the current New Source Performance Standard (NSPS) of 0.4 lb SO_2/ton clinker, SO_2 emissions would be capped at 320 TPY, unless BACT was determined to be even more stringent. It is very unlikely that the District will ever permit a new petroleum refinery in the Bay Area. Very few have been permitted nationally in the past decade. The most recent example provided by EPA is for a new refinery in Yuma, Arizona. With a processing capacity of 150,000 barrels/day (typical of Bay Area refineries), the permitted SO_2 emissions rate was set at 251 TPY, well below our proposed 370 TPY hypothetical SO_2 increase for seven new sources.

Table 1. Twenty nine largest SO_2 sources in the CARB 2015 California point source emission inventory.

SIC	Type	City	District	SO_2 Emissions (TPY)
2999	Carbon Plant	**Rodeo**	**Bay Area**	**1519**
2911	Petroleum Refining	**Martinez**	**Bay Area**	**1093**
3241	Cement	**Cupertino**	**Bay Area**	**1058**
3241	Cement	Mojave	Kern County	978
2911	Petroleum Refining	**Martinez**	**Bay Area**	**962**
2911	Petroleum Refining	Carson	South Coast	503
2911	Petroleum Refining	**Richmond**	**Bay Area**	**381**
2911	Petroleum Refining	**Rodeo**	**Bay Area**	**365**
2911	Petroleum Refining	Carson	South Coast	340
2911	Petroleum Refining	Torrance	South Coast	333
3463	Nonferrous Forging	Wilmington	South Coast	329
2911	Petroleum Refining	El Segundo	South Coast	300
3221	Glass Containers	**Oakland**	**Bay Area**	**205**
2819	Inorganic Chemicals	**Martinez**	**Bay Area**	**186**
3241	Cement	Lucerne Valley	Mojave Desert	182
3221	Glass Containers	Modesto	San Joaquin Valley	182
2819	Inorganic Chemicals	**Richmond**	**Bay Area**	**174**
2911	Petroleum Refining	Wilmington	South Coast	163
2911	Petroleum Refining	Arroyo Grande	San Luis Obispo	159
1474	Potash/Soda/Borate	Trona	Mojave Desert	146
3211	Flat Glass	Kingsburg	San Joaquin Valley	144
2873	Nitrogen Fertilizers	Lathrop	San Joaquin Valley	142
4953	Refuse	Whittier	South Coast	137
2911	Petroleum Refining	Wilmington	South Coast	132
4911	Electric Generation	Trona	Mojave Desert	126
3241	Cement	Apple Valley	Mojave Desert	126
2911	Petroleum Refining	**Benicia**	**Bay Area**	**110**
3221	Glass Containers	Madera	San Joaquin Valley	106
1311	Oil & Gas	Kern County	San Joaquin Valley	104

Rationale for Locations of Emissions Increases

The District will model the 20% SO_2 emissions increases from the 131 existing sources at the locations of those existing sources. These locations are shown on the map on the left side of Figure 1, along with areas specifically zoned for industrial use. The map on the right side of Figure 1 indicates the location of the existing sources emitting over 4 TPY as resolved to the 4 km CMAQ modeling grid.

For the 7 hypothetical new SO_2 sources, the locations of these sources are indicated by the black squares on the map on the right side of Figure 1. The locations of these sources were carefully selected to cover the entire Bay Area with reasonable density, including extending to the north and south bay regions where such large sources do not currently exist. There are many restrictions on where new sources of this magnitude could possibly be built. As clearly evident in Figures 1 and 2, considerations must include limitations resulting from the unique geography of the Bay Area (extensive water bodies and surrounding mountain ranges), access to necessary infrastructure and raw materials (railroads, highways, water and fuel pipelines, etc.), population

density and public sensitivity to health and welfare concerns, and the clustering of areas specifically zoned for industrial use.

The 7 hypothetical new sources are located within existing industrial areas of the Bay Area where growth may be expected and allowed via zoning restrictions. These include 2 in the industrialized area along the northern coast of Contra Costa County, 2 in industrial areas of the east bay (Alameda County), one near the existing cement plant (Santa Clara County), one at the south end of the Bay Area (southern Santa Clara County) and one in the north bay near existing landfill activity (Sonoma County). Except for the southern-most source, all are consistently positioned within areas currently occupied by the existing 131 SO_2 sources.

Modeling Methodology

The SO_2 demonstration modeling will build upon existing CALPUFF and CMAQ applications that the District has previously developed for the year 2012. EPA's draft Demonstration Guidance of November 17, 2016 recommends using absolute model outputs to calculate major source impacts for NNSR precursor demonstrations, while acknowledging that examination of relative impacts may be appropriate in some cases. In the Bay Area, sulfate is measured at five sites: four of these sites are on a one-in-three-day schedule, and the remaining site is on a one-in-six-day schedule. There are also gaps in captured sulfate data in January and December 2012. Therefore, determining the true bias between simulated and sparsely measured sulfate is difficult. As a result, we prefer to determine the increase in sulfate concentrations for the hypothetical growth case in an absolute sense. However, we also plan to examine relative differences in sulfate concentrations between the base case and hypothetical control case, and information on both absolute and relative differences will be included in the Demonstration report.

The SO_2 impact will be modeled using the "brute force" approach, which calculates $PM_{2.5}$ impacts by differencing model output from two scenarios: a "base case" (current 2012 inventory) and a "modified case".

The CMAQ photochemical grid model will be run on the District's 4 km Central California modeling grid for two winter months of 2012: January 2-31 and December 2-30. CMAQ emissions will include:

1) 2012 base-year emission inventory, including all "current" sources of SO_2 and other photochemical and PM precursors (NOx, VOC, CO, primary PM);
2) A 20% increase in SO_2 for 131 sources emitting at least 4 TPY of SO_2 in 2012;
3) Seven additional hypothetical new SO_2 sources each emitting 370 TPY.

There are significant variations in stack paraments of existing sources of similar size within the Bay Area. These parameters will be tested with the CALPUFF model and the parameters resulting in the highest SO_4 concentrations will be used for both CMAQ and CALPUFF simulations. For the CMAQ case, the additional emissions and stack data will be incorporated into the District's 2012 modeling inventory using the Sparse Matrix Operator Kernel Emissions (SMOKE) processing system.

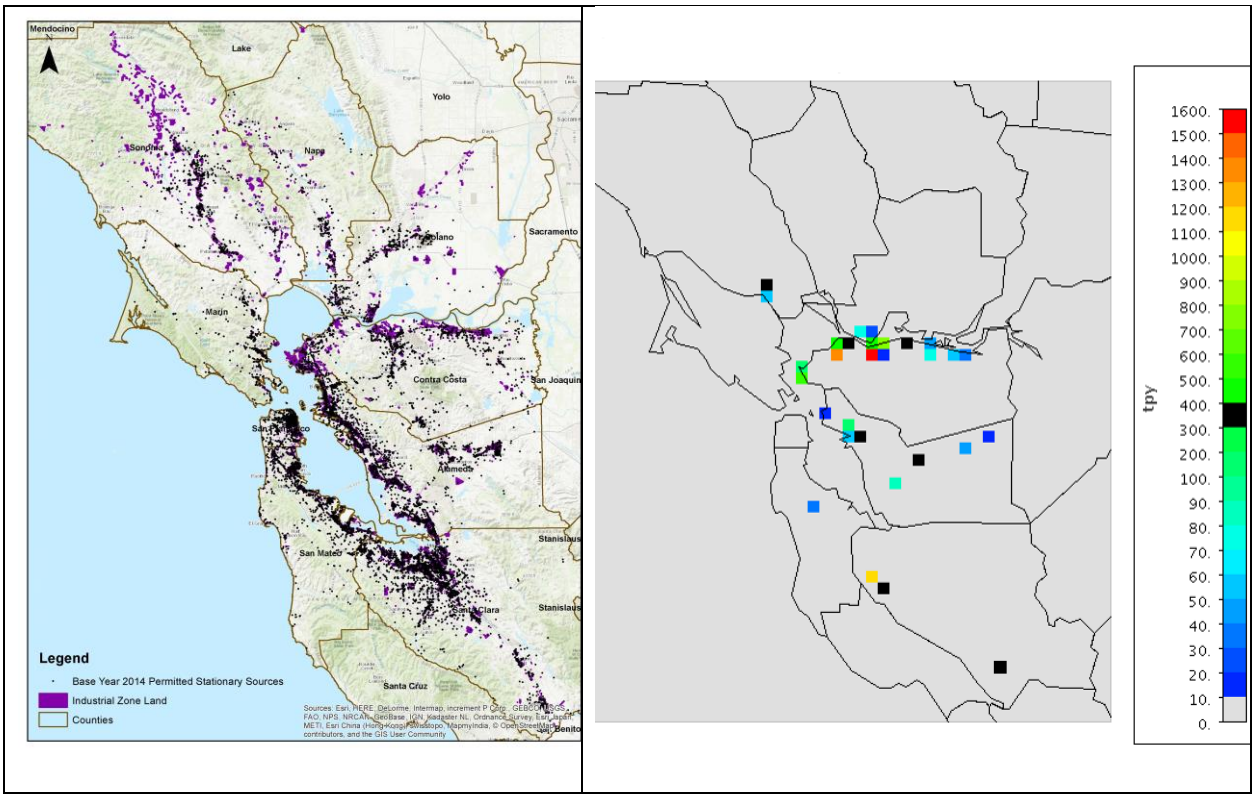


Figure 1. (Left) Locations of permitted point sources in the Bay Area as of 2014 (black) and areas zoned for industrial use (purple). (Right) 2012 point source SO_2 emissions from sources emitting at least 4 TPY (colored), and location of 7 hypothetical SO_2 sources (black). Emissions are represented on the CMAQ 4 km modeling grid; emissions within the same grid cell are summed.

The CALPUFF plume model will be run for the entire 2012 year to simulate the dispersion of SO_2 and resulting chemical conversion to SO_4. CALPUFF will be configured and run identically to the District's existing applications, but will include the following emission updates:

1) A 20% increase in SO_2 for 131 sources emitting at least 4 TPY of SO_2 in 2012;
2) Seven additional hypothetical new SO_2 sources each emitting 370 TPY.

Stack parameters for the new sources will be identical to those developed for the CMAQ runs. New source information will be added to the CALPUFF text point source input files.

The year 2012 is appropriate for the SO_2 modeling demonstration for several reasons. First and most importantly, 2012 is the current model base year established by the CARB, and has been extensively modeled and analyzed by the District to investigate Bay Area patterns and emission sensitivity for both ozone and $PM_{2.5}$. Therefore, modeling datasets are readily available and fully vetted. Second, 2012 provides a reasonable and representative recent year for $PM_{2.5}$ patterns in the Bay Area. As shown in Figure 3, 2012 98th percentile $PM_{2.5}$ concentration patterns across Bay Area monitoring sites are near, yet somewhat below, the 2010-2016 averages and within the minimum-maximum range at all but two sites.

Demonstration Analysis

After CMAQ and CALPUFF simulations are completed, the following post-modeling analysis steps will be conducted to estimate the 24-hour $PM_{2.5}$ impact from increased SO_2 emissions.

5) The 24-hour $PM_{2.5}$ in each model grid cell in the nonattainment area will be determined for each day of CMAQ and CALPUFF output from the base case scenario. In the case of CMAQ, daily component species (sulfate, nitrate, organics, other) will be presented and $PM_{2.5}$ concentrations will be calculated from the sum of component species for each day of the December and January 2012 modeling period. For CALPUFF, daily SO_4 concentrations will be calculated for all days of 2012.

6) The 24-hour $PM_{2.5}$ in each model grid cell will be determined for each day from the modified SO_2 emissions scenario, in the same way as the base case for both models.

7) The daily difference in 24-hour $PM_{2.5}$ between the sensitivity and base case scenarios will be tabulated for each grid cell. For CMAQ, daily differences will be calculated for $PM_{2.5}$, whereas for CALPUFF daily differences will be calculated for SO_4. These calculations yield daily, gridded impacts from the modified SO_2 emission scenario.

8) The maximum 24-hour $PM_{2.5}$ and SO_4 impacts from the respective CMAQ and CALPUFF modeled time periods will be assessed and used for the purpose of the demonstration. If the maximum impact is less than 1.3 $\mu g/m^3$, that will support a conclusion under 40 CFR section 51.1006(a)(3) that the air quality changes associated with the increase SO_2 emissions are not significant.

Rationale for Significance Threshold

The District will use the 1.3 $\mu g/m^3$ threshold recommended by EPA for determining whether SO_2 emissions will make a significant contribution to $PM_{2.5}$ levels exceeding the 24-hour NAAQS. The District has concluded that this is an appropriate measure of whether SO_2 emissions will contribute significantly to $PM_{2.5}$ levels exceeding the NAAQS based on the statistical analyses EPA has conducted in its draft *Technical Basis for the EPA's Development of Significant Impact Thresholds for $PM_{2.5}$ and Ozone* (Aug. 1, 2016). EPA noted that due to fluctuating meteorological conditions and changes in day-to-day source operations, there is inherent variability in the air quality in the area of a monitoring site. This variability can be characterized through the application of a well-established statistical framework for quantifying uncertainty in population statistics. EPA quantified the fluctuations in 24-hour $PM_{2.5}$ concentrations (as measured by design values) and determined that a concentration difference of 1.3 $\mu g/m^3$ is the 50% confidence interval for the 35 $\mu g/m^3$ NAAQS, representing a "significant" impact (pp. 38 and 49). For these reasons, 1.3 $\mu g/m^3$ is an appropriate threshold to use as a first step in evaluating whether the modeled SO_2 emissions increases will contribute significantly to $PM_{2.5}$ concentrations exceeding the NAAQS. However, an increase greater than 1.3 $\mu g/m^3$ would not necessarily preclude the District from making a demonstration since the District does not exceed the $PM_{2.5}$ NAAQS.

CHARACTERIZATON OF $PM_{2.5}$ IN THE BAY AREA

The Bay Area is a designated nonattainment area for the current 24-hour $PM_{2.5}$ NAAQS, which was promulgated in 2006. The form of this standard is the annual 98th percentile 24-hour average $PM_{2.5}$ concentration at each monitor. Each monitor's "Design Value" (DV), which is the metric that determines attainment, is a running 3-year average of the annual 98th percentile; a DV exceeding 35 $\mu g/m^3$ is in violation of the NAAQS.

Figure 2 presents two maps of the Bay Area. The left map includes a satellite-derived image of geography (water bodies, terrain, urbanized areas), county boundaries, and the location of $PM_{2.5}$ monitoring sites. The right map shows color-coded locations of $PM_{2.5}$, SO_2 and speciated SO_4 monitoring sites. Areas of mountainous terrain are generally characterized in Figure 2 by dark green forests, which include many expansive County, State and Federal Parks and Recreation Areas. Urban areas are shown in grey, which primarily rim the Bay and extend to valleys in the North (Santa Rosa), to the east (Concord, Livermore), and to the south (San Jose, Gilroy). The Sacramento River Delta extends eastward from the northern extent of the Bay, past Concord and into the Sacramento and San Joaquin Valleys in the upper right of these maps.

Most $PM_{2.5}$ monitoring sites are operated by the District, with one operated by the Interagency Monitoring of Protected Visual Environments (IMPROVE) program at Point Reyes. There are 15 daily $PM_{2.5}$ monitors operating in the Bay area: 10 of which measure just $PM_{2.5}$, 3 of which are

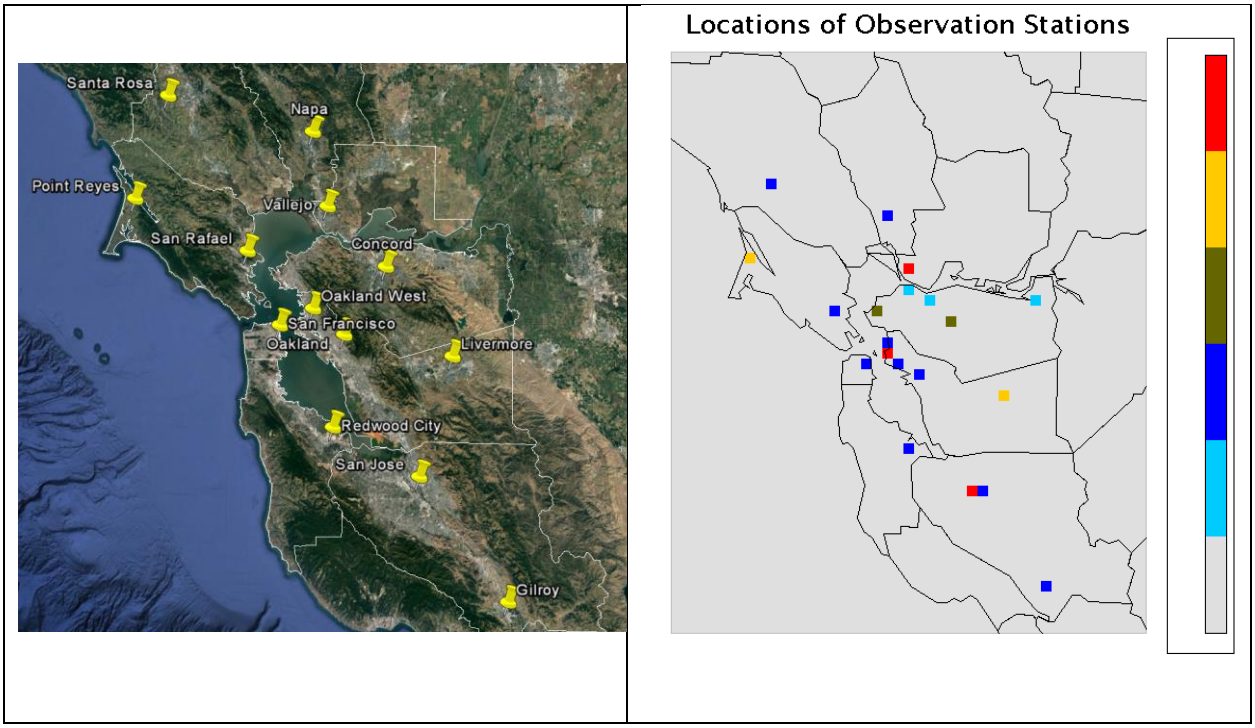


Figure 2. (Left) Satellite-derived geographic image of the San Francisco Bay Area, including county boundaries and the location of $PM_{2.5}$ monitoring sites. (Right) Color-coded locations of $PM_{2.5}$, SO_2 and speciated SO_4 monitoring sites. There are 15 $PM_{2.5}$ monitors operating daily in the Bay area: 10 measure just $PM_{2.5}$ (dark blue), 3 are co-located with SO_2 and SO_4 (red), and 2 are co-located

with SO_2 measurements (brown). Three additional sites measure just SO_2 (light blue), and 2 sites measure SO_4 (gold).

co-located with SO_2 and SO_4 measurements, and 2 of which are co-located with SO_2 measurements. Three additional sites measure just SO_2 in the industrial zone along the Sacramento River (for a total of 8 SO_2 sites). Two sites measure SO_4 every few days in Livermore and Point Reyes (for a total of 5 SO_4 sites).

Figure 3 shows 2010-2016 trends in peak 24-hour $PM_{2.5}$ annual maximum, peak annual 98th percentile, and peak DV among all Bay Area sites. While there is a wide range of inter-annual variability among the number of exceedance days and the annual maxima, the trends in annual 98th percentile and DV are relatively flat and in fact have not exceeded the standard since 2010. Peak DVs range from 25 to 31 μg/m^3 while peak 98th percentiles range from 22 to 35 μg/m^3.

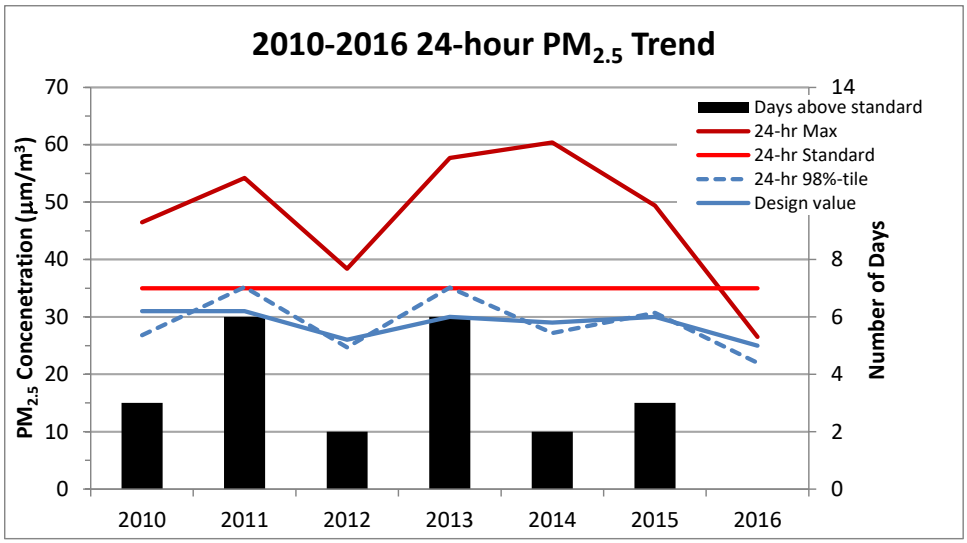


Figure 3. 2010-2016 trends in peak 24-hour $PM_{2.5}$ annual maximum concentration (red), peak annual 98th percentile concentration (blue dash) and peak DV (blue solid) among all sites in the Bay Area (scale on left axis), and number of exceedance days per year (scale on right axis).

Figure 4 shows site-specific minimum, average and maximum annual 98th percentile $PM_{2.5}$ concentrations over the 2010-2016 period, as well as the values for 2012 specifically. The highest concentrations in the Bay Area consistently occur at San Jose, Livermore and Vallejo. The latter two sites are located within the terrain gaps of the eastern Bay Area (Altamont Pass and the Sacramento River, respectively), where high $PM_{2.5}$ concentrations from the Sacramento and San Joaquin Valleys flow into the Bay Area during wintertime exceedance episodes. The strong seasonality of $PM_{2.5}$ events is evident in Figure 5. Daily $PM_{2.5}$ concentrations consistently peak during the months of December and January during cold, foggy episodes characterized by strong stability and weak easterly surface winds. Conversely, SO_2 and particulate SO_4 concentrations tend to be highest during summer months, when $PM_{2.5}$ concentrations are rather low as a result of strong westerly winds that efficiently ventilate the Bay Area. 24-hr $PM_{2.5}$ exceedances are very unusual in the Bay Area outside of winter months. We suspect that these summer and fall exceedances are impacted from wildfire emissions. We will conduct investigations on possible

causes of exceedances and include them in the Demonstration report. In addition, these periods will be simulated with the CALPUFF model.

As shown in Figure 6, monthly-averaged SO_4 concentration over 2012-2014 reach just over 1 $\mu g/m^3$ in the summer, but are less than 0.5 $\mu g/m^3$ during winter months when total $PM_{2.5}$ is highest. Additionally, Figure 6 shows that SO_4 is spatially invariant across the four monitoring sites all year long. This feature is consistent with slow chemical conversion of SO_2 to SO_4 and further suggests that SO_4 in the Bay Area is primarily the result of regional background sources well outside the Bay Area, potentially including oceanic sources of anthropogenic and natural origin.

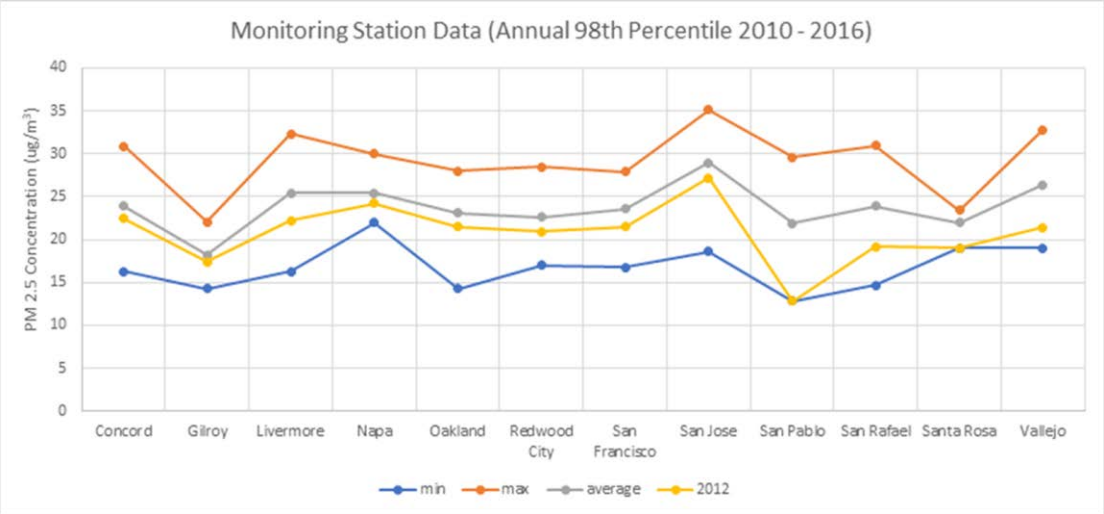


Figure 4. 2010-2016 minimum, average, and maximum annual 98th percentile 24-hour $PM_{2.5}$ concentrations by site. The 98th percentile for 2012 is shown individually in yellow.

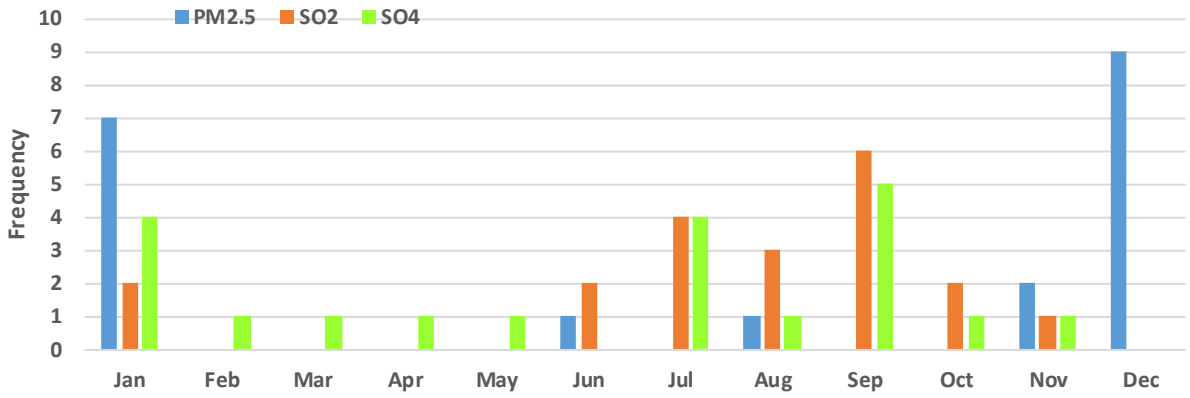


Figure 5. Monthly distribution of the top 20 observed $PM_{2.5}$, SO_2, and SO_4 concentrations over 2010-2016.

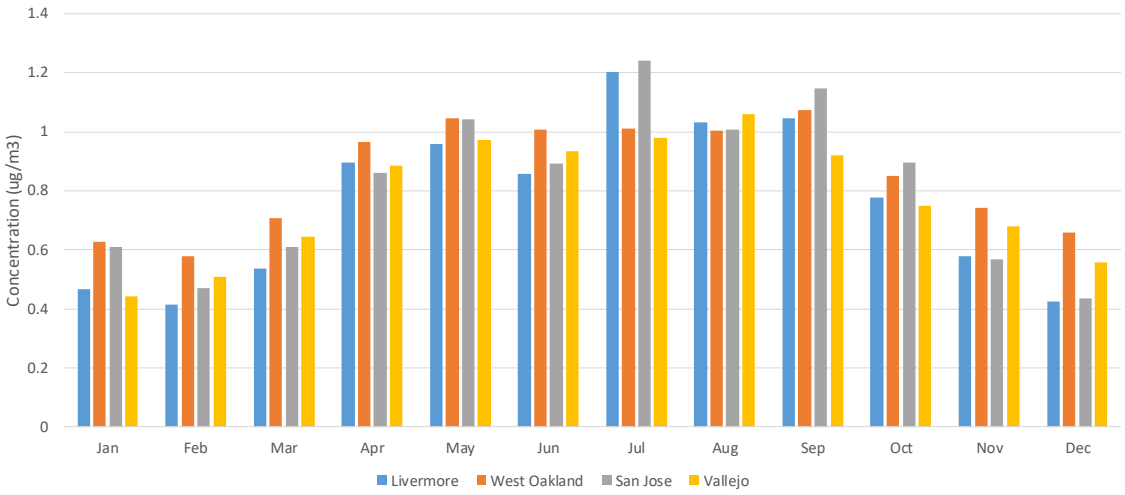
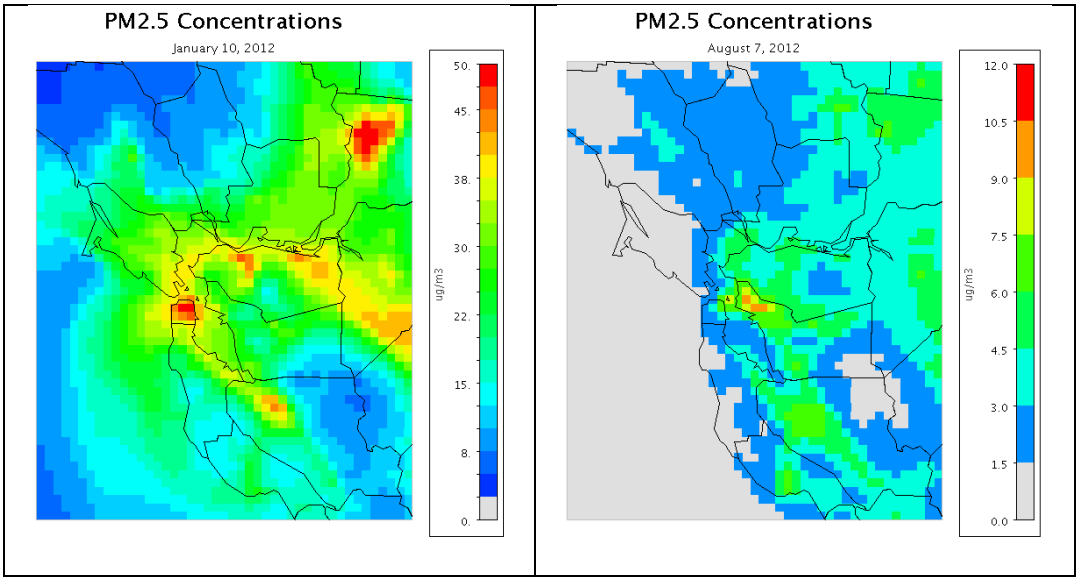


Figure 6. 2012-2014 monthly-average SO_4 concentrations at four sites.



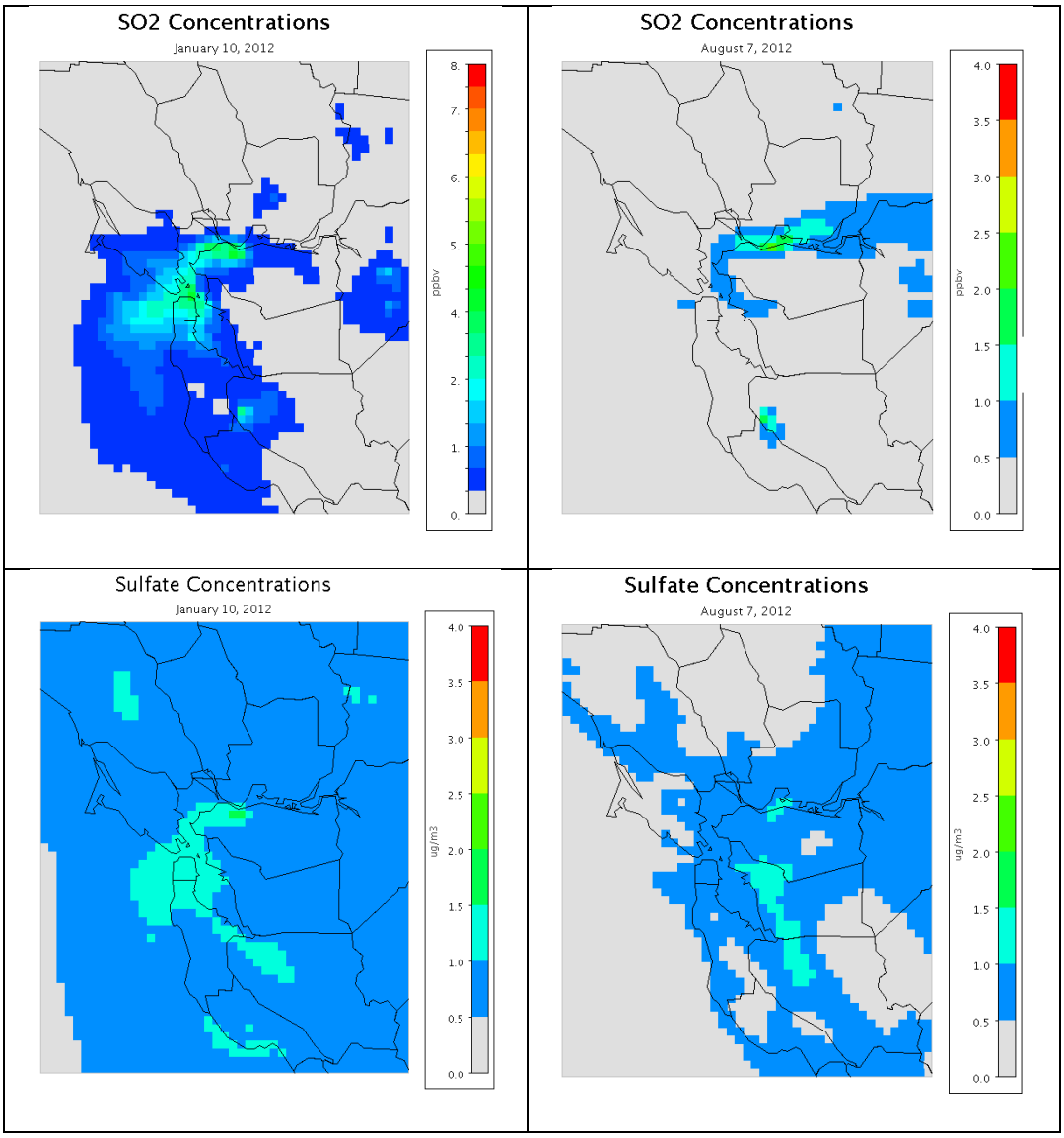


Figure 7. CMAQ modeling results for $PM_{2.5}$ (top), SO_2 (middle) and SO_4 (bottom) on January 10, 2012 (left) and August 7, 2012 (right).

Community Multiscale Air Quality (CMAQ) modeling conducted by the District for the year 2012 characterizes the observed seasonal $PM_{2.5}$ and SO_4 patterns well, both in magnitude and spatially (Figure 7). The model replicates the highest total $PM_{2.5}$ concentrations during January, with strong spatial gradients within the Bay Area, a clear contribution from eastern sources, and plumes directed offshore in the weak westward flow. The summer pattern exhibits much lower $PM_{2.5}$ concentrations with a clear eastward push of pollutants into the interior valleys of California. SO_2 concentrations and resulting SO_4 patterns are clearly aligned along the industrial zones of the Bay Area, and the seasonally opposing transport directions are particularly obvious in the local SO_2 plumes. However, in both seasons SO_4 concentrations are much more spatially invariant than $PM_{2.5}$. A potentially larger regional background SO_4 contribution is evident in January than in August.

MODELING APPROACH

The following describes how the 2012 CMAQ and CALPUFF modeling was done. This same approach will be used for the new modeling, with the 20% emission increase for existing 131 SO_2 sources and 7 new sources described above.

CMAQ Model

7 Meteorological inputs to CMAQ are prepared using the Weather Research and Forecasting (WRF) model. WRF has three nested domains: (1) The outer domain covers the entire western US and a portion of Pacific Ocean with 36 km horizontal (grid) resolution, (2) The intermediate domain covers all of California and a portion of Nevada with 12 km horizontal resolution, (3) The inner domain covers central, and a portion of, northern California with 4 km horizontal resolution. All three domains have 50 vertical layers. The top of the modeling domain extends up to 16 km in elevation.

WRF was applied six days at a time. The last day of each period overlapped with the first day of next period and used for air quality modeling, that is, the first day of each period was not used for air quality modeling. Various model options were tested and a combination of the best performing options were selected for the final simulation. Four dimensional data assimilation was used to bring simulations toward observations. A comprehensive model evaluation was conducted and documented as part of the District's 2016 Clean Air Plan.

The 2012 base-year emissions inventory was obtained from the California Air Resources Board and processed using the SMOKE model to prepare emissions inputs for CMAQ.

The CMAQ model (version 5.0.2) has one domain with 4 km horizontal resolution and covers the innermost domain of WRF, except two grid cells along all lateral boundaries. Lateral boundary conditions for all species, except for ozone are interpolated from MOZART's output with six hours of interval. Ozone boundary condition is specified from monthly averages of ozone measurements via ozonesondes at Trinidad Head, California.

CMAQ has 15 vertical layers, with the top of the modeling domain extending to 16 km in elevation. This domain was established for the 2000 Central California Ozone Study and used by various agencies including the California Air Resources Board, the Bay Area Air Quality Management District and the San Joaquin Valley Air Pollution Control District.

CMAQ uses the SAPRC99 chemical mechanism which works better with California's reformulated gasoline emissions. Like the WRF model, performance of CMAQ was rigorously evaluated, this time for ozone, $PM_{2.5}$ and precursors.

CALPUFF Model

The CALPUFF (version 6.42) domain covers the 9 county Bay Area with 4 km horizontal resolution. It has 18 vertical layers and the top of the modeling domain extends to 3 km in elevation. Primary default options were selected for SO_2 and SO_4 simulations. Meteorological inputs were prepared using CALMET (version 6.211). Meteorological inputs to CALMET were DS472 surface observations and upper air observations from the Oakland sounding.

Appendix B: Example CALPUFF Control Input File for January 2012

```
CALPUFF test case run - 2  point sources
monthly Simulation using CALMET met. data
Gridded receptors on 67x67  4-km met grid
CALPUFF.INP     2.0             File version record
---------------- Run title (3 lines) ------------------------------------------

                    CALPUFF MODEL CONTROL FILE
                    --------------------------

------------------------------------------------------------------------------

INPUT GROUP: 0 -- Input and Output File Names

--------------
Default Name  Type          File Name
------------  ----          ---------
CALMET.DAT    input    ! METDAT =../../calmet/outputs.2012.lyr18/calmet.bayarea_4km.201201.dat
!
    or
ISCMET.DAT    input    * ISCDAT =             *
    or
PLMMET.DAT    input    * PLMDAT =             *
    or
PROFILE.DAT   input    * PRFDAT =             *
SURFACE.DAT   input    * SFCDAT =             *
RESTARTB.DAT  input    * RSTARTB=             *
------------------------------------------------------------------------------
CALPUFF.LST   output   ! PUFLST =../outputs/base.so2_only/base.so2_only.201201.lst  !
CONC.DAT      output   ! CONDAT =../outputs/base.so2_only/base.so2_only.201201.con  !
DFLX.DAT      output   ! DFDAT  =../outputs/base.so2_only/base.so2_only.201201.dflx !
WFLX.DAT      output   ! WFDAT  =../outputs/base.so2_only/base.so2_only.201201.wflx !

VISB.DAT      output   * VISDAT =CALPUFF.VIS  *
TK2D.DAT      output   * T2DDAT =             *
RHO2D.DAT     output   * RHODAT =             *
RESTARTE.DAT  output   * RSTARTE=             *
------------------------------------------------------------------------------
Emission Files
--------------
PTEMARB.DAT   input    * PTDAT  =             *
VOLEMARB.DAT  input    * VOLDAT =             *
BAEMARB.DAT   input    * ARDAT  =             *
LNEMARB.DAT   input    * LNDAT  =             *
------------------------------------------------------------------------------
Other Files
-----------
OZONE.DAT     input    * OZDAT  =OZONE.DAT    *
VD.DAT        input    * VDDAT  =             *
CHEM.DAT      input    * CHEMDAT=             *
AUX           input    * AUXEXT =AUX     *
(Extension added to METDAT filename(s) for files
 with auxiliary 2D and 3D data)
H2O2.DAT      input    * H2O2DAT=             *
NH3Z.DAT      input    * NH3ZDAT=             *
HILL.DAT      input    * HILDAT=              *
HILLRCT.DAT   input    * RCTDAT=              *
COASTLN.DAT   input    * CSTDAT=              *
FLUXBDY.DAT   input    * BDYDAT=              *
BCON.DAT      input    * BCNDAT=              *
DEBUG.DAT     output   * DEBUG =              *
MASSFLX.DAT   output   * FLXDAT=              *
MASSBAL.DAT   output   * BALDAT=              *
FOG.DAT       output   * FOGDAT=              *
RISE.DAT      output   * RISDAT=              *
------------------------------------------------------------------------------
All file names will be converted to lower case if LCFILES = T
Otherwise, if LCFILES = F, file names will be converted to UPPER CASE
         T = lower case      ! LCFILES = T !
         F = UPPER CASE
NOTE: (1) file/path names can be up to 132 characters in length
```

```
Provision for multiple input files
----------------------------------

     Number of Modeling Domains (NMETDOM)
                                     Default: 1       ! NMETDOM =   1   !

     Number of CALMET.DAT files for run (NMETDAT)
                                     Default: 1       ! NMETDAT =   1   !

     Number of PTEMARB.DAT files for run (NPTDAT)
                                     Default: 0       ! NPTDAT =    0   !

     Number of BAEMARB.DAT files for run (NARDAT)
                                     Default: 0       ! NARDAT =    0   !

     Number of VOLEMARB.DAT files for run (NVOLDAT)
                                     Default: 0       ! NVOLDAT =   0   !

!END!

-------------
Subgroup (0a)
-------------

  Provide a name for each CALMET domain if NMETDOM > 1
  Enter NMETDOM lines.
                                   a,b
Default Name             Domain Name
------------             ------------
 none                  * DOMAIN1=     *   *END*
 none                  * DOMAIN2=     *   *END*
 none                  * DOMAIN3=     *   *END*


  The following CALMET.DAT filenames are processed in sequence
  if NMETDAT > 1

  Enter NMETDAT lines, 1 line for each file name.

                                   a,c,d
Default Name  Type          File Name
------------  ----          ---------
 none         input    * METDAT1=     *   *END*
 none         input    * METDAT2=     *   *END*
 none         input    * METDAT3=     *   *END*

-------------
    a
     The name for each CALMET domain and each CALMET.DAT file is treated
     as a separate input subgroup and therefore must end with an input
     group terminator.
    b
     Use DOMAIN1= to assign the name for the outermost CALMET domain.
     Use DOMAIN2= to assign the name for the next inner CALMET domain.
     Use DOMAIN3= to assign the name for the next inner CALMET domain, etc.
      ---------------------------------------------------------------------
      |   When inner domains with equal resolution (grid-cell size)      |
      |   overlap, the data from the FIRST such domain in the list will  |
      |   be used if all other criteria for choosing the controlling     |
      |   grid domain are inconclusive.                                   |
      ---------------------------------------------------------------------
    c
     Use METDAT1= to assign the file names for the outermost CALMET domain.
     Use METDAT2= to assign the file names for the next inner CALMET domain.
     Use METDAT3= to assign the file names for the next inner CALMET domain, etc.
    d
     The filenames for each domain must be provided in sequential order

-------------
Subgroup (0b)
-------------

  The following PTEMARB.DAT filenames are processed if NPTDAT>0
  (Each file contains a subset of the sources, for the entire simulation)
```

```
Default Name  Type          File Name
------------  ----          ---------
 none         input       * PTDAT=     *   *END*


-------------
Subgroup (0c)
-------------

  The following BAEMARB.DAT filenames are processed if NARDAT>0
  (Each file contains a subset of the sources, for the entire simulation)

Default Name  Type          File Name
------------  ----          ---------
 none         input       * ARDAT=     *   *END*


-------------
Subgroup (0d)
-------------

  The following VOLEMARB.DAT filenames are processed if NVOLDAT>0
  (Each file contains a subset of the sources, for the entire simulation)

Default Name  Type          File Name
------------  ----          ---------
 none         input       * VOLDAT=     *   *END*


------------------------------------------------------------------------------

INPUT GROUP: 1 -- General run control parameters
--------------

    Option to run all periods found
    in the met. file     (METRUN)   Default: 0       ! METRUN =   0  !

         METRUN = 0 - Run period explicitly defined below
         METRUN = 1 - Run all periods in met. file

     Starting date:    Year   (IBYR)  --    No default   ! IBYR  =  2012   !
                       Month  (IBMO)  --    No default   ! IBMO  =  01     !
                       Day    (IBDY)  --    No default   ! IBDY  =  1      !
     Starting time:    Hour   (IBHR)  --    No default   ! IBHR  =  0      !
                       Minute (IBMIN) --    No default   ! IBMIN =  0      !
                       Second (IBSEC) --    No default   ! IBSEC =  0      !

     Ending date:      Year   (IEYR)  --    No default   ! IEYR  =  2012   !
                       Month  (IEMO)  --    No default   ! IEMO  =  01     !
                       Day    (IEDY)  --    No default   ! IEDY  =  31     !
     Ending time:      Hour   (IEHR)  --    No default   ! IEHR  =  23     !
                       Minute (IEMIN) --    No default   ! IEMIN =  0      !
                       Second (IESEC) --    No default   ! IESEC =  0       !

     (These are only used if METRUN = 0)

     Base time zone:          (ABTZ)  --    No default   ! ABTZ= UTC-0800 !
      (character*8)
     The modeling domain may span multiple time zones.  ABTZ defines the
     base time zone used for the entire simulation.  This must match the
     base time zone of the meteorological data.
     Examples:
         Los Angeles, USA          = UTC-0800
         New York, USA             = UTC-0500
         Santiago, Chile           = UTC-0400
         Greenwich Mean Time (GMT) = UTC+0000
         Rome, Italy               = UTC+0100
         Cape Town, S.Africa       = UTC+0200
         Sydney, Australia         = UTC+1000

     Length of modeling time-step (seconds)
     Equal to update period in the primary
     meteorological data files, or an
     integer fraction of it (1/2, 1/3 ...)
     Must be no larger than 1 hour
```

```
   (NSECDT)                        Default:3600     ! NSECDT =  3600  !
                                   Units: seconds

   Number of chemical species (NSPEC)
                                   Default: 5       ! NSPEC =  2      !

   Number of chemical species
   to be emitted  (NSE)            Default: 3       ! NSE =    1      !

   Flag to stop run after
   SETUP phase (ITEST)             Default: 2       ! ITEST =  2      !
   (Used to allow checking
   of the model inputs, files, etc.)
         ITEST = 1 - STOPS program after SETUP phase
         ITEST = 2 - Continues with execution of program
                     after SETUP

   Restart Configuration:

      Control flag (MRESTART)      Default: 0       ! MRESTART =  0   !

         0 = Do not read or write a restart file
         1 = Read a restart file at the beginning of
             the run
         2 = Write a restart file during run
         3 = Read a restart file at beginning of run
             and write a restart file during run

      Number of periods in Restart
      output cycle (NRESPD)        Default: 0       ! NRESPD =  0     !

         0 = File written only at last period
        >0 = File updated every NRESPD periods

   Meteorological Data Format (METFM)
                                   Default: 1       ! METFM =  1      !

         METFM = 1 - CALMET binary file (CALMET.MET)
         METFM = 2 - ISC ASCII file (ISCMET.MET)
         METFM = 3 - AUSPLUME ASCII file (PLMMET.MET)
         METFM = 4 - CTDM plus tower file (PROFILE.DAT) and
                     surface parameters file (SURFACE.DAT)
         METFM = 5 - AERMET tower file (PROFILE.DAT) and
                     surface parameters file (SURFACE.DAT)

   Meteorological Profile Data Format (MPRFFM)
          (used only for METFM = 1, 2, 3)
                                   Default: 1       ! MPRFFM =  1   !

         MPRFFM = 1 - CTDM plus tower file (PROFILE.DAT)
         MPRFFM = 2 - AERMET tower file (PROFILE.DAT)

   PG sigma-y is adjusted by the factor (AVET/PGTIME)**0.2
   Averaging Time (minutes) (AVET)
                                   Default: 60.0    ! AVET = 60. !
   PG Averaging Time (minutes) (PGTIME)
                                   Default: 60.0    ! PGTIME = 60. !


   Output units for binary concentration and flux files
   written in Dataset v2.2 or later formats
   (IOUTU)                         Default: 1       ! IOUTU =  1   !
       1 = mass      -  g/m3 (conc) or g/m2/s (dep)
       2 = odour     -  odour_units (conc)
       3 = radiation -  Bq/m3 (conc) or Bq/m2/s (dep)


   Output Dataset format for binary concentration
   and flux files (e.g., CONC.DAT)
   (IOVERS)                        Default: 2       ! IOVERS =  2   !
       1 = Dataset Version 2.1
       2 = Dataset Version 2.2


!END!
```

```
------------------------------------------------------------------------------

INPUT GROUP: 2 -- Technical options
--------------

     Vertical distribution used in the
     near field (MGAUSS)                  Default: 1     ! MGAUSS =  1   !
        0 = uniform
        1 = Gaussian

     Terrain adjustment method
     (MCTADJ)                             Default: 3     ! MCTADJ =  3   !
        0 = no adjustment
        1 = ISC-type of terrain adjustment
        2 = simple, CALPUFF-type of terrain
            adjustment
        3 = partial plume path adjustment

     Subgrid-scale complex terrain
     flag (MCTSG)                         Default: 0     ! MCTSG =  0   !
        0 = not modeled
        1 = modeled

     Near-field puffs modeled as
     elongated slugs? (MSLUG)             Default: 0     ! MSLUG =  0   !
        0 = no
        1 = yes (slug model used)

     Transitional plume rise modeled?
     (MTRANS)                             Default: 1     ! MTRANS =  1  !
        0 = no  (i.e., final rise only)
        1 = yes (i.e., transitional rise computed)

     Stack tip downwash? (MTIP)           Default: 1     ! MTIP =  1  !
        0 = no  (i.e., no stack tip downwash)
        1 = yes (i.e., use stack tip downwash)

     Method used to compute plume rise for
     point sources not subject to building
     downwash? (MRISE)                    Default: 1     ! MRISE =  1  !
        1 = Briggs plume rise
        2 = Numerical plume rise

     Method used to simulate building
     downwash? (MBDW)                     Default: 1     ! MBDW =   1  !
        1 = ISC method
        2 = PRIME method

     Vertical wind shear modeled above
     stack top (modified Briggs plume rise)?
     (MSHEAR)                             Default: 0     ! MSHEAR =  0  !
        0 = no  (i.e., vertical wind shear not modeled)
        1 = yes (i.e., vertical wind shear modeled)

     Puff splitting allowed? (MSPLIT)     Default: 0     ! MSPLIT =  0  !
        0 = no (i.e., puffs not split)
        1 = yes (i.e., puffs are split)

     Chemical mechanism flag (MCHEM)      Default: 1     ! MCHEM =  1   !
        0 = chemical transformation not
            modeled
        1 = transformation rates computed
            internally (MESOPUFF II scheme)
        2 = user-specified transformation
            rates used
        3 = transformation rates computed
            internally (RIVAD/ARM3 scheme)
        4 = secondary organic aerosol formation
            computed (MESOPUFF II scheme for OH)
        5 = user-specified half-life with or
            without transfer to child species
        6 = transformation rates computed
```

```
       internally (Updated RIVAD scheme with
       ISORROPIA equilibrium)
   7 = transformation rates computed
       internally (Updated RIVAD scheme with
       ISORROPIA equilibrium and CalTech SOA)

Aqueous phase transformation flag (MAQCHEM)
(Used only if MCHEM = 6, or 7)        Default: 0     ! MAQCHEM =  0   !
   0 = aqueous phase transformation
       not modeled
   1 = transformation rates and wet
       scavenging coefficients adjusted
       for in-cloud aqueous phase reactions
       (adapted from RADM cloud model
        implementation in CMAQ/SCICHEM)

Liquid Water Content flag (MLWC)
(Used only if MAQCHEM = 1)            Default: 1     ! MLWC =  1   !
   0 = water content estimated from cloud cover
       and presence of precipitation
   1 = gridded cloud water data read from CALMET
       water content output files (filenames are
       the CALMET.DAT names PLUS the extension
       AUXEXT provided in Input Group 0)

Wet removal modeled ? (MWET)          Default: 1     ! MWET =  1   !
   0 = no
   1 = yes

Dry deposition modeled ? (MDRY)       Default: 1     ! MDRY =  1   !
   0 = no
   1 = yes
   (dry deposition method specified
    for each species in Input Group 3)


Gravitational settling (plume tilt)
modeled ? (MTILT)                     Default: 0     ! MTILT =  0   !
   0 = no
   1 = yes
   (puff center falls at the gravitational
    settling velocity for 1 particle species)

Restrictions:
    - MDRY  = 1
    - NSPEC = 1  (must be particle species as well)
    - sg    = 0  GEOMETRIC STANDARD DEVIATION in Group 8 is
                 set to zero for a single particle diameter

Method used to compute dispersion
coefficients (MDISP)                  Default: 3     ! MDISP =  3   !

   1 = dispersion coefficients computed from measured values
       of turbulence, sigma v, sigma w
   2 = dispersion coefficients from internally calculated
       sigma v, sigma w using micrometeorological variables
       (u*, w*, L, etc.)
   3 = PG dispersion coefficients for RURAL areas (computed using
       the ISCST multi-segment approximation) and MP coefficients in
       urban areas
   4 = same as 3 except PG coefficients computed using
       the MESOPUFF II eqns.
   5 = CTDM sigmas used for stable and neutral conditions.
       For unstable conditions, sigmas are computed as in
       MDISP = 3, described above.  MDISP = 5 assumes that
       measured values are read

Sigma-v/sigma-theta, sigma-w measurements used? (MTURBVW)
(Used only if MDISP = 1 or 5)         Default: 3     ! MTURBVW =  3  !
   1 = use sigma-v or sigma-theta measurements
       from PROFILE.DAT to compute sigma-y
       (valid for METFM = 1, 2, 3, 4, 5)
   2 = use sigma-w measurements
       from PROFILE.DAT to compute sigma-z
       (valid for METFM = 1, 2, 3, 4, 5)
```

```
   3 = use both sigma-(v/theta) and sigma-w
       from PROFILE.DAT to compute sigma-y and sigma-z
       (valid for METFM = 1, 2, 3, 4, 5)
   4 = use sigma-theta measurements
       from PLMMET.DAT to compute sigma-y
       (valid only if METFM = 3)

Back-up method used to compute dispersion
when measured turbulence data are
missing (MDISP2)                    Default: 3     ! MDISP2 =  3  !
(used only if MDISP = 1 or 5)
   2 = dispersion coefficients from internally calculated
       sigma v, sigma w using micrometeorological variables
       (u*, w*, L, etc.)
   3 = PG dispersion coefficients for RURAL areas (computed using
       the ISCST multi-segment approximation) and MP coefficients in
       urban areas
   4 = same as 3 except PG coefficients computed using
       the MESOPUFF II eqns.

[DIAGNOSTIC FEATURE]
Method used for Lagrangian timescale for Sigma-y
(used only if MDISP=1,2 or MDISP2=1,2)
(MTAULY)                            Default: 0     ! MTAULY =  0  !
   0 = Draxler default 617.284 (s)
   1 = Computed as Lag. Length / (.75 q) -- after SCIPUFF
  10 < Direct user input (s)             -- e.g., 306.9


[DIAGNOSTIC FEATURE]
Method used for Advective-Decay timescale for Turbulence
(used only if MDISP=2 or MDISP2=2)
(MTAUADV)                           Default: 0     ! MTAUADV =  0  !
   0 = No turbulence advection
   1 = Computed (OPTION NOT IMPLEMENTED)
  10 < Direct user input (s)   -- e.g., 800


Method used to compute turbulence sigma-v &
sigma-w using micrometeorological variables
(Used only if MDISP = 2 or MDISP2 = 2)
(MCTURB)                            Default: 1     ! MCTURB =  1  !
   1 = Standard CALPUFF subroutines
   2 = AERMOD subroutines

PG sigma-y,z adj. for roughness?    Default: 0     ! MROUGH =  0  !
(MROUGH)
   0 = no
   1 = yes

Partial plume penetration of        Default: 1     ! MPARTL =  1  !
elevated inversion modeled for
point sources?
(MPARTL)
   0 = no
   1 = yes

Partial plume penetration of        Default: 1     ! MPARTLBA =  1  !
elevated inversion modeled for
buoyant area sources?
(MPARTLBA)
   0 = no
   1 = yes

Strength of temperature inversion   Default: 0     ! MTINV =  0  !
provided in PROFILE.DAT extended records?
(MTINV)
   0 = no (computed from measured/default gradients)
   1 = yes

PDF used for dispersion under convective conditions?
                                    Default: 0     ! MPDF =  0  !
(MPDF)
   0 = no
   1 = yes
```

```
Sub-Grid TIBL module used for shore line?
                                    Default: 0     ! MSGTIBL = 0  !
(MSGTIBL)
   0 = no
   1 = yes

Boundary conditions (concentration) modeled?
                                    Default: 0     ! MBCON = 0  !
(MBCON)
   0 = no
   1 = yes, using formatted BCON.DAT file
   2 = yes, using unformatted CONC.DAT file

Note:  MBCON > 0 requires that the last species modeled
       be 'BCON'.  Mass is placed in species BCON when
       generating boundary condition puffs so that clean
       air entering the modeling domain can be simulated
       in the same way as polluted air.  Specify zero
       emission of species BCON for all regular sources.

Individual source contributions saved?
                                    Default: 0     ! MSOURCE = 0  !
(MSOURCE)
   0 = no
   1 = yes


Analyses of fogging and icing impacts due to emissions from
arrays of mechanically-forced cooling towers can be performed
using CALPUFF in conjunction with a cooling tower emissions
processor (CTEMISS) and its associated postprocessors.  Hourly
emissions of water vapor and temperature from each cooling tower
cell are computed for the current cell configuration and ambient
conditions by CTEMISS. CALPUFF models the dispersion of these
emissions and provides cloud information in a specialized format
for further analysis. Output to FOG.DAT is provided in either
'plume mode' or 'receptor mode' format.

Configure for FOG Model output?
                                    Default: 0     ! MFOG =  0   !
(MFOG)
   0 = no
   1 = yes  - report results in PLUME Mode format
   2 = yes  - report results in RECEPTOR Mode format


Test options specified to see if
they conform to regulatory
values? (MREG)                      Default: 1     ! MREG =  0   !

   0 = NO checks are made
   1 = Technical options must conform to USEPA
       Long Range Transport (LRT) guidance
                  METFM    1 or 2
                  AVET     60. (min)
                  PGTIME   60. (min)
                  MGAUSS   1
                  MCTADJ   3
                  MTRANS   1
                  MTIP     1
                  MRISE    1
                  MCHEM    1 or 3 (if modeling SOx, NOx)
                  MWET     1
                  MDRY     1
                  MDISP    2 or 3
                  MPDF     0 if MDISP=3
                           1 if MDISP=2
                  MROUGH   0
                  MPARTL   1
                  MPARTLBA 0
                  SYTDEP   550. (m)
                  MHFTSZ   0
                  SVMIN    0.5 (m/s)
```

```
!END!


------------------------------------------------------------------------------

INPUT GROUP: 3a, 3b -- Species list
-------------------

------------
Subgroup (3a)
------------

  The following species are modeled:

! CSPEC = SO2  ! !END!
! CSPEC = SO4  ! !END!

                                                      Dry                OUTPUT GROUP
    SPECIES          MODELED          EMITTED       DEPOSITED             NUMBER
     NAME         (0=NO, 1=YES)    (0=NO, 1=YES)    (0=NO,              (0=NONE,
   (Limit: 12                                        1=COMPUTED-GAS      1=1st CGRUP,
    Characters                                       2=COMPUTED-PARTICLE 2=2nd CGRUP,
    in length)                                       3=USER-SPECIFIED)   3= etc.)

! SO2  = 1, 1, 1, 0 !
! SO4  = 1, 0, 2, 0 !

!END!

  Note:  The last species in (3a) must be 'BCON' when using the
         boundary condition option (MBCON > 0).  Species BCON should
         typically be modeled as inert (no chem transformation or
         removal).


-------------
Subgroup (3b)
-------------
  The following names are used for Species-Groups in which results
  for certain species are combined (added) prior to output.  The
  CGRUP name will be used as the species name in output files.
  Use this feature to model specific particle-size distributions
  by treating each size-range as a separate species.
  Order must be consistent with 3(a) above.



------------------------------------------------------------------------------


INPUT GROUP: 4 -- Map Projection and Grid control parameters
--------------

     Projection for all (X,Y):
     -------------------------

     Map projection
     (PMAP)                    Default: UTM    ! PMAP = LCC  !

         UTM :  Universal Transverse Mercator
         TTM :  Tangential Transverse Mercator
         LCC :  Lambert Conformal Conic
          PS :  Polar Stereographic
          EM :  Equatorial Mercator
        LAZA :  Lambert Azimuthal Equal Area

     False Easting and Northing (km) at the projection origin
     (Used only if PMAP= TTM, LCC, or LAZA)
     (FEAST)                   Default=0.0     ! FEAST  = 0.000  !
     (FNORTH)                  Default=0.0     ! FNORTH = 0.000  !

     UTM zone (1 to 60)
     (Used only if PMAP=UTM)
     (IUTMZN)                  No Default      ! IUTMZN =  19   !
```

```
    Hemisphere for UTM projection?
    (Used only if PMAP=UTM)
    (UTMHEM)                  Default: N      ! UTMHEM = N  !
        N   :  Northern hemisphere projection
        S   :  Southern hemisphere projection

    Latitude and Longitude (decimal degrees) of projection origin
    (Used only if PMAP= TTM, LCC, PS, EM, or LAZA)
    (RLAT0)                   No Default      ! RLAT0 = 37N  !
    (RLON0)                   No Default      ! RLON0 =120.5W!

        TTM :  RLON0 identifies central (true N/S) meridian of projection
               RLAT0 selected for convenience
        LCC :  RLON0 identifies central (true N/S) meridian of projection
               RLAT0 selected for convenience
        PS  :  RLON0 identifies central (grid N/S) meridian of projection
               RLAT0 selected for convenience
        EM  :  RLON0 identifies central meridian of projection
               RLAT0 is REPLACED by 0.0N (Equator)
        LAZA:  RLON0 identifies longitude of tangent-point of mapping plane
               RLAT0 identifies latitude of tangent-point of mapping plane

    Matching parallel(s) of latitude (decimal degrees) for projection
    (Used only if PMAP= LCC or PS)
    (XLAT1)                   No Default      ! XLAT1 = 30N !
    (XLAT2)                   No Default      ! XLAT2 = 60N !

        LCC :  Projection cone slices through Earth's surface at XLAT1 and XLAT2
        PS  :  Projection plane slices through Earth at XLAT1
               (XLAT2 is not used)

    ----------
    Note:  Latitudes and longitudes should be positive, and include a
           letter N,S,E, or W indicating north or south latitude, and
           east or west longitude.  For example,
           35.9  N Latitude  =  35.9N
           118.7 E Longitude = 118.7E


    Datum-region
    ------------

    The Datum-Region for the coordinates is identified by a character
    string.  Many mapping products currently available use the model of the
    Earth known as the World Geodetic System 1984 (WGS-84).  Other local
    models may be in use, and their selection in CALMET will make its output
    consistent with local mapping products.  The list of Datum-Regions with
    official transformation parameters is provided by the National Imagery and
    Mapping Agency (NIMA).

    NIMA Datum - Regions(Examples)
    ------------------------------------------------------------------------------
    WGS-84    WGS-84 Reference Ellipsoid and Geoid, Global coverage (WGS84)
    NAS-C     NORTH AMERICAN 1927 Clarke 1866 Spheroid, MEAN FOR CONUS (NAD27)
    NAR-C     NORTH AMERICAN 1983 GRS 80 Spheroid, MEAN FOR CONUS (NAD83)
    NWS-84    NWS 6370KM Radius, Sphere
    ESR-S     ESRI REFERENCE 6371KM Radius, Sphere

    Datum-region for output coordinates
    (DATUM)                   Default: WGS-84    ! DATUM = WGS-84 !


METEOROLOGICAL Grid:

    Rectangular grid defined for projection PMAP,
    with X the Easting and Y the Northing coordinate

           No. X grid cells (NX)      No default     ! NX =  67   !
           No. Y grid cells (NY)      No default     ! NY =  67   !
        No. vertical layers (NZ)      No default     ! NZ =  18   !

          Grid spacing (DGRIDKM)      No default     ! DGRIDKM = 4.0 !
                                      Units: km
```

```
               Cell face heights
                   (ZFACE(nz+1))      No defaults
                                      Units: m
   ! ZFACE = .0, 20.0, 40.0, 80.0, 120.,180.,240.,300.,360.,420.,500.,600.,
             700.,800.,1000.,1200.,1500.,2200.,3000. !

            Reference Coordinates
           of SOUTHWEST corner of
                grid cell(1, 1):

            X coordinate (XORIGKM)     No default     ! XORIGKM = -288.0 !
            Y coordinate (YORIGKM)     No default     ! YORIGKM = -36.0  !
                                     Units: km


COMPUTATIONAL Grid:

     The computational grid is identical to or a subset of the MET. grid.
     The lower left (LL) corner of the computational grid is at grid point
     (IBCOMP, JBCOMP) of the MET. grid.  The upper right (UR) corner of the
     computational grid is at grid point (IECOMP, JECOMP) of the MET. grid.
     The grid spacing of the computational grid is the same as the MET. grid.

        X index of LL corner (IBCOMP)      No default     ! IBCOMP =  1   !
                  (1 <= IBCOMP <= NX)

        Y index of LL corner (JBCOMP)      No default     ! JBCOMP =  1   !
                  (1 <= JBCOMP <= NY)


        X index of UR corner (IECOMP)      No default     ! IECOMP =  67   !
                  (1 <= IECOMP <= NX)

        Y index of UR corner (JECOMP)      No default     ! JECOMP =  67   !
                  (1 <= JECOMP <= NY)



SAMPLING Grid (GRIDDED RECEPTORS):

     The lower left (LL) corner of the sampling grid is at grid point
     (IBSAMP, JBSAMP) of the MET. grid.  The upper right (UR) corner of the
     sampling grid is at grid point (IESAMP, JESAMP) of the MET. grid.
     The sampling grid must be identical to or a subset of the computational
     grid.  It may be a nested grid inside the computational grid.
     The grid spacing of the sampling grid is DGRIDKM/MESHDN.

        Logical flag indicating if gridded
        receptors are used (LSAMP)         Default: T     ! LSAMP = T !
        (T=yes, F=no)

        X index of LL corner (IBSAMP)      No default     ! IBSAMP =   1   !
         (IBCOMP <= IBSAMP <= IECOMP)

        Y index of LL corner (JBSAMP)      No default     ! JBSAMP =   1   !
         (JBCOMP <= JBSAMP <= JECOMP)


        X index of UR corner (IESAMP)      No default     ! IESAMP =  67   !
         (IBCOMP <= IESAMP <= IECOMP)

        Y index of UR corner (JESAMP)      No default     ! JESAMP =  67   !
         (JBCOMP <= JESAMP <= JECOMP)


       Nesting factor of the sampling
        grid (MESHDN)                      Default: 1     ! MESHDN =  1  !
        (MESHDN is an integer >= 1)

!END!


-------------------------------------------------------------------------------
```

```
INPUT GROUP: 5 -- Output Options
--------------
                                          *                          *
     FILE                         DEFAULT VALUE             VALUE THIS RUN
     ----                         -------------             --------------

   Concentrations (ICON)              1                   !  ICON =  1   !
   Dry Fluxes (IDRY)                  1                   !  IDRY =  1   !
   Wet Fluxes (IWET)                  1                   !  IWET =  1   !
   2D Temperature (IT2D)              0                   !  IT2D =  0   !
   2D Density (IRHO)                  0                   !  IRHO =  0   !
   Relative Humidity (IVIS)           1                   !  IVIS =  0   !
    (relative humidity file is
     required for visibility
     analysis)
   Use data compression option in output file?
   (LCOMPRS)                          Default: T          ! LCOMPRS = T !

   *
    0 = Do not create file, 1 = create file


    QA PLOT FILE OUTPUT OPTION:

       Create a standard series of output files (e.g.
       locations of sources, receptors, grids ...)
       suitable for plotting?
       (IQAPLOT)                      Default: 1          !  IQAPLOT =  1   !
         0 = no
         1 = yes

    DIAGNOSTIC PUFF-TRACKING OUTPUT OPTION:

       Puff locations and properties reported to
       PFTRAK.DAT file for postprocessing?
       (IPFTRAK)                      Default: 0          ! IPFTRAK =  0   !
         0 = no
         1 = yes, update puff output at end of each timestep
         2 = yes, update puff output at end of each sampling step

    DIAGNOSTIC MASS FLUX OUTPUT OPTIONS:

       Mass flux across specified boundaries
       for selected species reported?
       (IMFLX)                        Default: 0          ! IMFLX =  0  !
         0 = no
         1 = yes (FLUXBDY.DAT and MASSFLX.DAT filenames
                  are specified in Input Group 0)

       Mass balance for each species
       reported?
       (IMBAL)                        Default: 0          ! IMBAL =  0  !
         0 = no
         1 = yes (MASSBAL.DAT filename is
              specified in Input Group 0)


    NUMERICAL RISE OUTPUT OPTION:

       Create a file with plume properties for each rise
       increment, for each model timestep?
       This applies to sources modeled with numerical rise
       and is limited to ONE source in the run.
       (INRISE)                       Default: 0          ! INRISE =  0  !
         0 = no
         1 = yes (RISE.DAT filename is
                  specified in Input Group 0)


    LINE PRINTER OUTPUT OPTIONS:

       Print concentrations (ICPRT)   Default: 0          ! ICPRT =  1   !
       Print dry fluxes (IDPRT)       Default: 0          ! IDPRT =  0   !
       Print wet fluxes (IWPRT)       Default: 0          ! IWPRT =  0   !
       (0 = Do not print, 1 = Print)
```

```
       Concentration print interval
       (ICFRQ) in timesteps            Default: 1         ! ICFRQ =  1   !
       Dry flux print interval
       (IDFRQ) in timesteps            Default: 1         ! IDFRQ =  1   !
       Wet flux print interval
       (IWFRQ) in timesteps            Default: 1         ! IWFRQ =  1   !

       Units for Line Printer Output
       (IPRTU)                         Default: 1         ! IPRTU =  3   !
                     for              for
                Concentration    Deposition
           1 =       g/m**3         g/m**2/s
           2 =      mg/m**3        mg/m**2/s
           3 =      ug/m**3        ug/m**2/s
           4 =      ng/m**3        ng/m**2/s
           5 =     Odour Units

       Messages tracking progress of run
       written to the screen ?
       (IMESG)                         Default: 2         ! IMESG =  2   !
         0 = no
         1 = yes (advection step, puff ID)
         2 = yes (YYYYJJJHH, # old puffs, # emitted puffs)


     SPECIES (or GROUP for combined species) LIST FOR OUTPUT OPTIONS

                 ---- CONCENTRATIONS ----   ------ DRY FLUXES ------   ------ WET FLUXES ------
-- MASS FLUX --
   SPECIES
   /GROUP        PRINTED?  SAVED ON DISK?   PRINTED?  SAVED ON DISK?   PRINTED?  SAVED ON DISK?
SAVED ON DISK?
   -------       ------------------------   ------------------------   ------------------------
---------------
! SO2  = 0, 1, 0, 1, 0, 1, 0 !
! SO4  = 0, 1, 0, 1, 0, 1, 0 !

  Note:  Species BCON (for MBCON > 0) does not need to be saved on disk.


     OPTIONS FOR PRINTING "DEBUG" QUANTITIES (much output)

       Logical for debug output
       (LDEBUG)                              Default: F     ! LDEBUG = F !

       First puff to track
       (IPFDEB)                              Default: 1     ! IPFDEB =  1  !

       Number of puffs to track
       (NPFDEB)                              Default: 1     ! NPFDEB =  1  !

       Met. period to start output
       (NN1)                                 Default: 1     ! NN1 =  1   !

       Met. period to end output
       (NN2)                                 Default: 10    ! NN2 =  10  !

!END!


------------------------------------------------------------------------------


INPUT GROUP: 6a, 6b, & 6c -- Subgrid scale complex terrain inputs
-------------------------

---------------
Subgroup (6a)
---------------
       Number of terrain features (NHILL)       Default: 0     ! NHILL =  0   !

       Number of special complex terrain
       receptors  (NCTREC)                      Default: 0     ! NCTREC =  0   !
```

```
       Terrain and CTSG Receptor data for
       CTSG hills input in CTDM format ?
       (MHILL)                                  No Default     ! MHILL =  2   !
       1 = Hill and Receptor data created
           by CTDM processors & read from
           HILL.DAT and HILLRCT.DAT files
       2 = Hill data created by OPTHILL &
           input below in Subgroup (6b);
           Receptor data in Subgroup (6c)

       Factor to convert horizontal dimensions  Default: 1.0   ! XHILL2M = 1.0 !
       to meters (MHILL=1)

       Factor to convert vertical dimensions    Default: 1.0   ! ZHILL2M = 1.0 !
       to meters (MHILL=1)

       X-origin of CTDM system relative to      No Default     ! XCTDMKM = 0 !
       CALPUFF coordinate system, in Kilometers (MHILL=1)

       Y-origin of CTDM system relative to      No Default     ! YCTDMKM = 0 !
       CALPUFF coordinate system, in Kilometers (MHILL=1)

! END !

---------------
Subgroup (6b)
---------------

                     1 **
     HILL information


HILL           XC        YC       THETAH  ZGRID  RELIEF    EXPO 1    EXPO 2   SCALE 1    SCALE 2
AMAX1     AMAX2
 NO.           (km)      (km)      (deg.)   (m)     (m)      (m)       (m)       (m)        (m)
(m)       (m)
----          ----      ----      ------  -----  ------    ------    ------   -------    -------
-----     -----

---------------
Subgroup (6c)
---------------

    COMPLEX TERRAIN RECEPTOR INFORMATION

                      XRCT         YRCT        ZRCT          XHH
                      (km)         (km)         (m)
                     ------       -----      ------         ----


-------------------
1
     Description of Complex Terrain Variables:
          XC, YC  = Coordinates of center of hill
          THETAH  = Orientation of major axis of hill (clockwise from
                    North)
          ZGRID   = Height of the  0  of the grid above mean sea
                    level
          RELIEF  = Height of the crest of the hill above the grid elevation
          EXPO 1  = Hill-shape exponent for the major axis
          EXPO 2  = Hill-shape exponent for the major axis
          SCALE 1 = Horizontal length scale along the major axis
          SCALE 2 = Horizontal length scale along the minor axis
          AMAX    = Maximum allowed axis length for the major axis
          BMAX    = Maximum allowed axis length for the major axis

          XRCT, YRCT = Coordinates of the complex terrain receptors
          ZRCT    = Height of the ground (MSL) at the complex terrain
                    Receptor
          XHH     = Hill number associated with each complex terrain receptor
                    (NOTE: MUST BE ENTERED AS A REAL NUMBER)

   **
     NOTE: DATA for each hill and CTSG receptor are treated as a separate
           input subgroup and therefore must end with an input group terminator.
```

```
------------------------------------------------------------------------------


INPUT GROUP: 7 -- Chemical parameters for dry deposition of gases
--------------

      SPECIES     DIFFUSIVITY      ALPHA STAR      REACTIVITY    MESOPHYLL RESISTANCE     HENRY'S
LAW COEFFICIENT
       NAME        (cm**2/s)                                          (s/cm)
(dimensionless)
      -------     -----------      ----------      ----------    --------------------     -------
----------------

! SO2  = 0.1509, 1000,  8, 0, 0.04 !

!END!


------------------------------------------------------------------------------


INPUT GROUP: 8 -- Size parameters for dry deposition of particles
--------------

     For SINGLE SPECIES, the mean and standard deviation are used to
     compute a deposition velocity for NINT (see group 9) size-ranges,
     and these are then averaged to obtain a mean deposition velocity.

     For GROUPED SPECIES, the size distribution should be explicitly
     specified (by the 'species' in the group), and the standard deviation
     for each should be entered as 0.  The model will then use the
     deposition velocity for the stated mean diameter.

      SPECIES      GEOMETRIC MASS MEAN        GEOMETRIC STANDARD
       NAME             DIAMETER                   DEVIATION
                        (microns)                  (microns)
      -------      ------------------        ------------------
! SO4 = 0.48, 2 !

!END!


------------------------------------------------------------------------------


INPUT GROUP: 9 -- Miscellaneous dry deposition parameters
--------------

     Reference cuticle resistance (s/cm)
     (RCUTR)                          Default: 30    !  RCUTR = 30.0 !
     Reference ground resistance  (s/cm)
     (RGR)                            Default: 10    !    RGR = 5.0 !
     Reference pollutant reactivity
     (REACTR)                         Default: 8     ! REACTR = 8.0 !

     Number of particle-size intervals used to
     evaluate effective particle deposition velocity
     (NINT)                           Default: 9     !   NINT =  9  !

     Vegetation state in unirrigated areas
     (IVEG)                           Default: 1     !   IVEG =  1   !
        IVEG=1 for active and unstressed vegetation
        IVEG=2 for active and stressed vegetation
        IVEG=3 for inactive vegetation

!END!


------------------------------------------------------------------------------


INPUT GROUP: 10 -- Wet Deposition Parameters
---------------
```

```
                    Scavenging Coefficient -- Units: (sec)**(-1)

       Pollutant      Liquid Precip.       Frozen Precip.
       ---------      --------------       --------------
! SO2 = 3.00E-05, 0.00E00 !
! SO4 = 1.00E-04, 3.00E-05 !

!END!


------------------------------------------------------------------------------


INPUT GROUP: 11a, 11b -- Chemistry Parameters
---------------------

---------------
Subgroup (11a)
---------------

     Several parameters are needed for one or more of the chemical transformation
     mechanisms.  Those used for each mechanism are:
                                    M                 B
                                    A  B  R  R  R     C  B        N
                                 B  V  C  N  N  N  M  K  C  O     D
                                 C  M  G  K  I  I  I  H  H  K  F  V  E
                              M  K  N  N  N  T  T  T  2  2  P  R  C  C
                              O  O  H  H  H  E  E  E  O  O  M  A  N  A
     Mechanism (MCHEM)        Z  3  3  3  3  1  2  3  2  2  F  C  X  Y
     --------------------   ----------------------------------------
     0 None                   .  .  .  .  .  .  .  .  .  .  .  .  .  .
     1 MESOPUFF II            X  X  .  .  X  X  X  X  .  .  .  .  .  .
     2 User Rates             .  .  .  .  .  .  .  .  .  .  .  .  .  .
     3 RIVAD                  X  X  .  .  X  .  .  .  .  .  .  .  .  .
     4 SOA                    X  X  .  .  .  .  .  .  .  .  X  X  X  .
     5 Radioactive Decay      .  .  .  .  .  .  .  .  .  .  .  .  .  X
     6 RIVAD/ISORRPIA         X  X  X  X  X  X  .  .  X  X  .  .  .  .
     7 RIVAD/ISORRPIA/SOA     X  X  X  X  X  X  .  .  X  X  X  X  .  .


     Ozone data input option (MOZ)     Default: 1           ! MOZ =  0   !
     (Used only if MCHEM = 1, 3, 4, 6, or 7)
        0 = use a monthly background ozone value
        1 = read hourly ozone concentrations from
            the OZONE.DAT data file

     Monthly ozone concentrations in ppb (BCKO3)
     (Used only if MCHEM = 1,3,4,6, or 7 and either
        MOZ = 0, or
        MOZ = 1 and all hourly O3 data missing)
                                       Default: 12*80.
     !  BCKO3 = 40.00, 40.00, 40.00, 40.00, 40.00, 40.00, 40.00, 40.00, 40.00, 40.00, 40.00,
40.00 !

     Ammonia data option (MNH3)        Default: 0           ! MNH3 =  0   !
     (Used only if MCHEM = 6 or 7)
        0 = use monthly background ammonia values (BCKNH3) - no vertical variation
        1 = read monthly background ammonia values for each layer from
            the NH3Z.DAT data file

     Ammonia vertical averaging option (MAVGNH3)
     (Used only if MCHEM = 6 or 7, and MNH3 = 1)
        0 = use NH3 at puff center height (no averaging is done)
        1 = average NH3 values over vertical extent of puff
                                       Default: 1           ! MAVGNH3 =  1   !

     Monthly ammonia concentrations in ppb (BCKNH3)
     (Used only if MCHEM = 1 or 3, or
                if MCHEM = 6 or 7, and MNH3 = 0)
                                       Default: 12*10.
     !  BCKNH3 = 10.00, 10.00, 10.00, 10.00, 10.00, 10.00, 10.00, 10.00, 10.00, 10.00, 10.00,
10.00 !

     Nighttime SO2 loss rate in %/hour (RNITE1)
```

```
    (Used only if MCHEM = 1, 6 or 7)
    This rate is used only at night for MCHEM=1
    and is added to the computed rate both day
    and night for MCHEM=6,7 (heterogeneous reactions)
                                    Default: 0.2          ! RNITE1 = .2 !

    Nighttime NOx loss rate in %/hour (RNITE2)
    (Used only if MCHEM = 1)
                                    Default: 2.0          ! RNITE2 = 2.0 !

    Nighttime HNO3 formation rate in %/hour (RNITE3)
    (Used only if MCHEM = 1)
                                    Default: 2.0          ! RNITE3 = 2.0 !

    H2O2 data input option (MH2O2)    Default: 1          ! MH2O2 =  1   !
    (Used only if MCHEM = 6 or 7, and MAQCHEM = 1)
       0 = use a monthly background H2O2 value
       1 = read hourly H2O2 concentrations from
           the H2O2.DAT data file

    Monthly H2O2 concentrations in ppb (BCKH2O2)
    (Used only if MQACHEM = 1 and either
       MH2O2 = 0 or
       MH2O2 = 1 and all hourly H2O2 data missing)
                                    Default: 12*1.
    !  BCKH2O2 = 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00 !


--- Data for SECONDARY ORGANIC AEROSOL (SOA) Options
    (used only if MCHEM = 4 or 7)

    The MCHEM = 4 SOA module uses monthly values of:
         Fine particulate concentration in ug/m^3 (BCKPMF)
         Organic fraction of fine particulate     (OFRAC)
         VOC / NOX ratio (after reaction)         (VCNX)

    The MCHEM = 7 SOA module uses monthly values of:
         Fine particulate concentration in ug/m^3 (BCKPMF)
         Organic fraction of fine particulate     (OFRAC)

    These characterize the air mass when computing
    the formation of SOA from VOC emissions.
    Typical values for several distinct air mass types are:

       Month    1    2    3    4    5    6    7    8    9   10   11   12
                Jan  Feb  Mar  Apr  May  Jun  Jul  Aug  Sep  Oct  Nov  Dec

    Clean Continental
       BCKPMF   1.   1.   1.   1.   1.   1.   1.   1.   1.   1.   1.   1.
       OFRAC  .15  .15  .20  .20  .20  .20  .20  .20  .20  .20  .20  .15
       VCNX    50.  50.  50.  50.  50.  50.  50.  50.  50.  50.  50.  50.

    Clean Marine (surface)
       BCKPMF  .5   .5   .5   .5   .5   .5   .5   .5   .5   .5   .5   .5
       OFRAC  .25  .25  .30  .30  .30  .30  .30  .30  .30  .30  .30  .25
       VCNX    50.  50.  50.  50.  50.  50.  50.  50.  50.  50.  50.  50.

    Urban - low biogenic (controls present)
       BCKPMF  30.  30.  30.  30.  30.  30.  30.  30.  30.  30.  30.  30.
       OFRAC  .20  .20  .25  .25  .25  .25  .25  .25  .20  .20  .20  .20
       VCNX     4.   4.   4.   4.   4.   4.   4.   4.   4.   4.   4.   4.

    Urban - high biogenic (controls present)
       BCKPMF  60.  60.  60.  60.  60.  60.  60.  60.  60.  60.  60.  60.
       OFRAC  .25  .25  .30  .30  .30  .55  .55  .55  .35  .35  .35  .25
       VCNX    15.  15.  15.  15.  15.  15.  15.  15.  15.  15.  15.  15.

    Regional Plume
       BCKPMF  20.  20.  20.  20.  20.  20.  20.  20.  20.  20.  20.  20.
       OFRAC  .20  .20  .25  .35  .25  .40  .40  .40  .30  .30  .30  .20
       VCNX    15.  15.  15.  15.  15.  15.  15.  15.  15.  15.  15.  15.

    Urban - no controls present
       BCKPMF 100. 100. 100. 100. 100. 100. 100. 100. 100. 100. 100. 100.
       OFRAC  .30  .30  .35  .35  .35  .55  .55  .55  .35  .35  .35  .30
```

```
        VCNX     2.   2.   2.   2.   2.   2.   2.   2.   2.   2.   2.   2.

     Default: Clean Continental
     !  BCKPMF = 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00 !
     !  OFRAC  = 0.15, 0.15, 0.20, 0.20, 0.20, 0.20, 0.20, 0.20, 0.20, 0.20, 0.20, 0.15 !
     !  VCNX   = 50.00, 50.00, 50.00, 50.00, 50.00, 50.00, 50.00, 50.00, 50.00, 50.00, 50.00,
50.00 !

 --- End Data for SECONDARY ORGANIC AEROSOL (SOA) Option


     Number of half-life decay specification blocks provided in Subgroup 11b
     (Used only if MCHEM = 5)
     (NDECAY)                                  Default: 0      ! NDECAY =  0   !

!END!


--------------
Subgroup (11b)
--------------

     Each species modeled may be assigned a decay half-life (sec), and the associated
     mass lost may be assigned to one or more other modeled species using a mass yield
     factor. This information is used only for MCHEM=5.

     Provide NDECAY blocks assigning the half-life for a parent species and mass yield
     factors for each child species (if any) produced by the decay.
     Set HALF_LIFE=0.0 for NO decay (infinite half-life).


                             a           b
        SPECIES      Half-Life   Mass Yield
         NAME          (sec)       Factor
        -------      ---------   ----------

     *   SPEC1   =    3600.,        -1.0   *    (Parent)
     *   SPEC2   =     -1.0,         0.0   *    (Child)
   *END*

--------
    a
     Specify a half life that is greater than or equal to zero for 1 parent species
     in each block, and set the yield factor for this species to -1
    b
     Specify a yield factor that is greater than or equal to zero for 1 or more child
     species in each block, and set the half-life for each of these species to -1

     NOTE: Assignments in each block are treated as a separate input
           subgroup and therefore must end with an input group terminator.
           If NDECAY=0, no assignments and input group terminators should appear.

-------------------------------------------------------------------------------


INPUT GROUP: 12 -- Misc. Dispersion and Computational Parameters
---------------

     Horizontal size of puff (m) beyond which
     time-dependent dispersion equations (Heffter)
     are used to determine sigma-y and
     sigma-z (SYTDEP)                          Default: 550.   ! SYTDEP = 5.5E02 !

     Switch for using Heffter equation for sigma z
     as above (0 = Not use Heffter; 1 = use Heffter
     (MHFTSZ)                                  Default: 0      ! MHFTSZ =  0   !

     Stability class used to determine plume
     growth rates for puffs above the boundary
     layer (JSUP)                              Default: 5      ! JSUP =  5   !

     Vertical dispersion constant for stable
     conditions (k1 in Eqn. 2.7-3)  (CONK1)    Default: 0.01   ! CONK1 = .01 !

     Vertical dispersion constant for neutral/
```

```
unstable conditions (k2 in Eqn. 2.7-4)
(CONK2)                                 Default: 0.1    ! CONK2 = .1 !

Factor for determining Transition-point from
Schulman-Scire to Huber-Snyder Building Downwash
scheme (SS used for Hs < Hb + TBD * HL)
(TBD)                                   Default: 0.5    ! TBD = .5 !
   TBD < 0   ==> always use Huber-Snyder
   TBD = 1.5 ==> always use Schulman-Scire
   TBD = 0.5 ==> ISC Transition-point

Range of land use categories for which
urban dispersion is assumed
(IURB1, IURB2)                          Default: 10     ! IURB1 =  10  !
                                                 19     ! IURB2 =  19  !

Site characterization parameters for single-point Met data files ---------
(needed for METFM = 2,3,4,5)

   Land use category for modeling domain
   (ILANDUIN)                           Default: 20     ! ILANDUIN =  20  !

   Roughness length (m) for modeling domain
   (Z0IN)                               Default: 0.25   ! Z0IN = .25 !

   Leaf area index for modeling domain
   (XLAIIN)                             Default: 3.0    ! XLAIIN = 3.0 !

   Elevation above sea level (m)
   (ELEVIN)                             Default: 0.0    ! ELEVIN = .0 !

   Latitude (degrees) for met location
   (XLATIN)                             Default: -999.  ! XLATIN = .0 !

   Longitude (degrees) for met location
   (XLONIN)                             Default: -999.  ! XLONIN = .0 !

Specialized information for interpreting single-point Met data files -----

   Anemometer height (m) (Used only if METFM = 2,3)
   (ANEMHT)                             Default: 10.    ! ANEMHT = 10.0 !

   Form of lateral turbulance data in PROFILE.DAT file
   (Used only if METFM = 4,5 or MTURBVW = 1 or 3)
   (ISIGMAV)                            Default: 1      ! ISIGMAV =  1  !
       0 = read sigma-theta
       1 = read sigma-v

   Choice of mixing heights (Used only if METFM = 4)
   (IMIXCTDM)                           Default: 0      ! IMIXCTDM =  0  !
       0 = read PREDICTED mixing heights
       1 = read OBSERVED mixing heights

Maximum length of a slug (met. grid units)
(XMXLEN)                                Default: 1.0    ! XMXLEN = 1.0 !

Maximum travel distance of a puff/slug (in
grid units) during one sampling step
(XSAMLEN)                               Default: 1.0    ! XSAMLEN = 1.0 !

Maximum Number of slugs/puffs release from
one source during one time step
(MXNEW)                                 Default: 99     ! MXNEW =  99   !

Maximum Number of sampling steps for
one puff/slug during one time step
(MXSAM)                                 Default: 99     ! MXSAM =  99   !

Number of iterations used when computing
the transport wind for a sampling step
that includes gradual rise (for CALMET
and PROFILE winds)
(NCOUNT)                                Default: 2      ! NCOUNT =  2   !

Minimum sigma y for a new puff/slug (m)
```

```
     (SYMIN)                                  Default: 1.0    ! SYMIN = 1.0  !

     Minimum sigma z for a new puff/slug (m)
     (SZMIN)                                  Default: 1.0    ! SZMIN = 1.0  !

     Maximum sigma z (m) allowed to avoid
     numerical problem in calculating virtual
     time or distance.  Cap should be large
     enough to have no influence on normal events.
     Enter a negative cap to disable.
     (SZCAP_M)                                Default: 5.0e06 ! SZCAP_M = 5.0E06 !

     Default minimum turbulence velocities sigma-v and sigma-w
     for each stability class over land and over water (m/s)
     (SVMIN(12) and SWMIN(12))

                    ----------  LAND  ----------       ---------  WATER  ----------
        Stab Class :  A    B    C    D    E    F        A    B    C    D    E    F
                    ---  ---  ---  ---  ---  ---       ---  ---  ---  ---  ---  ---
     Default SVMIN : .50, .50, .50, .50, .50, .50,      .37, .37, .37, .37, .37, .37
     Default SWMIN : .20, .12, .08, .06, .03, .016,     .20, .12, .08, .06, .03, .016

          ! SVMIN = 0.500, 0.500, 0.500, 0.500, 0.500, 0.500, 0.370, 0.370, 0.370, 0.370, 0.370,
0.370!
          ! SWMIN = 0.200, 0.120, 0.080, 0.060, 0.030, 0.016, 0.200, 0.120, 0.080, 0.060, 0.030,
0.016!

     Divergence criterion for dw/dz across puff
     used to initiate adjustment for horizontal
     convergence (1/s)
     Partial adjustment starts at CDIV(1), and
     full adjustment is reached at CDIV(2)
     (CDIV(2))                                Default: 0.0,0.0  ! CDIV = .0, .0 !

     Search radius (number of cells) for nearest
     land and water cells used in the subgrid
     TIBL module
     (NLUTIBL)                                Default: 4      ! NLUTIBL =  4  !

     Minimum wind speed (m/s) allowed for
     non-calm conditions. Also used as minimum
     speed returned when using power-law
     extrapolation toward surface
     (WSCALM)                                 Default: 0.5    ! WSCALM = .5 !

     Maximum mixing height (m)
     (XMAXZI)                                 Default: 3000.  ! XMAXZI = 3000.0 !

     Minimum mixing height (m)
     (XMINZI)                                 Default: 50.    ! XMINZI = 20.0 !

     Default wind speed classes --
     5 upper bounds (m/s) are entered;
     the 6th class has no upper limit
     (WSCAT(5))                       Default   :
                                      ISC RURAL : 1.54, 3.09, 5.14, 8.23, 10.8 (10.8+)

                                Wind Speed Class :  1     2     3     4     5
                                                   ---   ---   ---   ---   ---
                                        ! WSCAT = 1.54, 3.09, 5.14, 8.23, 10.80 !

     Default wind speed profile power-law
     exponents for stabilities 1-6
     (PLX0(6))                        Default   : ISC RURAL values
                                      ISC RURAL : .07, .07, .10, .15, .35, .55
                                      ISC URBAN : .15, .15, .20, .25, .30, .30

                                 Stability Class :  A     B     C     D     E     F
                                                   ---   ---   ---   ---   ---   ---
                                          ! PLX0 = 0.07, 0.07, 0.10, 0.15, 0.35, 0.55 !

     Default potential temperature gradient
     for stable classes E, F (degK/m)
     (PTG0(2))                        Default: 0.020, 0.035
                                         ! PTG0 = 0.020,   0.035 !
```

```
Default plume path coefficients for
each stability class (used when option
for partial plume height terrain adjustment
is selected -- MCTADJ=3)
(PPC(6))                  Stability Class :  A     B     C     D     E     F
                             Default  PPC : .50,  .50,  .50,  .50,  .35,  .35
                                           ---   ---   ---   ---   ---   ---
                                    !  PPC = 0.50, 0.50, 0.50, 0.50, 0.35, 0.35 !

Slug-to-puff transition criterion factor
equal to sigma-y/length of slug
(SL2PF)                              Default: 10.        ! SL2PF = 10.0 !

Puff-splitting control variables -----------------------

  VERTICAL SPLIT
  --------------

  Number of puffs that result every time a puff
  is split - nsplit=2 means that 1 puff splits
  into 2
  (NSPLIT)                           Default:   3        ! NSPLIT =  3  !

  Time(s) of a day when split puffs are eligible to
  be split once again; this is typically set once
  per day, around sunset before nocturnal shear develops.
  24 values: 0 is midnight (00:00) and 23 is 11 PM (23:00)
  0=do not re-split    1=eligible for re-split
  (IRESPLIT(24))                     Default:  Hour 17 = 1
  !  IRESPLIT = 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0 !

  Split is allowed only if last hour's mixing
  height (m) exceeds a minimum value
  (ZISPLIT)                          Default: 100.       ! ZISPLIT = 100.0 !

  Split is allowed only if ratio of last hour's
  mixing ht to the maximum mixing ht experienced
  by the puff is less than a maximum value (this
  postpones a split until a nocturnal layer develops)
  (ROLDMAX)                          Default: 0.25       ! ROLDMAX = 0.25 !


  HORIZONTAL SPLIT
  ----------------

  Number of puffs that result every time a puff
  is split - nsplith=5 means that 1 puff splits
  into 5
  (NSPLITH)                          Default:   5        ! NSPLITH =  5  !

  Minimum sigma-y (Grid Cells Units) of puff
  before it may be split
  (SYSPLITH)                         Default:  1.0       ! SYSPLITH = 1.0 !

  Minimum puff elongation rate (SYSPLITH/hr) due to
  wind shear, before it may be split
  (SHSPLITH)                         Default:  2.        ! SHSPLITH = 2.0 !

  Minimum concentration (g/m^3) of each
  species in puff before it may be split
  Enter array of NSPEC values; if a single value is
  entered, it will be used for ALL species
  (CNSPLITH)                         Default:  1.0E-07   ! CNSPLITH = 1.0E-07 !

Integration control variables ------------------------

  Fractional convergence criterion for numerical SLUG
  sampling integration
  (EPSSLUG)                          Default:   1.0e-04  ! EPSSLUG = 1.0E-04 !

  Fractional convergence criterion for numerical AREA
  source integration
  (EPSAREA)                          Default:   1.0e-06  ! EPSAREA = 1.0E-06 !
```

```
       Trajectory step-length (m) used for numerical rise
       integration
       (DSRISE)                          Default:   1.0      ! DSRISE = 1.0 !

       Boundary Condition (BC) Puff control variables -----------------------

       Minimum height (m) to which BC puffs are mixed as they are emitted
       (MBCON=2 ONLY).  Actual height is reset to the current mixing height
       at the release point if greater than this minimum.
       (HTMINBC)                         Default:   500.     ! HTMINBC = 500.0 !

       Search radius (km) about a receptor for sampling nearest BC puff.
       BC puffs are typically emitted with a spacing of one grid cell
       length, so the search radius should be greater than DGRIDKM.
       (RSAMPBC)                         Default:   10.      ! RSAMPBC = 10.0 !

       Near-Surface depletion adjustment to concentration profile used when
       sampling BC puffs?
       (MDEPBC)                          Default:   1        ! MDEPBC =  1  !
          0 = Concentration is NOT adjusted for depletion
          1 = Adjust Concentration for depletion

!END!


--------------------------------------------------------------------------------


INPUT GROUPS: 13a, 13b, 13c, 13d -- Point source parameters
--------------------------------

---------------
Subgroup (13a)
---------------

     Number of point sources with
     parameters provided below      (NPT1)  No default  !  NPT1 =   129!

     Units used for point source
     emissions below                (IPTU)  Default: 1  !  IPTU =   4  !
           1 =        g/s
           2 =       kg/hr
           3 =       lb/hr
           4 =     tons/yr
           5 =     Odour Unit * m**3/s  (vol. flux of odour compound)
           6 =     Odour Unit * m**3/min
           7 =     metric tons/yr
           8 =     Bq/s  (Bq = becquerel = disintegrations/s)
           9 =     GBq/yr

     Number of source-species
     combinations with variable
     emissions scaling factors
     provided below in (13d)        (NSPT1) Default: 0  !  NSPT1 =  0  !

     Number of point sources with
     variable emission parameters
     provided in external file      (NPT2)  No default  !  NPT2 =  0  !

     (If NPT2 > 0, these point
     source emissions are read from
     the file: PTEMARB.DAT)

!END!

---------------
Subgroup (13b)
---------------
                                    a
          POINT SOURCE: CONSTANT DATA
          ---------------------------
                                                                        b          c
  Source       X         Y       Stack    Base     Stack    Exit  Exit    Bldg.  Emission
   No.     Coordinate Coordinate Height Elevation Diameter  Vel.  Temp.   Dwash   Rates
              (km)      (km)       (m)      (m)       (m)  (m/s) (deg. K)
```

```
------   ---------- ---------- ------  ------   -------- ----- -------- ----- --------
   1 ! SRCNAM =         0001 !
   1 ! X =  -137.27,   35.71,   18.29,  181.00,    1.90,       30.08,  432.59, 0.0,    925.21,
0.00 !
   1 ! ZPLTFM  = 0.0  !
   1 ! FMFAC   = 1.0  ! !END!
   2 ! SRCNAM =         0002 !
   2 ! X =  -148.19,  111.81,   76.20,   54.00,    1.68,       31.16,  546.48, 0.0,    658.64,
0.00 !
   2 ! ZPLTFM  = 0.0  !
   2 ! FMFAC   = 1.0  ! !END!
   3 ! SRCNAM =         0003 !
   3 ! X =  -148.19,  111.81,   76.20,   54.00,    1.68,       31.16,  504.82, 0.0,    480.99,
0.00 !
   3 ! ZPLTFM  = 0.0  !
   3 ! FMFAC   = 1.0  ! !END!
   4 ! SRCNAM =         0004 !
   4 ! X =  -133.46,  112.31,  100.58,    5.00,    0.99,       12.42,  352.59, 0.0,    338.22,
0.00 !
   4 ! ZPLTFM  = 0.0  !
   4 ! FMFAC   = 1.0  ! !END!
   5 ! SRCNAM =         0005 !
   5 ! X =  -137.67,  113.28,   60.96,    1.00,    1.22,       30.80,  343.71, 0.0,    334.26,
0.00 !
   5 ! ZPLTFM  = 0.0  !
   5 ! FMFAC   = 1.0  ! !END!
   6 ! SRCNAM =         0006 !
   6 ! X =  -137.58,  112.07,   49.38,   12.00,    2.43,       15.44,  588.71, 0.0,    244.08,
0.00 !
   6 ! ZPLTFM  = 0.0  !
   6 ! FMFAC   = 1.0  ! !END!
   7 ! SRCNAM =         0007 !
   7 ! X =  -137.56,  112.06,   49.38,   12.00,    2.43,       15.44,  588.71, 0.0,    224.20,
0.00 !
   7 ! ZPLTFM  = 0.0  !
   7 ! FMFAC   = 1.0  ! !END!
   8 ! SRCNAM =         0008 !
   8 ! X =  -160.95,  102.59,   45.72,    5.00,    1.82,        5.99,  357.59, 0.0,    215.91,
0.00 !
   8 ! ZPLTFM  = 0.0  !
   8 ! FMFAC   = 1.0  ! !END!
   9 ! SRCNAM =         0009 !
   9 ! X =  -137.57,  112.07,   49.38,   12.00,    2.43,       15.44,  588.71, 0.0,    186.22,
0.00 !
   9 ! ZPLTFM  = 0.0  !
   9 ! FMFAC   = 1.0  ! !END!
  10 ! SRCNAM =         0010 !
  10 ! X =  -161.65,  103.54,   45.72,   25.00,    2.41,       41.47,  615.93, 0.0,    162.77,
0.00 !
  10 ! ZPLTFM  = 0.0  !
  10 ! FMFAC   = 1.0  ! !END!
  11 ! SRCNAM =         0011 !
  11 ! X =  -147.89,   84.81,   39.62,    8.00,    1.52,       17.74,  692.59, 0.0,    122.58,
0.00 !
  11 ! ZPLTFM  = 0.0  !
  11 ! FMFAC   = 1.0  ! !END!
  12 ! SRCNAM =         0012 !
  12 ! X =  -138.32,  111.63,   19.81,   21.00,    0.25,       20.17, 1271.48, 0.0,    117.15,
0.00 !
  12 ! ZPLTFM  = 0.0  !
  12 ! FMFAC   = 1.0  ! !END!
  13 ! SRCNAM =         0013 !
  13 ! X =  -133.46,  112.31,  106.68,    5.00,    3.66,       16.22,  543.71, 0.0,    104.86,
0.00 !
  13 ! ZPLTFM  = 0.0  !
  13 ! FMFAC   = 1.0  ! !END!
  14 ! SRCNAM =         0014 !
  14 ! X =  -133.46,  112.31,  100.58,    5.00,    2.13,        3.30,  593.71, 0.0,    101.84,
0.00 !
  14 ! ZPLTFM  = 0.0  !
  14 ! FMFAC   = 1.0  ! !END!
  15 ! SRCNAM =         0015 !
  15 ! X =  -126.81,  113.95,   30.48,    2.00,    1.60,       14.49,  427.59, 0.0,     80.38,
0.00 !
  15 ! ZPLTFM  = 0.0  !
```

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  15 ! FMFAC   = 1.0  ! !END!
  16 ! SRCNAM =         0016 !
  16 ! X =  -131.85,   66.78,   14.63,   15.00,    9.73,        0.89,  532.59, 0.0,     74.46,
0.00 !
  16 ! ZPLTFM  = 0.0  !
  16 ! FMFAC   = 1.0  ! !END!
  17 ! SRCNAM =         0017 !
  17 ! X =  -138.32,  111.63,   54.86,   21.00,    2.74,        9.77,  465.93, 0.0,     68.92,
0.00 !
  17 ! ZPLTFM  = 0.0  !
  17 ! FMFAC   = 1.0  ! !END!
  18 ! SRCNAM =         0018 !
  18 ! X =  -117.13,  109.24,   20.73,   26.00,    0.14,       21.55,  294.82, 0.0,     60.48,
0.00 !
  18 ! ZPLTFM  = 0.0  !
  18 ! FMFAC   = 1.0  ! !END!
  19 ! SRCNAM =         0019 !
  19 ! X =  -137.54,  111.96,  106.68,   12.00,    5.48,        8.14,  699.82, 0.0,     56.56,
0.00 !
  19 ! ZPLTFM  = 0.0  !
  19 ! FMFAC   = 1.0  ! !END!
  20 ! SRCNAM =         0020 !
  20 ! X =  -140.15,  117.93,  108.81,   55.00,    1.19,       18.29, 1143.71, 0.0,     49.46,
0.00 !
  20 ! ZPLTFM  = 0.0  !
  20 ! FMFAC   = 1.0  ! !END!
  21 ! SRCNAM =         0021 !
  21 ! X =  -149.08,  114.47,   82.91,   37.00,    2.74,        4.15,  504.82, 0.0,     48.30,
0.00 !
  21 ! ZPLTFM  = 0.0  !
  21 ! FMFAC   = 1.0  ! !END!
  22 ! SRCNAM =         0022 !
  22 ! X =  -109.42,  110.53,   24.38,   10.00,    1.60,       14.49,  427.59, 0.0,     42.46,
0.00 !
  22 ! ZPLTFM  = 0.0  !
  22 ! FMFAC   = 1.0  ! !END!
  23 ! SRCNAM =         0023 !
  23 ! X =  -145.06,   82.64,   15.24,    2.00,    1.62,       12.53,  438.71, 0.0,     41.71,
0.00 !
  23 ! ZPLTFM  = 0.0  !
  23 ! FMFAC   = 1.0  ! !END!
  24 ! SRCNAM =         0024 !
  24 ! X =  -116.92,  112.58,   20.73,    4.00,    0.14,       21.55,  294.82, 0.0,     41.44,
0.00 !
  24 ! ZPLTFM  = 0.0  !
  24 ! FMFAC   = 1.0  ! !END!
  25 ! SRCNAM =         0025 !
  25 ! X =  -104.87,   77.86,   15.24,  164.00,    3.66,       15.73, 1032.59, 0.0,     36.01,
0.00 !
  25 ! ZPLTFM  = 0.0  !
  25 ! FMFAC   = 1.0  ! !END!
  26 ! SRCNAM =         0026 !
  26 ! X =  -137.27,  111.95,  106.68,   12.00,    5.48,       10.18,  699.82, 0.0,     35.62,
0.00 !
  26 ! ZPLTFM  = 0.0  !
  26 ! FMFAC   = 1.0  ! !END!
  27 ! SRCNAM =         0027 !
  27 ! X =  -138.32,  111.63,   60.96,   21.00,    3.37,        6.95,  421.48, 0.0,     35.58,
0.00 !
  27 ! ZPLTFM  = 0.0  !
  27 ! FMFAC   = 1.0  ! !END!
  28 ! SRCNAM =         0028 !
  28 ! X =  -137.95,  112.20,    6.10,    6.00,    0.24,       20.17, 1271.48, 0.0,     31.35,
0.00 !
  28 ! ZPLTFM  = 0.0  !
  28 ! FMFAC   = 1.0  ! !END!
  29 ! SRCNAM =         0029 !
  29 ! X =  -138.32,  111.63,   45.72,   21.00,    2.64,        3.99,  615.93, 0.0,     30.92,
0.00 !
  29 ! ZPLTFM  = 0.0  !
  29 ! FMFAC   = 1.0  ! !END!
  30 ! SRCNAM =         0030 !
  30 ! X =  -148.42,  115.71,   44.50,   68.00,    2.49,        4.75,  685.93, 0.0,     29.86,
0.00 !
  30 ! ZPLTFM  = 0.0  !
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  30 ! FMFAC   = 1.0  ! !END!
  31 ! SRCNAM =         0031 !
  31 ! X =  -158.40,   58.83,   30.48,  116.00,    0.42,        1.26,  310.93, 0.0,     29.80,
0.00 !
  31 ! ZPLTFM  = 0.0  !
  31 ! FMFAC   = 1.0  ! !END!
  32 ! SRCNAM =         0032 !
  32 ! X =  -161.30,  103.91,   73.15,    2.00,    3.73,        6.81,  949.82, 0.0,     29.50,
0.00 !
  32 ! ZPLTFM  = 0.0  !
  32 ! FMFAC   = 1.0  ! !END!
  33 ! SRCNAM =         0033 !
  33 ! X =  -137.58,  112.07,   49.38,   12.00,    2.43,       15.44,  588.71, 0.0,     29.25,
0.00 !
  33 ! ZPLTFM  = 0.0  !
  33 ! FMFAC   = 1.0  ! !END!
  34 ! SRCNAM =         0034 !
  34 ! X =  -148.42,  115.71,   32.00,   68.00,    1.37,       15.51,  604.82, 0.0,     28.80,
0.00 !
  34 ! ZPLTFM  = 0.0  !
  34 ! FMFAC   = 1.0  ! !END!
  35 ! SRCNAM =         0035 !
  35 ! X =  -148.42,  115.71,   76.20,   68.00,    1.07,        0.77,  810.93, 0.0,     28.40,
0.00 !
  35 ! ZPLTFM  = 0.0  !
  35 ! FMFAC   = 1.0  ! !END!
  36 ! SRCNAM =         0036 !
  36 ! X =  -161.31,  103.91,   73.15,    2.00,    3.73,        6.81,  949.82, 0.0,     28.34,
0.00 !
  36 ! ZPLTFM  = 0.0  !
  36 ! FMFAC   = 1.0  ! !END!
  37 ! SRCNAM =         0037 !
  37 ! X =  -107.20,  110.46,   24.38,    4.00,    1.60,       14.49,  427.59, 0.0,     25.77,
0.00 !
  37 ! ZPLTFM  = 0.0  !
  37 ! FMFAC   = 1.0  ! !END!
  38 ! SRCNAM =         0038 !
  38 ! X =  -138.32,  111.63,   45.42,   21.00,    1.20,        1.00,  421.48, 0.0,     25.18,
0.00 !
  38 ! ZPLTFM  = 0.0  !
  38 ! FMFAC   = 1.0  ! !END!
  39 ! SRCNAM =         0039 !
  39 ! X =  -175.62,  128.47,   15.24,    0.00,    3.66,        5.02, 1365.93, 0.0,     25.13,
0.00 !
  39 ! ZPLTFM  = 0.0  !
  39 ! FMFAC   = 1.0  ! !END!
  40 ! SRCNAM =         0040 !
  40 ! X =  -149.15,  114.66,   53.95,   37.00,    1.83,        8.08,  660.93, 0.0,     24.93,
0.00 !
  40 ! ZPLTFM  = 0.0  !
  40 ! FMFAC   = 1.0  ! !END!
  41 ! SRCNAM =         0041 !
  41 ! X =  -162.46,  104.83,   45.72,    1.00,    1.82,        2.55,  587.59, 0.0,     24.72,
0.00 !
  41 ! ZPLTFM  = 0.0  !
  41 ! FMFAC   = 1.0  ! !END!
  42 ! SRCNAM =         0042 !
  42 ! X =  -137.56,  112.06,   49.38,   12.00,    2.43,       15.44,  588.71, 0.0,     24.54,
0.00 !
  42 ! ZPLTFM  = 0.0  !
  42 ! FMFAC   = 1.0  ! !END!
  43 ! SRCNAM =         0043 !
  43 ! X =  -162.43,  104.81,   45.72,    1.00,    2.54,        2.66,  588.71, 0.0,     22.77,
0.00 !
  43 ! ZPLTFM  = 0.0  !
  43 ! FMFAC   = 1.0  ! !END!
  44 ! SRCNAM =         0044 !
  44 ! X =  -175.62,  128.47,   12.19,    0.00,    3.64,        2.76, 1032.59, 0.0,     22.53,
0.00 !
  44 ! ZPLTFM  = 0.0  !
  44 ! FMFAC   = 1.0  ! !END!
  45 ! SRCNAM =         0045 !
  45 ! X =  -161.74,  104.68,   35.66,    5.00,    1.52,       14.02,  490.93, 0.0,     21.23,
0.00 !
  45 ! ZPLTFM  = 0.0  !
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  45 ! FMFAC   = 1.0  ! !END!
  46 ! SRCNAM =         0046 !
  46 ! X =  -162.48,  104.86,   45.72,    1.00,    1.82,        2.55,  587.59, 0.0,     18.95,
0.00 !
  46 ! ZPLTFM  = 0.0  !
  46 ! FMFAC   = 1.0  ! !END!
  47 ! SRCNAM =         0047 !
  47 ! X =  -137.38,  112.05,  106.68,   12.00,    3.06,       12.09,  671.48, 0.0,     18.44,
0.00 !
  47 ! ZPLTFM  = 0.0  !
  47 ! FMFAC   = 1.0  ! !END!
  48 ! SRCNAM =         0048 !
  48 ! X =  -137.27,  111.95,  106.68,   12.00,    5.48,       10.18,  699.82, 0.0,     18.34,
0.00 !
  48 ! ZPLTFM  = 0.0  !
  48 ! FMFAC   = 1.0  ! !END!
  49 ! SRCNAM =         0049 !
  49 ! X =  -148.42,  115.71,   41.76,   68.00,    1.90,        4.68,  643.71, 0.0,     16.81,
0.00 !
  49 ! ZPLTFM  = 0.0  !
  49 ! FMFAC   = 1.0  ! !END!
  50 ! SRCNAM =         0050 !
  50 ! X =  -137.38,  112.05,  106.68,   12.00,    3.06,       12.09,  671.48, 0.0,     16.61,
0.00 !
  50 ! ZPLTFM  = 0.0  !
  50 ! FMFAC   = 1.0  ! !END!
  51 ! SRCNAM =         0051 !
  51 ! X =  -137.38,  112.05,  106.68,   12.00,    3.06,       12.09,  671.48, 0.0,     16.30,
0.00 !
  51 ! ZPLTFM  = 0.0  !
  51 ! FMFAC   = 1.0  ! !END!
  52 ! SRCNAM =         0052 !
  52 ! X =  -149.10,  114.49,   38.10,   37.00,    1.88,        2.89,  699.82, 0.0,     16.29,
0.00 !
  52 ! ZPLTFM  = 0.0  !
  52 ! FMFAC   = 1.0  ! !END!
  53 ! SRCNAM =         0053 !
  53 ! X =  -133.46,  112.31,    8.23,    5.00,    0.61,        4.37,  495.93, 0.0,     16.26,
0.00 !
  53 ! ZPLTFM  = 0.0  !
  53 ! FMFAC   = 1.0  ! !END!
  54 ! SRCNAM =         0054 !
  54 ! X =  -133.46,  112.31,    8.23,    5.00,    0.61,        4.37,  495.93, 0.0,     16.26,
0.00 !
  54 ! ZPLTFM  = 0.0  !
  54 ! FMFAC   = 1.0  ! !END!
  55 ! SRCNAM =         0055 !
  55 ! X =  -148.42,  115.71,   32.00,   68.00,    3.06,       20.90,  438.71, 0.0,     15.06,
0.00 !
  55 ! ZPLTFM  = 0.0  !
  55 ! FMFAC   = 1.0  ! !END!
  56 ! SRCNAM =         0056 !
  56 ! X =  -148.42,  115.71,   32.00,   68.00,    3.06,       20.90,  438.71, 0.0,     14.90,
0.00 !
  56 ! ZPLTFM  = 0.0  !
  56 ! FMFAC   = 1.0  ! !END!
  57 ! SRCNAM =         0057 !
  57 ! X =  -139.61,  116.99,  108.20,   19.00,    0.39,        6.16,  921.48, 0.0,     14.39,
0.00 !
  57 ! ZPLTFM  = 0.0  !
  57 ! FMFAC   = 1.0  ! !END!
  58 ! SRCNAM =         0058 !
  58 ! X =  -137.27,  111.95,  106.68,   12.00,    5.48,       10.18,  699.82, 0.0,     13.89,
0.00 !
  58 ! ZPLTFM  = 0.0  !
  58 ! FMFAC   = 1.0  ! !END!
  59 ! SRCNAM =         0059 !
  59 ! X =  -148.42,  115.71,   32.00,   68.00,    3.06,       20.90,  438.71, 0.0,     13.18,
0.00 !
  59 ! ZPLTFM  = 0.0  !
  59 ! FMFAC   = 1.0  ! !END!
  60 ! SRCNAM =         0060 !
  60 ! X =  -148.42,  115.71,   32.00,   68.00,    1.37,       15.51,  532.59, 0.0,     13.12,
0.00 !
  60 ! ZPLTFM  = 0.0  !
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  60 ! FMFAC   = 1.0  ! !END!
  61 ! SRCNAM =         0061 !
  61 ! X =  -149.43,  115.23,   45.72,   -2.00,    2.21,       15.51,  576.48, 0.0,     12.83,
0.00 !
  61 ! ZPLTFM  = 0.0  !
  61 ! FMFAC   = 1.0  ! !END!
  62 ! SRCNAM =         0062 !
  62 ! X =  -148.00,   85.00,   39.62,    8.00,    1.52,       11.76,  629.82, 0.0,     12.73,
0.00 !
  62 ! ZPLTFM  = 0.0  !
  62 ! FMFAC   = 1.0  ! !END!
  63 ! SRCNAM =         0063 !
  63 ! X =  -137.27,  111.95,  106.68,   12.00,    5.48,       10.18,  699.82, 0.0,     12.34,
0.00 !
  63 ! ZPLTFM  = 0.0  !
  63 ! FMFAC   = 1.0  ! !END!
  64 ! SRCNAM =         0064 !
  64 ! X =  -140.15,  117.93,   67.06,   55.00,    0.61,       18.33,  307.59, 0.0,     12.20,
0.00 !
  64 ! ZPLTFM  = 0.0  !
  64 ! FMFAC   = 1.0  ! !END!
  65 ! SRCNAM =         0065 !
  65 ! X =  -133.46,  112.31,   13.72,    5.00,    1.22,        2.63,  299.82, 0.0,     12.05,
0.00 !
  65 ! ZPLTFM  = 0.0  !
  65 ! FMFAC   = 1.0  ! !END!
  66 ! SRCNAM =         0066 !
  66 ! X =  -149.26,  114.75,   38.10,   30.00,    1.98,        2.60,  515.93, 0.0,     12.02,
0.00 !
  66 ! ZPLTFM  = 0.0  !
  66 ! FMFAC   = 1.0  ! !END!
  67 ! SRCNAM =         0067 !
  67 ! X =  -148.42,  115.71,   36.58,   68.00,    1.55,        3.25,  660.93, 0.0,     11.27,
0.00 !
  67 ! ZPLTFM  = 0.0  !
  67 ! FMFAC   = 1.0  ! !END!
  68 ! SRCNAM =         0068 !
  68 ! X =  -148.42,  115.71,   36.58,   68.00,    1.91,        3.31,  610.93, 0.0,     10.80,
0.00 !
  68 ! ZPLTFM  = 0.0  !
  68 ! FMFAC   = 1.0  ! !END!
  69 ! SRCNAM =         0069 !
  69 ! X =  -137.54,  111.96,  106.68,   12.00,    5.48,        8.14,  699.82, 0.0,     10.48,
0.00 !
  69 ! ZPLTFM  = 0.0  !
  69 ! FMFAC   = 1.0  ! !END!
  70 ! SRCNAM =         0070 !
  70 ! X =  -161.33,  103.91,   47.24,    2.00,    2.92,        7.59,  810.93, 0.0,     10.44,
0.00 !
  70 ! ZPLTFM  = 0.0  !
  70 ! FMFAC   = 1.0  ! !END!
  71 ! SRCNAM =         0071 !
  71 ! X =  -133.46,  112.31,   48.77,    5.00,    0.61,        6.16, 1091.48, 0.0,     10.29,
0.00 !
  71 ! ZPLTFM  = 0.0  !
  71 ! FMFAC   = 1.0  ! !END!
  72 ! SRCNAM =         0072 !
  72 ! X =  -161.65,  103.54,   42.67,   25.00,    3.51,       10.76,  532.59, 0.0,     10.07,
0.00 !
  72 ! ZPLTFM  = 0.0  !
  72 ! FMFAC   = 1.0  ! !END!
  73 ! SRCNAM =         0073 !
  73 ! X =  -138.32,  111.63,   74.68,   21.00,    3.78,       19.99,  421.48, 0.0,      9.92,
0.00 !
  73 ! ZPLTFM  = 0.0  !
  73 ! FMFAC   = 1.0  ! !END!
  74 ! SRCNAM =         0074 !
  74 ! X =  -137.27,  111.95,  106.68,   12.00,    5.48,       10.18,  699.82, 0.0,      9.74,
0.00 !
  74 ! ZPLTFM  = 0.0  !
  74 ! FMFAC   = 1.0  ! !END!
  75 ! SRCNAM =         0075 !
  75 ! X =  -133.54,  111.75,  106.68,    7.00,    4.58,        4.31,  477.59, 0.0,      9.74,
0.00 !
  75 ! ZPLTFM  = 0.0  !
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  75 ! FMFAC   = 1.0  ! !END!
  76 ! SRCNAM =         0076 !
  76 ! X =  -149.26,  114.75,   38.10,   30.00,    1.98,        2.60,  515.93, 0.0,      9.71,
0.00 !
  76 ! ZPLTFM  = 0.0  !
  76 ! FMFAC   = 1.0  ! !END!
  77 ! SRCNAM =         0077 !
  77 ! X =  -138.32,  111.63,   74.68,   21.00,    3.78,       19.99,  421.48, 0.0,      9.63,
0.00 !
  77 ! ZPLTFM  = 0.0  !
  77 ! FMFAC   = 1.0  ! !END!
  78 ! SRCNAM =         0078 !
  78 ! X =  -137.54,  111.96,  106.68,   12.00,    5.48,        8.14,  699.82, 0.0,      9.27,
0.00 !
  78 ! ZPLTFM  = 0.0  !
  78 ! FMFAC   = 1.0  ! !END!
  79 ! SRCNAM =         0079 !
  79 ! X =  -137.57,  112.07,   49.38,   12.00,    2.43,       15.44,  588.71, 0.0,      8.56,
0.00 !
  79 ! ZPLTFM  = 0.0  !
  79 ! FMFAC   = 1.0  ! !END!
  80 ! SRCNAM =         0080 !
  80 ! X =  -138.32,  111.63,   45.42,   21.00,    1.20,        1.00,  421.48, 0.0,      7.64,
0.00 !
  80 ! ZPLTFM  = 0.0  !
  80 ! FMFAC   = 1.0  ! !END!
  81 ! SRCNAM =         0081 !
  81 ! X =  -149.26,  114.75,   38.10,   30.00,    1.98,        2.60,  515.93, 0.0,      7.54,
0.00 !
  81 ! ZPLTFM  = 0.0  !
  81 ! FMFAC   = 1.0  ! !END!
  82 ! SRCNAM =         0082 !
  82 ! X =  -148.00,   85.00,   39.62,    8.00,    1.52,       11.76,  629.82, 0.0,      7.16,
0.00 !
  82 ! ZPLTFM  = 0.0  !
  82 ! FMFAC   = 1.0  ! !END!
  83 ! SRCNAM =         0083 !
  83 ! X =  -138.32,  111.63,   76.20,   21.00,    1.09,       15.51,  554.82, 0.0,      7.13,
0.00 !
  83 ! ZPLTFM  = 0.0  !
  83 ! FMFAC   = 1.0  ! !END!
  84 ! SRCNAM =         0084 !
  84 ! X =  -138.32,  111.63,   45.72,   21.00,    0.76,        7.84,  643.71, 0.0,      7.08,
0.00 !
  84 ! ZPLTFM  = 0.0  !
  84 ! FMFAC   = 1.0  ! !END!
  85 ! SRCNAM =         0085 !
  85 ! X =  -148.42,  115.71,   41.45,   68.00,    2.20,        1.12,  643.71, 0.0,      7.02,
0.00 !
  85 ! ZPLTFM  = 0.0  !
  85 ! FMFAC   = 1.0  ! !END!
  86 ! SRCNAM =         0086 !
  86 ! X =  -138.32,  111.63,   45.72,   21.00,    0.76,        7.84,  643.71, 0.0,      6.52,
0.00 !
  86 ! ZPLTFM  = 0.0  !
  86 ! FMFAC   = 1.0  ! !END!
  87 ! SRCNAM =         0087 !
  87 ! X =  -149.14,  114.67,   39.01,   37.00,    1.37,        3.83,  627.59, 0.0,      6.38,
0.00 !
  87 ! ZPLTFM  = 0.0  !
  87 ! FMFAC   = 1.0  ! !END!
  88 ! SRCNAM =         0088 !
  88 ! X =  -133.25,  112.43,   60.96,    5.00,    1.98,        5.05,  671.48, 0.0,      6.37,
0.00 !
  88 ! ZPLTFM  = 0.0  !
  88 ! FMFAC   = 1.0  ! !END!
  89 ! SRCNAM =         0089 !
  89 ! X =  -133.46,  112.31,   22.86,    5.00,    0.61,        4.37,  495.93, 0.0,      6.10,
0.00 !
  89 ! ZPLTFM  = 0.0  !
  89 ! FMFAC   = 1.0  ! !END!
  90 ! SRCNAM =         0090 !
  90 ! X =  -161.65,  103.54,   52.73,   25.00,    1.09,        0.72,  421.48, 0.0,      6.05,
0.00 !
  90 ! ZPLTFM  = 0.0  !
```

```
  90 ! FMFAC   = 1.0  ! !END!
  91 ! SRCNAM =         0091 !
  91 ! X =  -137.58,  112.07,   49.38,   12.00,    2.43,       15.44,  588.71, 0.0,      6.04,
0.00 !
  91 ! ZPLTFM  = 0.0  !
  91 ! FMFAC   = 1.0  ! !END!
  92 ! SRCNAM =         0092 !
  92 ! X =  -133.24,  112.39,   38.10,    5.00,    3.05,       10.68,  421.48, 0.0,      6.02,
0.00 !
  92 ! ZPLTFM  = 0.0  !
  92 ! FMFAC   = 1.0  ! !END!
  93 ! SRCNAM =         0093 !
  93 ! X =  -138.32,  111.63,   76.20,   21.00,    1.09,       15.51,  554.82, 0.0,      6.01,
0.00 !
  93 ! ZPLTFM  = 0.0  !
  93 ! FMFAC   = 1.0  ! !END!
  94 ! SRCNAM =         0094 !
  94 ! X =  -137.67,  113.28,    6.10,    1.00,    0.08,        6.33,  371.48, 0.0,      5.80,
0.00 !
  94 ! ZPLTFM  = 0.0  !
  94 ! FMFAC   = 1.0  ! !END!
  95 ! SRCNAM =         0095 !
  95 ! X =  -137.67,  113.28,    7.92,    1.00,    0.10,       25.40,  313.71, 0.0,      5.80,
0.00 !
  95 ! ZPLTFM  = 0.0  !
  95 ! FMFAC   = 1.0  ! !END!
  96 ! SRCNAM =         0096 !
  96 ! X =   -98.45,   81.90,   16.76,  292.00,    3.64,        2.76, 1365.93, 0.0,      5.72,
0.00 !
  96 ! ZPLTFM  = 0.0  !
  96 ! FMFAC   = 1.0  ! !END!
  97 ! SRCNAM =         0097 !
  97 ! X =  -138.32,  111.63,   60.96,   21.00,    3.37,        6.95,  421.48, 0.0,      5.67,
0.00 !
  97 ! ZPLTFM  = 0.0  !
  97 ! FMFAC   = 1.0  ! !END!
  98 ! SRCNAM =         0098 !
  98 ! X =  -153.72,   91.25,   12.19,    1.00,    0.77,       13.51,  432.59, 0.0,      5.65,
0.00 !
  98 ! ZPLTFM  = 0.0  !
  98 ! FMFAC   = 1.0  ! !END!
  99 ! SRCNAM =         0099 !
  99 ! X =  -154.06,   96.05,   10.06,    4.00,    1.22,       18.62,  421.48, 0.0,      5.30,
0.00 !
  99 ! ZPLTFM  = 0.0  !
  99 ! FMFAC   = 1.0  ! !END!
 100 ! SRCNAM =         0100 !
 100 ! X =  -137.38,  112.05,  106.68,   12.00,    3.06,       12.09,  671.48, 0.0,      5.22,
0.00 !
 100 ! ZPLTFM  = 0.0  !
 100 ! FMFAC   = 1.0  ! !END!
 101 ! SRCNAM =         0101 !
 101 ! X =  -138.32,  111.63,   60.96,   21.00,    3.37,        6.95,  421.48, 0.0,      5.20,
0.00 !
 101 ! ZPLTFM  = 0.0  !
 101 ! FMFAC   = 1.0  ! !END!
 102 ! SRCNAM =         0102 !
 102 ! X =  -139.70,  117.08,   76.20,   19.00,    2.53,        4.94,  493.71, 0.0,      5.20,
0.00 !
 102 ! ZPLTFM  = 0.0  !
 102 ! FMFAC   = 1.0  ! !END!
 103 ! SRCNAM =         0103 !
 103 ! X =  -146.45,  115.86,   70.71,   15.00,    5.78,       17.78,  379.82, 0.0,      5.19,
0.00 !
 103 ! ZPLTFM  = 0.0  !
 103 ! FMFAC   = 1.0  ! !END!
 104 ! SRCNAM =         0104 !
 104 ! X =  -133.46,  112.31,  106.68,    5.00,    3.66,       16.22,  543.71, 0.0,      5.15,
0.00 !
 104 ! ZPLTFM  = 0.0  !
 104 ! FMFAC   = 1.0  ! !END!
 105 ! SRCNAM =         0105 !
 105 ! X =  -137.38,  112.05,  106.68,   12.00,    3.06,       12.09,  671.48, 0.0,      5.12,
0.00 !
 105 ! ZPLTFM  = 0.0  !
```

```
 105 ! FMFAC   = 1.0  ! !END!
 106 ! SRCNAM =         0106 !
 106 ! X =  -148.42,  115.71,   49.38,   12.00,    2.43,       15.44,  671.48, 0.0,      4.97,
0.00 !
 106 ! ZPLTFM  = 0.0  !
 106 ! FMFAC   = 1.0  ! !END!
 107 ! SRCNAM =         0107 !
 107 ! X =  -137.57,  112.07,   49.38,   68.00,    2.43,       15.44,  672.04, 0.0,      4.97,
0.00 !
 107 ! ZPLTFM  = 0.0  !
 107 ! FMFAC   = 1.0  ! !END!
 108 ! SRCNAM =         0108 !
 108 ! X =  -137.56,  112.06,   49.38,   12.00,    2.43,       15.44,  588.71, 0.0,      4.96,
0.00 !
 108 ! ZPLTFM  = 0.0  !
 108 ! FMFAC   = 1.0  ! !END!
 109 ! SRCNAM =         0109 !
 109 ! X =   -98.45,   81.90,   10.97,  292.00,    1.32,       31.00,  623.71, 0.0,      4.95,
0.00 !
 109 ! ZPLTFM  = 0.0  !
 109 ! FMFAC   = 1.0  ! !END!
 110 ! SRCNAM =         0110 !
 110 ! X =  -138.32,  111.63,   45.72,   21.00,    2.13,        4.42,  615.93, 0.0,      4.94,
0.00 !
 110 ! ZPLTFM  = 0.0  !
 110 ! FMFAC   = 1.0  ! !END!
 111 ! SRCNAM =         0111 !
 111 ! X =  -148.42,  115.71,   32.00,   68.00,    3.06,       20.90,  438.71, 0.0,      4.93,
0.00 !
 111 ! ZPLTFM  = 0.0  !
 111 ! FMFAC   = 1.0  ! !END!
 112 ! SRCNAM =         0112 !
 112 ! X =  -148.42,  115.71,   38.10,  292.00,    1.27,       31.00,  671.48, 0.0,      4.86,
0.00 !
 112 ! ZPLTFM  = 0.0  !
 112 ! FMFAC   = 1.0  ! !END!
 113 ! SRCNAM =         0113 !
 113 ! X =   -98.45,   81.90,   38.10,   68.00,    1.32,       31.00,  672.04, 0.0,      4.86,
0.00 !
 113 ! ZPLTFM  = 0.0  !
 113 ! FMFAC   = 1.0  ! !END!
 114 ! SRCNAM =         0114 !
 114 ! X =  -153.72,   91.25,   18.90,    1.00,    1.82,       12.97,  438.71, 0.0,      4.85,
0.00 !
 114 ! ZPLTFM  = 0.0  !
 114 ! FMFAC   = 1.0  ! !END!
 115 ! SRCNAM =         0115 !
 115 ! X =  -124.34,   40.35,    5.49,   12.00,    0.61,       10.70,  444.82, 0.0,      4.76,
0.00 !
 115 ! ZPLTFM  = 0.0  !
 115 ! FMFAC   = 1.0  ! !END!
 116 ! SRCNAM =         0116 !
 116 ! X =  -148.42,  115.71,   32.00,   68.00,    3.06,       20.90,  438.71, 0.0,      4.67,
0.00 !
 116 ! ZPLTFM  = 0.0  !
 116 ! FMFAC   = 1.0  ! !END!
 117 ! SRCNAM =         0117 !
 117 ! X =  -137.67,  113.28,    6.10,    1.00,    0.08,        6.73,  371.48, 0.0,      4.64,
0.00 !
 117 ! ZPLTFM  = 0.0  !
 117 ! FMFAC   = 1.0  ! !END!
 118 ! SRCNAM =         0118 !
 118 ! X =  -149.43,  115.23,   45.72,   -2.00,    2.21,       15.51,  576.48, 0.0,      4.47,
0.00 !
 118 ! ZPLTFM  = 0.0  !
 118 ! FMFAC   = 1.0  ! !END!
 119 ! SRCNAM =         0119 !
 119 ! X =  -154.27,   96.55,    9.14,    5.00,    0.70,       30.31,  310.93, 0.0,      4.43,
0.00 !
 119 ! ZPLTFM  = 0.0  !
 119 ! FMFAC   = 1.0  ! !END!
 120 ! SRCNAM =         0120 !
 120 ! X =  -140.15,  117.93,   27.43,   55.00,    3.36,        0.21,  671.48, 0.0,      4.42,
0.00 !
 120 ! ZPLTFM  = 0.0  !
```

```
 120 ! FMFAC   = 1.0  ! !END!
 121 ! SRCNAM =         0121 !
 121 ! X =  -148.42,  115.71,   32.00,   68.00,    3.06,       20.90,  438.71, 0.0,      4.40,
0.00 !
 121 ! ZPLTFM  = 0.0  !
 121 ! FMFAC   = 1.0  ! !END!
 122 ! SRCNAM =         0122 !
 122 ! X =  -137.27,  111.95,  106.68,   12.00,   10.00,       10.18,  699.82, 0.0,      4.37,
0.00 !
 122 ! ZPLTFM  = 0.0  !
 122 ! FMFAC   = 1.0  ! !END!
 123 ! SRCNAM =         0123 !
 123 ! X =  -153.72,   91.25,   12.19,    1.00,    0.77,       13.51,  432.59, 0.0,      4.32,
0.00 !
 123 ! ZPLTFM  = 0.0  !
 123 ! FMFAC   = 1.0  ! !END!
 124 ! SRCNAM =         0124 !
 124 ! X =  -128.47,   54.48,   13.72,    1.00,    2.74,       11.29, 1143.71, 0.0,      4.29,
0.00 !
 124 ! ZPLTFM  = 0.0  !
 124 ! FMFAC   = 1.0  ! !END!
 125 ! SRCNAM =         0125 !
 125 ! X =  -147.24,   81.54,   10.67,   -1.00,    1.22,        0.24,  604.82, 0.0,      4.25,
0.00 !
 125 ! ZPLTFM  = 0.0  !
 125 ! FMFAC   = 1.0  ! !END!
 126 ! SRCNAM =         0126 !
 126 ! X =  -160.95,  102.59,  106.68,   12.00,   10.00,        8.14,  699.82, 0.0,      4.22,
0.00 !
 126 ! ZPLTFM  = 0.0  !
 126 ! FMFAC   = 1.0  ! !END!
 127 ! SRCNAM =         0127 !
 127 ! X =  -137.54,  111.96,  106.68,    5.00,    5.48,        8.14,  699.82, 0.0,      4.22,
0.00 !
 127 ! ZPLTFM  = 0.0  !
 127 ! FMFAC   = 1.0  ! !END!
 128 ! SRCNAM =         0128 !
 128 ! X =  -141.78,   74.09,    7.62,    2.00,    0.22,       34.80,  815.93, 0.0,      4.18,
0.00 !
 128 ! ZPLTFM  = 0.0  !
 128 ! FMFAC   = 1.0  ! !END!
 129 ! SRCNAM =         0129 !
 129 ! X =  -139.73,  117.49,   76.20,   19.00,    2.53,        4.53,  493.71, 0.0,      4.06,
0.00 !
 129 ! ZPLTFM  = 0.0  !
 129 ! FMFAC   = 1.0  ! !END!
--------
```

a
Data for each source are treated as a separate input subgroup
and therefore must end with an input group terminator.

SRCNAM is a 12-character name for a source
(No default)
X is an array holding the source data listed by the column headings
(No default)
SIGYZI is an array holding the initial sigma-y and sigma-z (m)
(Default: 0.,0.)
FMFAC is a vertical momentum flux factor (0. or 1.0) used to represent
the effect of rain-caps or other physical configurations that
reduce momentum rise associated with the actual exit velocity.
(Default: 1.0 -- full momentum used)
ZPLTFM is the platform height (m) for sources influenced by an isolated
structure that has a significant open area between the surface
and the bulk of the structure, such as an offshore oil platform.
The Base Elevation is that of the surface (ground or ocean),
and the Stack Height is the release height above the Base (not
above the platform). Building heights entered in Subgroup 13c
must be those of the buildings on the platform, measured from
the platform deck. ZPLTFM is used only with MBDW=1 (ISC
downwash method) for sources with building downwash.
(Default: 0.0)

b
0. = No building downwash modeled

1. = Downwash modeled for buildings resting on the surface
2. = Downwash modeled for buildings raised above the surface (ZPLTFM > 0.)
NOTE: must be entered as a REAL number (i.e., with decimal point)

[c]
An emission rate must be entered for every pollutant modeled.
Enter emission rate of zero for secondary pollutants that are
modeled, but not emitted. Units are specified by IPTU
(e.g. 1 for g/s).

Subgroup (13c)

BUILDING DIMENSION DATA FOR SOURCES SUBJECT TO DOWNWASH

Source No.	Effective building height, width, length and X/Y offset (in meters) every 10 degrees. LENGTH, XBADJ, and YBADJ are only needed for MBDW=2 (PRIME downwash option) [a]

---

[a]
Building height, width, length, and X/Y offset from the source are treated
as a separate input subgroup for each source and therefore must end with
an input group terminator. The X/Y offset is the position, relative to the
stack, of the center of the upwind face of the projected building, with the
x-axis pointing along the flow direction.

Subgroup (13d)

POINT SOURCE: VARIABLE EMISSIONS DATA [a]

Use this subgroup to describe temporal variations in the emission
rates given in 13b. Factors entered multiply the rates in 13b.
Skip sources here that have constant emissions. For more elaborate
variation in source parameters, use PTEMARB.DAT and NPT2 > 0.

IVARY determines the type of variation, and is source-specific:
(IVARY) Default: 0

- 0 = Constant
- 1 = Diurnal cycle (24 scaling factors: hours 1-24)
- 2 = Monthly cycle (12 scaling factors: months 1-12)
- 3 = Hour & Season (4 groups of 24 hourly scaling factors, where first group is DEC-JAN-FEB)
- 4 = Speed & Stab. (6 groups of 6 scaling factors, where first group is Stability Class A, and the speed classes have upper bounds (m/s) defined in Group 12
- 5 = Temperature (12 scaling factors, where temperature classes have upper bounds (C) of: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 50+)

---
[a]
Data for each species are treated as a separate input subgroup
and therefore must end with an input group terminator.

INPUT GROUPS: 14a, 14b, 14c, 14d -- Area source parameters

```
Subgroup (14a)
---------------

     Number of polygon area sources with
     parameters specified below (NAR1)       No default  !  NAR1 =  0   !

     Units used for area source
     emissions below           (IARU)       Default: 1  !  IARU =   1  !
           1 =        g/m**2/s
           2 =       kg/m**2/hr
           3 =       lb/m**2/hr
           4 =     tons/m**2/yr
           5 =     Odour Unit * m/s  (vol. flux/m**2 of odour compound)
           6 =     Odour Unit * m/min
           7 =     metric tons/m**2/yr
           8 =     Bq/m**2/s  (Bq = becquerel = disintegrations/s)
           9 =     GBq/m**2/yr

     Number of source-species
     combinations with variable
     emissions scaling factors
     provided below in (14d)        (NSAR1) Default: 0  !  NSAR1 =  0  !

     Number of buoyant polygon area sources
     with variable location and emission
     parameters (NAR2)                      No default  !  NAR2 =  0   !
     (If NAR2 > 0, ALL parameter data for
     these sources are read from the file: BAEMARB.DAT)

!END!

---------------
Subgroup (14b)
---------------
                                    a
          AREA SOURCE: CONSTANT DATA
          --------------------------
                                                          b
Source           Effect.    Base      Initial    Emission
 No.             Height   Elevation   Sigma z     Rates
                   (m)       (m)        (m)
-------          ------    ------     --------   ---------


--------
    a
     Data for each source are treated as a separate input subgroup
     and therefore must end with an input group terminator.
    b
     An emission rate must be entered for every pollutant modeled.
     Enter emission rate of zero for secondary pollutants that are
     modeled, but not emitted.  Units are specified by IARU
     (e.g. 1 for g/m**2/s).

---------------
Subgroup (14c)
---------------

           COORDINATES (km) FOR EACH VERTEX(4) OF EACH POLYGON
           ---------------------------------------------------------
Source                                                              a
 No.       Ordered list of X followed by list of Y, grouped by source
------     ------------------------------------------------------------


--------
    a
     Data for each source are treated as a separate input subgroup
     and therefore must end with an input group terminator.


---------------
Subgroup (14d)
---------------
                                          a
```

```
          AREA SOURCE: VARIABLE EMISSIONS DATA
          ------------------------------------

     Use this subgroup to describe temporal variations in the emission
     rates given in 14b.  Factors entered multiply the rates in 14b.
     Skip sources here that have constant emissions.  For more elaborate
     variation in source parameters, use BAEMARB.DAT and NAR2 > 0.

     IVARY determines the type of variation, and is source-specific:
     (IVARY)                                Default: 0
           0 =       Constant
           1 =       Diurnal cycle (24 scaling factors: hours 1-24)
           2 =       Monthly cycle (12 scaling factors: months 1-12)
           3 =       Hour & Season (4 groups of 24 hourly scaling factors,
                                    where first group is DEC-JAN-FEB)
           4 =       Speed & Stab. (6 groups of 6 scaling factors, where
                                    first group is Stability Class A,
                                    and the speed classes have upper
                                    bounds (m/s) defined in Group 12
           5 =       Temperature   (12 scaling factors, where temperature
                                    classes have upper bounds (C) of:
                                    0, 5, 10, 15, 20, 25, 30, 35, 40,
                                    45, 50, 50+)



--------
    a
     Data for each species are treated as a separate input subgroup
     and therefore must end with an input group terminator.


------------------------------------------------------------------------------

INPUT GROUPS: 15a, 15b, 15c -- Line source parameters
----------------------------

---------------
Subgroup (15a)
---------------

     Number of buoyant line sources
     with variable location and emission
     parameters (NLN2)                          No default  !  NLN2 =  0   !

     (If NLN2 > 0, ALL parameter data for
      these sources are read from the file: LNEMARB.DAT)

     Number of buoyant line sources (NLINES)    No default   ! NLINES =  0  !

     Units used for line source
     emissions below            (ILNU)          Default: 1  !  ILNU =   1  !
           1 =        g/s
           2 =       kg/hr
           3 =       lb/hr
           4 =     tons/yr
           5 =     Odour Unit * m**3/s  (vol. flux of odour compound)
           6 =     Odour Unit * m**3/min
           7 =     metric tons/yr
           8 =     Bq/s  (Bq = becquerel = disintegrations/s)
           9 =     GBq/yr

     Number of source-species
     combinations with variable
     emissions scaling factors
     provided below in (15c)    (NSLN1) Default: 0  !  NSLN1 =  0  !

     Maximum number of segments used to model
     each line (MXNSEG)                         Default: 7   ! MXNSEG =  7  !

     The following variables are required only if NLINES > 0.  They are
     used in the buoyant line source plume rise calculations.

        Number of distances at which            Default: 6   ! NLRISE =  6  !
        transitional rise is computed
```

```
        Average building length (XL)               No default   ! XL = .0 !
                                                   (in meters)

        Average building height (HBL)              No default   ! HBL = .0 !
                                                   (in meters)

        Average building width (WBL)               No default   ! WBL = .0 !
                                                   (in meters)

        Average line source width (WML)            No default   ! WML = .0 !
                                                   (in meters)

        Average separation between buildings (DXL) No default   ! DXL = .0 !
                                                   (in meters)

        Average buoyancy parameter (FPRIMEL)       No default   ! FPRIMEL = .0 !
                                                   (in m**4/s**3)

!END!

---------------
Subgroup (15b)
---------------

          BUOYANT LINE SOURCE: CONSTANT DATA
          ----------------------------------
                                                                                  a
Source     Beg. X      Beg. Y      End. X    End. Y     Release    Base        Emission
 No.     Coordinate  Coordinate  Coordinate Coordinate  Height    Elevation      Rates
           (km)        (km)        (km)       (km)       (m)       (m)
------   ----------  ----------  ---------  ----------  -------   ---------    ---------

--------

    a
     Data for each source are treated as a separate input subgroup
     and therefore must end with an input group terminator.

    b
     An emission rate must be entered for every pollutant modeled.
     Enter emission rate of zero for secondary pollutants that are
     modeled, but not emitted.  Units are specified by ILNTU
     (e.g. 1 for g/s).

---------------
Subgroup (15c)
---------------
                                                  a
          BUOYANT LINE SOURCE: VARIABLE EMISSIONS DATA
          --------------------------------------------

     Use this subgroup to describe temporal variations in the emission
     rates given in 15b.  Factors entered multiply the rates in 15b.
     Skip sources here that have constant emissions.

     IVARY determines the type of variation, and is source-specific:
     (IVARY)                                Default: 0
           0 =       Constant
           1 =       Diurnal cycle (24 scaling factors: hours 1-24)
           2 =       Monthly cycle (12 scaling factors: months 1-12)
           3 =       Hour & Season (4 groups of 24 hourly scaling factors,
                                    where first group is DEC-JAN-FEB)
           4 =       Speed & Stab. (6 groups of 6 scaling factors, where
                                    first group is Stability Class A,
                                    and the speed classes have upper
                                    bounds (m/s) defined in Group 12
           5 =       Temperature   (12 scaling factors, where temperature
                                    classes have upper bounds (C) of:
                                    0, 5, 10, 15, 20, 25, 30, 35, 40,
                                    45, 50, 50+)



--------
```

[a] Data for each species are treated as a separate input subgroup and therefore must end with an input group terminator.

INPUT GROUPS: 16a, 16b, 16c -- Volume source parameters

Subgroup (16a)

Number of volume sources with parameters provided in 16b,c (NVL1) No default ! NVL1 = 0 !

Units used for volume source emissions below in 16b (IVLU) Default: 1 ! IVLU = 1 !

1 = g/s
2 = kg/hr
3 = lb/hr
4 = tons/yr
5 = Odour Unit * m**3/s (vol. flux of odour compound)
6 = Odour Unit * m**3/min
7 = metric tons/yr
8 = Bq/s (Bq = becquerel = disintegrations/s)
9 = GBq/yr

Number of source-species combinations with variable emissions scaling factors provided below in (16c) (NSVL1) Default: 0 ! NSVL1 = 0 !

Number of volume sources with variable location and emission parameters (NVL2) No default ! NVL2 = 0 !

(If NVL2 > 0, ALL parameter data for these sources are read from the VOLEMARB.DAT file(s))

!END!

Subgroup (16b)

VOLUME SOURCE: CONSTANT DATA [a]

X Coordinate (km)	Y Coordinate (km)	Effect. Height (m)	Base Elevation (m)	Initial Sigma y (m)	Initial Sigma z (m)	Emission Rates [b]

---

[a] Data for each source are treated as a separate input subgroup and therefore must end with an input group terminator.

[b] An emission rate must be entered for every pollutant modeled. Enter emission rate of zero for secondary pollutants that are modeled, but not emitted. Units are specified by IVLU (e.g. 1 for g/s).

Subgroup (16c)

VOLUME SOURCE: VARIABLE EMISSIONS DATA [a]

Use this subgroup to describe temporal variations in the emission rates given in 16b. Factors entered multiply the rates in 16b. Skip sources here that have constant emissions. For more elaborate variation in source parameters, use VOLEMARB.DAT and NVL2 > 0.

IVARY determines the type of variation, and is source-specific:
(IVARY) Default: 0

0 =	Constant	
1 =	Diurnal cycle	(24 scaling factors: hours 1-24)
2 =	Monthly cycle	(12 scaling factors: months 1-12)
3 =	Hour & Season	(4 groups of 24 hourly scaling factors, where first group is DEC-JAN-FEB)
4 =	Speed & Stab.	(6 groups of 6 scaling factors, where first group is Stability Class A, and the speed classes have upper bounds (m/s) defined in Group 12
5 =	Temperature	(12 scaling factors, where temperature classes have upper bounds (C) of: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 50+)

---

[a] Data for each species are treated as a separate input subgroup and therefore must end with an input group terminator.

INPUT GROUPS: 17a & 17b -- Non-gridded (discrete) receptor information

---

Subgroup (17a)

Number of non-gridded receptors (NREC) No default ! NREC = 0 !

!END!

Subgroup (17b)

NON-GRIDDED (DISCRETE) RECEPTOR DATA[a]

Receptor No.	X Coordinate (km)	Y Coordinate (km)	Ground Elevation (m)	Height Above Ground[b] (m)

---

[a] Data for each receptor are treated as a separate input subgroup and therefore must end with an input group terminator.

[b] Receptor height above ground is optional. If no value is entered, the receptor is placed on the ground.

Appendix C: Example CALMET Control Input File for January 2012

```
CALMET.INP      2.1             Hour Start and End Times with Seconds
CALMET 67 by 67 by 10 4km meteorological grid
48 surface and precip and 1 upper air
---------------- Run title (3 lines) ------------------------------------------

                   CALMET MODEL CONTROL FILE
                   -------------------------

--------------------------------------------------------------------------------

INPUT GROUP: 0 -- Input and Output File Names


Subgroup (a)
------------
Default Name  Type          File Name
------------  ----          ---------
GEO.DAT       input    ! GEODAT=../inputs/makegeo/geo.bayarea_4km.dat          !
SURF.DAT      input    ! SRFDAT=../inputs/ds2surf/output/surf.201201.bayarea.dat !
CLOUD.DAT     input    * CLDDAT=            *
PRECIP.DAT    input    ! PRCDAT=../inputs/ds2surf/output/precip.201201.bayarea.dat !
WT.DAT        input    * WTDAT=             *

CALMET.LST    output   ! METLST=../outputs.2012.lyr18/calmet.bayarea_4km.201201.lst !
CALMET.DAT    output   ! METDAT=../outputs.2012.lyr18/calmet.bayarea_4km.201201.dat !
PACOUT.DAT    output   * PACDAT=            *

All file names will be converted to lower case if LCFILES = T
Otherwise, if LCFILES = F, file names will be converted to UPPER CASE
         T = lower case      ! LCFILES = T !
         F = UPPER CASE

NUMBER OF UPPER AIR & OVERWATER STATIONS:

    Number of upper air stations (NUSTA)  No default     ! NUSTA =  1  !
    Number of overwater met stations
                                (NOWSTA) No default     ! NOWSTA = 0  !

NUMBER OF PROGNOSTIC and IGF-CALMET FILEs:

    Number of MM4/MM5/3D.DAT files
                                (NM3D) No default       ! NM3D =  0  !

    Number of IGF-CALMET.DAT files
                                (NIGF)   No default     ! NIGF =  0  !

                      !END!
--------------------------------------------------------------------------------
Subgroup (b)
--------------------------------
Upper air files (one per station)
--------------------------------
Default Name  Type       File Name
------------  ----       ---------
UP1.DAT       input     1  ! UPDAT=../inputs/read62/upoak2012.dat!    !END!
--------------------------------------------------------------------------------
Subgroup (c)
----------------------------------------
Overwater station files (one per station)
----------------------------------------
Default Name  Type       File Name
------------  ----       ---------
SEA1.DAT       input     1  * SEADAT=../inputs/buoy/46012-2006-7.dat*    *END*
--------------------------------------------------------------------------------
Subgroup (d)
-----------------------------------------------
MM4/MM5/3D.DAT files (consecutive or overlapping)
-----------------------------------------------
Default Name  Type       File Name
------------  ----       ---------
MM51.DAT       input     1  * M3DDAT= /home/yjia/tmp/calwrf/2012-08-01_12.m3d* *END*
MM51.DAT       input     2  * M3DDAT= /home/yjia/tmp/calwrf/2012-08-05_12.m3d* *END*
```

```
MM51.DAT       input     3  * M3DDAT= /home/yjia/tmp/calwrf/2012-08-09_12.m3d* *END*
MM51.DAT       input     4  * M3DDAT= /home/yjia/tmp/calwrf/2012-08-13_12.m3d* *END*
-------------------------------------------------------------------------------
Subgroup (e)
-----------------------------------------------
IGF-CALMET.DAT files (consecutive or overlapping)
-----------------------------------------------
Default Name  Type       File Name
------------  ----       ---------
IGFn.DAT       input     1  * IGFDAT=CALMET0.DAT *    *END*
-------------------------------------------------------------------------------
Subgroup (f)
----------------
Other file names
----------------

Default Name  Type       File Name
------------  ----       ---------
DIAG.DAT      input      * DIADAT=                  *
PROG.DAT      input      * PRGDAT=                  *

TEST.PRT      output     * TSTPRT=                  *
TEST.OUT      output     * TSTOUT=                  *
TEST.KIN      output     * TSTKIN=                  *
TEST.FRD      output     * TSTFRD=                  *
TEST.SLP      output     * TSTSLP=                  *
DCST.GRD      output     * DCSTGD=                  *

-------------------------------------------------------------------------------
NOTES: (1) File/path names can be up to 70 characters in length
       (2) Subgroups (a) and (f) must have ONE 'END' (surrounded by
           delimiters) at the end of the group
       (3) Subgroups (b) through (e) are included ONLY if the corresponding
           number of files (NUSTA, NOWSTA, NM3D, NIGF) is not 0, and each must have
           an 'END' (surround by delimiters) at the end of EACH LINE

                        !END!


-------------------------------------------------------------------------------

INPUT GROUP: 1 -- General run control parameters
--------------

     Starting date:    Year   (IBYR)  --    No default   ! IBYR  = 2012 !
                       Month  (IBMO)  --    No default   ! IBMO  = 01 !
                       Day    (IBDY)  --    No default   ! IBDY  = 01 !
     Starting time:    Hour   (IBHR)  --    No default   ! IBHR  =  0  !
                       Second (IBSEC) --    No default   ! IBSEC =  0  !

     Ending date:      Year   (IEYR)  --    No default   ! IEYR  = 2012 !
                       Month  (IEMO)  --    No default   ! IEMO  = 01 !
                       Day    (IEDY)  --    No default   ! IEDY  = 31 !
     Ending time:      Hour   (IEHR)  --    No default   ! IEHR  =  24 !
                       Second (IESEC) --    No default   ! IESEC =  0  !

      UTC time zone         (ABTZ) -- No default       ! ABTZ= UTC-0800 !
         (character*8)
         PST = UTC-0800, MST = UTC-0700 , GMT = UTC-0000
         CST = UTC-0600, EST = UTC-0500

     Length of modeling time-step (seconds)
     Must divide evenly into 3600 (1 hour)
     (NSECDT)                        Default:3600     ! NSECDT =  3600  !
                                     Units: seconds

     Run type            (IRTYPE) -- Default: 1       ! IRTYPE=  1  !

        0 = Computes wind fields only
        1 = Computes wind fields and micrometeorological variables
            (u*, w*, L, zi, etc.)
        (IRTYPE must be 1 to run CALPUFF or CALGRID)

     Compute special data fields required
     by CALGRID (i.e., 3-D fields of W wind
```

```
     components and temperature)
     in additional to regular            Default: T    ! LCALGRD = T !
     fields ? (LCALGRD)
     (LCALGRD must be T to run CALGRID)

      Flag to stop run after
      SETUP phase (ITEST)             Default: 2       ! ITEST=  2   !
      (Used to allow checking
      of the model inputs, files, etc.)
      ITEST = 1 - STOPS program after SETUP phase
      ITEST = 2 - Continues with execution of
                  COMPUTATIONAL phase after SETUP

!END!

--------------------------------------------------------------------------------

INPUT GROUP: 2 -- Map Projection and Grid control parameters
--------------

     Projection for all (X,Y):
     -------------------------

     Map projection
     (PMAP)                    Default: UTM    ! PMAP = LCC  !

         UTM :  Universal Transverse Mercator
         TTM :  Tangential Transverse Mercator
         LCC :  Lambert Conformal Conic
          PS :  Polar Stereographic
          EM :  Equatorial Mercator
        LAZA :  Lambert Azimuthal Equal Area

     False Easting and Northing (km) at the projection origin
     (Used only if PMAP= TTM, LCC, or LAZA)
     (FEAST)                   Default=0.0     ! FEAST  = 0.000  !
     (FNORTH)                  Default=0.0     ! FNORTH = 0.000  !

     UTM zone (1 to 60)
     (Used only if PMAP=UTM)
     (IUTMZN)                  No Default      ! IUTMZN =  10   !

     Hemisphere for UTM projection?
     (Used only if PMAP=UTM)
     (UTMHEM)                  Default: N      ! UTMHEM = N  !
         N   :  Northern hemisphere projection
         S   :  Southern hemisphere projection

     Latitude and Longitude (decimal degrees) of projection origin
     (Used only if PMAP= TTM, LCC, PS, EM, or LAZA)
     (RLAT0)                   No Default      ! RLAT0 = 37N     !
     (RLON0)                   No Default      ! RLON0 = 120.5W  !

         TTM :  RLON0 identifies central (true N/S) meridian of projection
                RLAT0 selected for convenience
         LCC :  RLON0 identifies central (true N/S) meridian of projection
                RLAT0 selected for convenience
         PS  :  RLON0 identifies central (grid N/S) meridian of projection
                RLAT0 selected for convenience
         EM  :  RLON0 identifies central meridian of projection
                RLAT0 is REPLACED by 0.0N (Equator)
         LAZA:  RLON0 identifies longitude of tangent-point of mapping plane
                RLAT0 identifies latitude of tangent-point of mapping plane

     Matching parallel(s) of latitude (decimal degrees) for projection
     (Used only if PMAP= LCC or PS)
     (XLAT1)                   No Default      ! XLAT1 = 30N  !
     (XLAT2)                   No Default      ! XLAT2 = 60N  !

         LCC :  Projection cone slices through Earth's surface at XLAT1 and XLAT2
         PS  :  Projection plane slices through Earth at XLAT1
                (XLAT2 is not used)

     ----------
     Note:  Latitudes and longitudes should be positive, and include a
```

```
       letter N,S,E, or W indicating north or south latitude, and
       east or west longitude.  For example,
       35.9  N Latitude  =  35.9N
       118.7 E Longitude = 118.7E


  Datum-region
  ------------

  The Datum-Region for the coordinates is identified by a character
  string.  Many mapping products currently available use the model of the
  Earth known as the World Geodetic System 1984 (WGS-84).  Other local
  models may be in use, and their selection in CALMET will make its output
  consistent with local mapping products.  The list of Datum-Regions with
  official transformation parameters is provided by the National Imagery and
  Mapping Agency (NIMA).

  NIMA Datum - Regions(Examples)
  ------------------------------------------------------------------------------
  WGS-84    WGS-84 Reference Ellipsoid and Geoid, Global coverage (WGS84)
  NAS-C     NORTH AMERICAN 1927 Clarke 1866 Spheroid, MEAN FOR CONUS (NAD27)
  NAR-C     NORTH AMERICAN 1983 GRS 80 Spheroid, MEAN FOR CONUS (NAD83)
  NWS-84    NWS 6370KM Radius, Sphere
  ESR-S     ESRI REFERENCE 6371KM Radius, Sphere

  Datum-region for output coordinates
  (DATUM)                   Default: WGS-84    ! DATUM = WGS-84 !


  Horizontal grid definition:
  ---------------------------

  Rectangular grid defined for projection PMAP,
  with X the Easting and Y the Northing coordinate

       No. X grid cells (NX)      No default     ! NX =   67  !
       No. Y grid cells (NY)      No default     ! NY =   67  !

  Grid spacing (DGRIDKM)          No default     ! DGRIDKM = 4. !
                                  Units: km

  Reference grid coordinate of
  SOUTHWEST corner of grid cell (1,1)

     X coordinate (XORIGKM)       No default     ! XORIGKM = -288.0 !
     Y coordinate (YORIGKM)       No default     ! YORIGKM =  -36.0 !
                                  Units: km


  Vertical grid definition:
  -------------------------

     No. of vertical layers (NZ)  No default     ! NZ =  18  !

     Cell face heights in arbitrary
     vertical grid (ZFACE(NZ+1))  No defaults
                                  Units: m
     ! ZFACE =
0.,20.,40.,80.,120.,180.,240.,300.,360.,420.,500.,600.,700.,800.,1000.,1200.,1500.,2200.,3000. !


!END!


------------------------------------------------------------------------------

INPUT GROUP: 3 -- Output Options
--------------


    DISK OUTPUT OPTION

       Save met. fields in an unformatted
       output file ?             (LSAVE)  Default: T     ! LSAVE = T !
       (F = Do not save, T = Save)
```

```
   Type of unformatted output file:
   (IFORMO)                          Default: 1    ! IFORMO =  1  !

        1 = CALPUFF/CALGRID type file (CALMET.DAT)
        2 = MESOPUFF-II type file     (PACOUT.DAT)


LINE PRINTER OUTPUT OPTIONS:

   Print met. fields ?  (LPRINT)       Default: F     ! LPRINT = F !
   (F = Do not print, T = Print)
   (NOTE: parameters below control which
          met. variables are printed)

   Print interval
   (IPRINF) in hours                   Default: 1     ! IPRINF =  6  !
   (Meteorological fields are printed
    every  1  hours)


   Specify which layers of U, V wind component
   to print (IUVOUT(NZ)) -- NOTE: NZ values must be entered
   (0=Do not print, 1=Print)
   (used only if LPRINT=T)        Defaults: NZ*0
   ! IUVOUT =  0 ,  0 ,  0 ,  0 ,  0 ,  0 ,  0 ,  0 ,  0 ,  0  !
   ----------------------


   Specify which levels of the W wind component to print
   (NOTE: W defined at TOP cell face --  10  values)
   (IWOUT(NZ)) -- NOTE: NZ values must be entered
   (0=Do not print, 1=Print)
   (used only if LPRINT=T & LCALGRD=T)
   -----------------------------------
                                       Defaults: NZ*0
    ! IWOUT =  0 ,  0 ,  0 ,  0 ,  0 ,  0 ,  0 ,  0 ,  0 ,  0  !


   Specify which levels of the 3-D temperature field to print
   (ITOUT(NZ)) -- NOTE: NZ values must be entered
   (0=Do not print, 1=Print)
   (used only if LPRINT=T & LCALGRD=T)
   -----------------------------------
                                       Defaults: NZ*0
    ! ITOUT =  0 ,  0 ,  0 ,  0 ,  0 ,  0 ,  0 ,  0 ,  0 ,  0  !

   Specify which meteorological fields
   to print
   (used only if LPRINT=T)             Defaults: 0 (all variables)
   ----------------------


     Variable           Print ?
                      (0 = do not print,
                       1 = print)
     --------         ------------------

  !  STABILITY  =          0          ! - PGT stability class
  !  USTAR      =          0          ! - Friction velocity
  !  MONIN      =          0          ! - Monin-Obukhov length
  !  MIXHT      =          0          ! - Mixing height
  !  WSTAR      =          0          ! - Convective velocity scale
  !  PRECIP     =          0          ! - Precipitation rate
  !  SENSHEAT   =          0          ! - Sensible heat flux
  !  CONVZI     =          0          ! - Convective mixing ht.


   Testing and debug print options for micrometeorological module

      Print input meteorological data and
      internal variables (LDB)         Default: F       ! LDB = F !
      (F = Do not print, T = print)
      (NOTE: this option produces large amounts of output)
```

```
          First time step for which debug data
          are printed (NN1)               Default: 1       ! NN1 =  1  !

          Last time step for which debug data
          are printed (NN2)               Default: 1       ! NN2 =  1  !

          Print distance to land
          internal variables (LDBCST)     Default: F       ! LDBCST = F !
          (F = Do not print, T = print)
          (Output in .GRD file DCST.GRD, defined in input group 0)

       Testing and debug print options for wind field module
       (all of the following print options control output to
        wind field module's output files: TEST.PRT, TEST.OUT,
        TEST.KIN, TEST.FRD, and TEST.SLP)

          Control variable for writing the test/debug
          wind fields to disk files (IOUTD)
          (0=Do not write, 1=write)       Default: 0       ! IOUTD =  0  !

          Number of levels, starting at the surface,
          to print (NZPRN2)               Default: 1       ! NZPRN2 =  1  !

          Print the INTERPOLATED wind components ?
          (IPR0) (0=no, 1=yes)            Default: 0       !  IPR0 =  0  !

          Print the TERRAIN ADJUSTED surface wind
          components ?
          (IPR1) (0=no, 1=yes)            Default: 0       !  IPR1 =  0  !

          Print the SMOOTHED wind components and
          the INITIAL DIVERGENCE fields ?
          (IPR2) (0=no, 1=yes)            Default: 0       !  IPR2 =  0  !

          Print the FINAL wind speed and direction
          fields ?
          (IPR3) (0=no, 1=yes)            Default: 0       !  IPR3 =  0  !

          Print the FINAL DIVERGENCE fields ?
          (IPR4) (0=no, 1=yes)            Default: 0       !  IPR4 =  0  !

          Print the winds after KINEMATIC effects
          are added ?
          (IPR5) (0=no, 1=yes)            Default: 0       !  IPR5 =  0  !

          Print the winds after the FROUDE NUMBER
          adjustment is made ?
          (IPR6) (0=no, 1=yes)            Default: 0       !  IPR6 =  0  !

          Print the winds after SLOPE FLOWS
          are added ?
          (IPR7) (0=no, 1=yes)            Default: 0       !  IPR7 =  0  !

          Print the FINAL wind field components ?
          (IPR8) (0=no, 1=yes)            Default: 0       !  IPR8 =  0  !

!END!


--------------------------------------------------------------------------------

INPUT GROUP: 4 -- Meteorological data options
--------------

    NO OBSERVATION MODE            (NOOBS)  Default: 0     ! NOOBS =  0   !
          0 = Use surface, overwater, and upper air stations
          1 = Use surface and overwater stations (no upper air observations)
              Use MM4/MM5/3D for upper air data
          2 = No surface, overwater, or upper air observations
              Use MM4/MM5/3D for surface, overwater, and upper air data

    NUMBER OF SURFACE & PRECIP. METEOROLOGICAL STATIONS

       Number of surface stations   (NSSTA)  No default     ! NSSTA =  45 !
```

```
      Number of precipitation stations
      (NPSTA=-1: flag for use of MM5/3D precip data)
                                (NPSTA)  No default     ! NPSTA =  45 !

   CLOUD DATA OPTIONS
      Gridded cloud fields:
                                (ICLOUD)  Default: 0     ! ICLOUD =  0  !
      ICLOUD = 0 - Gridded clouds not used
      ICLOUD = 1 - Gridded CLOUD.DAT generated as OUTPUT
      ICLOUD = 2 - Gridded CLOUD.DAT read as INPUT
      ICLOUD = 3 - Gridded cloud cover computed from prognostic fields

   FILE FORMATS

      Surface meteorological data file format
                                (IFORMS)  Default: 2     ! IFORMS =  2  !
      (1 = unformatted (e.g., SMERGE output))
      (2 = formatted   (free-formatted user input))

      Precipitation data file format
                                (IFORMP)  Default: 2     ! IFORMP =  2  !
      (1 = unformatted (e.g., PMERGE output))
      (2 = formatted   (free-formatted user input))

      Cloud data file format
                                (IFORMC)  Default: 2     ! IFORMC =  2  !
      (1 = unformatted - CALMET unformatted output)
      (2 = formatted   - free-formatted CALMET output or user input)

!END!


-------------------------------------------------------------------------------

INPUT GROUP: 5 -- Wind Field Options and Parameters
--------------


   WIND FIELD MODEL OPTIONS
      Model selection variable (IWFCOD)     Default: 1      ! IWFCOD =  1  !
         0 = Objective analysis only
         1 = Diagnostic wind module

      Compute Froude number adjustment
      effects ? (IFRADJ)                    Default: 1      ! IFRADJ =  1  !
      (0 = NO, 1 = YES)

      Compute kinematic effects ? (IKINE)   Default: 0      ! IKINE  =  0  !
      (0 = NO, 1 = YES)

      Use O'Brien procedure for adjustment
      of the vertical velocity ? (IOBR)     Default: 0      ! IOBR =  0  !
      (0 = NO, 1 = YES)

      Compute slope flow effects ? (ISLOPE) Default: 1      ! ISLOPE  =  1  !
      (0 = NO, 1 = YES)

      Extrapolate surface wind observations
      to upper layers ? (IEXTRP)            Default: -4     ! IEXTRP = -4  !
      (1 = no extrapolation is done,
       2 = power law extrapolation used,
       3 = user input multiplicative factors
           for layers 2 - NZ used (see FEXTRP array)
       4 = similarity theory used
       -1, -2, -3, -4 = same as above except layer 1 data
           at upper air stations are ignored

      Extrapolate surface winds even
      if calm? (ICALM)                      Default: 0      ! ICALM  =  0  !
      (0 = NO, 1 = YES)

      Layer-dependent biases modifying the weights of
      surface and upper air stations (BIAS(NZ))
        -1<=BIAS<=1
      Negative BIAS reduces the weight of upper air stations
```

```
     (e.g. BIAS=-0.1 reduces the weight of upper air stations
   by 10%; BIAS= -1, reduces their weight by 100 %)
   Positive BIAS reduces the weight of surface stations
     (e.g. BIAS= 0.2 reduces the weight of surface stations
   by 20%; BIAS=1 reduces their weight by 100%)
   Zero BIAS leaves weights unchanged (1/R**2 interpolation)
   Default: NZ*0
                          ! BIAS =  0 ,  0 ,  0 ,  0 ,  0 ,  0 ,  0 ,  0 ,  0 ,  0  !

   Minimum distance from nearest upper air station
   to surface station for which extrapolation
   of surface winds at surface station will be allowed
   (RMIN2: Set to -1 for IEXTRP = 4 or other situations
    where all surface stations should be extrapolated)
                                      Default: 4.     ! RMIN2 = -1.0 !

   Use gridded prognostic wind field model
   output fields as input to the diagnostic
   wind field model (IPROG)           Default: 0      ! IPROG =  0  !
   (0 = No, [IWFCOD = 0 or 1]
    1 = Yes, use CSUMM prog. winds as Step 1 field, [IWFCOD = 0]
    2 = Yes, use CSUMM prog. winds as initial guess field [IWFCOD = 1]
    3 = Yes, use winds from MM4.DAT file as Step 1 field [IWFCOD = 0]
    4 = Yes, use winds from MM4.DAT file as initial guess field [IWFCOD = 1]
    5 = Yes, use winds from MM4.DAT file as observations [IWFCOD = 1]
    13 = Yes, use winds from MM5/3D.DAT file as Step 1 field [IWFCOD = 0]
    14 = Yes, use winds from MM5/3D.DAT file as initial guess field [IWFCOD = 1]
    15 = Yes, use winds from MM5/3D.DAT file as observations [IWFCOD = 1]

   Timestep (hours) of the prognostic
   model input data   (ISTEPPG)       Default: 1      ! ISTEPPG =  1   !

   Use coarse CALMET fields as initial guess fields (IGFMET)
   (overwrites IGF based on prognostic wind fields if any)
                                      Default: 0      ! IGFMET =  0  !

RADIUS OF INFLUENCE PARAMETERS

   Use varying radius of influence    Default: F      ! LVARY =  T!
   (if no stations are found within RMAX1,RMAX2,
    or RMAX3, then the closest station will be used)

   Maximum radius of influence over land
   in the surface layer (RMAX1)       No default      ! RMAX1 = 30. !
                                      Units: km
   Maximum radius of influence over land
   aloft (RMAX2)                      No default      ! RMAX2 = 30. !
                                      Units: km
   Maximum radius of influence over water
   (RMAX3)                            No default      ! RMAX3 = 50. !
                                      Units: km


OTHER WIND FIELD INPUT PARAMETERS

   Minimum radius of influence used in
   the wind field interpolation (RMIN)  Default: 0.1    ! RMIN = 0.1 !
                                        Units: km
   Radius of influence of terrain
   features (TERRAD)                  No default      ! TERRAD = 12. !

                                      Units: km
   Relative weighting of the first
   guess field and observations in the
   SURFACE layer (R1)                 No default      ! R1 = 1. !
   (R1 is the distance from an        Units: km
   observational station at which the
   observation and first guess field are
   equally weighted)

   Relative weighting of the first
   guess field and observations in the
   layers ALOFT (R2)                  No default      ! R2 = 1. !
   (R2 is applied in the upper layers Units: km
   in the same manner as R1 is used in
```

```
      the surface layer).

      Relative weighting parameter of the
      prognostic wind field data (RPROG)    No default      ! RPROG = 0. !
      (Used only if IPROG = 1)              Units: km
      ------------------------

      Maximum acceptable divergence in the
      divergence minimization procedure
      (DIVLIM)                              Default: 5.E-6  ! DIVLIM= 5.0E-06 !

      Maximum number of iterations in the
      divergence min. procedure (NITER)     Default: 50     ! NITER =  50  !

      Number of passes in the smoothing
      procedure (NSMTH(NZ))
      NOTE: NZ values must be entered
           Default: 2,(mxnz-1)*4 ! NSMTH =
2 ,  4 ,  4 ,  4 ,  4 ,  4 ,  4 ,  4 ,  4 ,  4  !

      Maximum number of stations used in
      each layer for the interpolation of
      data to a grid point (NINTR2(NZ))
      NOTE: NZ values must be entered       Default: 99.    ! NINTR2 =
99 ,  99 ,  99 ,  99 ,  99 ,  99 ,  99 ,  99 ,  99 ,  99 !

      Critical Froude number (CRITFN)       Default: 1.0    ! CRITFN = 1. !

      Empirical factor controlling the
      influence of kinematic effects
      (ALPHA)                               Default: 0.1    ! ALPHA = 0.1 !

      Multiplicative scaling factor for
      extrapolation of surface observations
      to upper layers (FEXTR2(NZ))          Default: NZ*0.0
      ! FEXTR2 = 0., 0., 0., 0., 0., 0., 0., 0., 0., 0. !
      (Used only if IEXTRP = 3 or -3)


   BARRIER INFORMATION

      Number of barriers to interpolation
      of the wind fields (NBAR)             Default: 0      ! NBAR =  0  !

      Level (1 to NZ) up to which barriers
      apply (KBAR)                          Default: NZ     ! KBAR =  10  !

      THE FOLLOWING 4 VARIABLES ARE INCLUDED
      ONLY IF NBAR > 0
      NOTE: NBAR values must be entered     No defaults
            for each variable               Units: km

         X coordinate of BEGINNING
         of each barrier (XBBAR(NBAR))      ! XBBAR = 0. !
         Y coordinate of BEGINNING
         of each barrier (YBBAR(NBAR))      ! YBBAR = 0. !

         X coordinate of ENDING
         of each barrier (XEBAR(NBAR))      ! XEBAR = 0. !
         Y coordinate of ENDING
         of each barrier (YEBAR(NBAR))      ! YEBAR = 0. !


   DIAGNOSTIC MODULE DATA INPUT OPTIONS

      Surface temperature (IDIOPT1)         Default: 0      ! IDIOPT1 =  0  !
         0 = Compute internally from
             hourly surface observations
         1 = Read preprocessed values from
             a data file (DIAG.DAT)

         Surface met. station to use for
         the surface temperature (ISURFT)   No default     ! ISURFT =  45 !
         (Must be a value from 1 to NSSTA)
         (Used only if IDIOPT1 = 0)
```

```
   --------------------------

Domain-averaged temperature lapse
rate (IDIOPT2)                        Default: 0     ! IDIOPT2 =  0  !
   0 = Compute internally from
       twice-daily upper air observations
   1 = Read hourly preprocessed values
       from a data file (DIAG.DAT)

   Upper air station to use for
   the domain-scale lapse rate (IUPT) No default     ! IUPT   =  1  !
   (Must be a value from 1 to NUSTA)
   (Used only if IDIOPT2 = 0)
   --------------------------

   Depth through which the domain-scale
   lapse rate is computed (ZUPT)      Default: 200.  ! ZUPT = 200. !
   (Used only if IDIOPT2 = 0)         Units: meters
   --------------------------

Domain-averaged wind components
(IDIOPT3)                             Default: 0     ! IDIOPT3 =  0  !
   0 = Compute internally from
       twice-daily upper air observations
   1 = Read hourly preprocessed values
       a data file (DIAG.DAT)

   Upper air station to use for
   the domain-scale winds (IUPWND)    Default: -1    ! IUPWND = -1  !
   (Must be a value from -1 to NUSTA)
   (Used only if IDIOPT3 = 0)
   --------------------------

   Bottom and top of layer through
   which the domain-scale winds
   are computed
   (ZUPWND(1), ZUPWND(2))        Defaults: 1., 1000. ! ZUPWND= 1., 1000. !
   (Used only if IDIOPT3 = 0)    Units: meters
   --------------------------

Observed surface wind components
for wind field module (IDIOPT4)  Default: 0     ! IDIOPT4 =  0  !
   0 = Read WS, WD from a surface
       data file (SURF.DAT)
   1 = Read hourly preprocessed U, V from
       a data file (DIAG.DAT)

Observed upper air wind components
for wind field module (IDIOPT5)  Default: 0     ! IDIOPT5 =  0  !
   0 = Read WS, WD from an upper
       air data file (UP1.DAT, UP2.DAT, etc.)
   1 = Read hourly preprocessed U, V from
       a data file (DIAG.DAT)

LAKE BREEZE INFORMATION

   Use Lake Breeze Module  (LLBREZE)
                                   Default: F      ! LLBREZE = F !

    Number of lake breeze regions (NBOX)           ! NBOX =  0  !

 X Grid line 1 defining the region of interest
                                                   ! XG1 = 0. !
 X Grid line 2 defining the region of interest
                                                   ! XG2 = 0. !
 Y Grid line 1 defining the region of interest
                                                   ! YG1 = 0. !
 Y Grid line 2 defining the region of interest
                                                   ! YG2 = 0. !

  X Point defining the coastline (Straight line)
            (XBCST)  (KM)   Default: none    ! XBCST = 0. !

  Y Point defining the coastline (Straight line)
            (YBCST)  (KM)   Default: none    ! YBCST = 0. !
```

```
          X Point defining the coastline (Straight line)
                    (XECST)  (KM)   Default: none    ! XECST = 0. !

          Y Point defining the coastline (Straight line)
                    (YECST)  (KM)   Default: none    ! YECST = 0. !


       Number of stations in the region     Default: none ! NLB =  0 !
       (Surface stations + upper air stations)

       Station ID's  in the region   (METBXID(NLB))
       (Surface stations first, then upper air stations)
         ! METBXID =  0 !

!END!


--------------------------------------------------------------------------------

INPUT GROUP: 6 -- Mixing Height, Temperature and Precipitation Parameters
--------------

    EMPIRICAL MIXING HEIGHT CONSTANTS

       Neutral, mechanical equation
       (CONSTB)                            Default: 1.41   ! CONSTB = 1.41 !
       Convective mixing ht. equation
       (CONSTE)                            Default: 0.15   ! CONSTE = 0.15 !
       Stable mixing ht. equation
       (CONSTN)                            Default: 2400.  ! CONSTN = 2400.!
       Overwater mixing ht. equation
       (CONSTW)                            Default: 0.16   ! CONSTW = 0.16 !
       Absolute value of Coriolis
       parameter (FCORIOL)                 Default: 1.E-4  ! FCORIOL = 1.0E-04!
                                           Units: (1/s)

    SPATIAL AVERAGING OF MIXING HEIGHTS

       Conduct spatial averaging
       (IAVEZI)  (0=no, 1=yes)             Default: 1      ! IAVEZI =  1  !

       Max. search radius in averaging
       process (MNMDAV)                    Default: 1      ! MNMDAV =  1  !
                                           Units: Grid
                                                  cells
       Half-angle of upwind looking cone
       for averaging (HAFANG)              Default: 30.    ! HAFANG = 30. !
                                           Units: deg.
       Layer of winds used in upwind
       averaging (ILEVZI)                  Default: 1      ! ILEVZI =  1  !
       (must be between 1 and NZ)


    CONVECTIVE MIXING HEIGHT OPTIONS:
       Method to compute the convective
       mixing height(IMIHXH)               Default: 1      ! IMIXH =  1  !
           1: Maul-Carson for land and water cells
          -1: Maul-Carson for land cells only -
              OCD mixing height overwater
           2: Batchvarova and Gryning for land and water cells
          -2: Batchvarova and Gryning for land cells only
              OCD mixing height overwater

       Threshold buoyancy flux required to
       sustain convective mixing height growth
       overland (THRESHL)                  Default: 0.05   ! THRESHL = 0.05 !
       (expressed as a heat flux           units: W/m3
        per meter of boundary layer)


       Threshold buoyancy flux required to
       sustain convective mixing height growth
       overwater (THRESHW)                 Default: 0.05   ! THRESHW = 0.05 !
       (expressed as a heat flux           units: W/m3
```

```
    per meter of boundary layer)


   Option for overwater lapse rates used
   in convective mixing height growth
   (ITWPROG)                          Default: 0      ! ITWPROG =  0  !
   0 : use SEA.DAT lapse rates and deltaT (or assume neutral
       conditions if missing)
   1 : use prognostic lapse rates (only if IPROG>2)
       and SEA.DAT deltaT (or neutral if missing)
   2 : use prognostic lapse rates and prognostic delta T
       (only if iprog>12 and 3D.DAT version# 2.0 or higher)

   Land Use category ocean in 3D.DAT datasets
   (ILUOC3D)                          Default: 16     ! ILUOC3D =  16  !
   Note: if 3D.DAT from MM5 version 3.0, iluoc3d = 16
         if MM4.DAT,           typically iluoc3d = 7


OTHER MIXING HEIGHT VARIABLES

   Minimum potential temperature lapse
   rate in the stable layer above the
   current convective mixing ht.         Default: 0.001  ! DPTMIN = 0.001 !
   (DPTMIN)                              Units: deg. K/m
   Depth of layer above current conv.
   mixing height through which lapse     Default: 200.   ! DZZI = 200. !
   rate is computed (DZZI)               Units: meters

   Minimum overland mixing height        Default:  50.   ! ZIMIN = 50. !
   (ZIMIN)                               Units: meters
   Maximum overland mixing height        Default: 3000.  ! ZIMAX = 3000. !
   (ZIMAX)                               Units: meters
   Minimum overwater mixing height       Default:   50.  ! ZIMINW = 50. !
   (ZIMINW) -- (Not used if observed     Units: meters
   overwater mixing hts. are used)
   Maximum overwater mixing height       Default: 3000.  ! ZIMAXW = 3000. !
   (ZIMAXW) -- (Not used if observed     Units: meters
   overwater mixing hts. are used)


OVERWATER SURFACE FLUXES METHOD and PARAMETERS
      (ICOARE)                          Default: 10      ! ICOARE =  10   !
       0: original deltaT method (OCD)
      10: COARE with no wave parameterization (jwave=0, Charnock)
      11: COARE with wave option jwave=1 (Oost et al.)
          and default wave properties
     -11: COARE with wave option jwave=1 (Oost et al.)
          and observed wave properties (must be in SEA.DAT files)
      12: COARE with wave option 2 (Taylor and Yelland)
           and default wave properties
     -12: COARE with wave option 2 (Taylor and Yelland)
          and observed wave properties (must be in SEA.DAT files)

      Coastal/Shallow water length scale (DSHELF)
      (for modified z0 in shallow water)
      ( COARE fluxes only)
                                    Default : 0.        ! DSHELF = 0. !
                                    units: km

       COARE warm layer computation (IWARM)              ! IWARM =  0   !
       1: on - 0: off (must be off if SST measured with
       IR radiometer)               Default: 0

       COARE cool skin layer computation (ICOOL)         ! ICOOL =  0   !
       1: on - 0: off (must be off if SST measured with
       IR radiometer)               Default: 0

RELATIVE HUMIDITY PARAMETERS

   3D relative humidity from observations or
   from prognostic data? (IRHPROG)       Default:0       ! IRHPROG =  0   !

      0 = Use RH from SURF.DAT file
          (only if NOOBS = 0,1)
```

```
          1 = Use prognostic RH
              (only if NOOBS = 0,1,2)

    TEMPERATURE PARAMETERS

       3D temperature from observations or
       from prognostic data? (ITPROG)        Default:0        ! ITPROG =  0   !

          0 = Use Surface and upper air stations
              (only if NOOBS = 0)
          1 = Use Surface stations (no upper air observations)
              Use MM5/3D for upper air data
              (only if NOOBS = 0,1)
          2 = No surface or upper air observations
              Use MM5/3D for surface and upper air data
              (only if NOOBS = 0,1,2)

       Interpolation type
       (1 = 1/R ; 2 = 1/R**2)                Default:1         ! IRAD =  1  !

       Radius of influence for temperature
       interpolation (TRADKM)                Default: 500.     ! TRADKM = 20. !
                                             Units: km

       Maximum Number of stations to include
       in temperature interpolation (NUMTS)  Default: 5        ! NUMTS = 5  !

       Conduct spatial averaging of temp-
       eratures (IAVET)  (0=no, 1=yes)       Default: 1        ! IAVET =  1  !
       (will use mixing ht MNMDAV,HAFANG
        so make sure they are correct)

       Default temperature gradient          Default: -.0098   ! TGDEFB = -0.0098 !
       below the mixing height over          Units: K/m
       water (TGDEFB)

       Default temperature gradient          Default: -.0045   ! TGDEFA = -0.0045 !
       above the mixing height over          Units: K/m
       water (TGDEFA)

       Beginning (JWAT1) and ending (JWAT2)
       land use categories for temperature                     ! JWAT1 =  55  !
       interpolation over water -- Make                        ! JWAT2 =  55  !
       bigger than largest land use to disable

   PRECIP INTERPOLATION PARAMETERS

       Method of interpolation (NFLAGP)      Default: 2        ! NFLAGP =  2  !
        (1=1/R,2=1/R**2,3=EXP/R**2)
       Radius of Influence  (SIGMAP)         Default: 100.0    ! SIGMAP = 50. !
        (0.0 => use half dist. btwn          Units: km
         nearest stns w & w/out
         precip when NFLAGP = 3)
       Minimum Precip. Rate Cutoff (CUTP)    Default: 0.01     ! CUTP = 0.01 !
        (values < CUTP = 0.0 mm/hr)          Units: mm/hr
!END!


-------------------------------------------------------------------------------

INPUT GROUP: 7 -- Surface meteorological station parameters
--------------

     SURFACE STATION VARIABLES
     (One record per station --  5  records in all)


             1     2
         Name   ID            X coord.   Y coord.   Time   Anem.
                               (km)       (km)      zone   Ht.(m)
       ------------------------------------------------------------
! SS1   ='KAPC', 00001,   -151.643    133.567   8    10 !
! SS002 ='KAUN', 00002,    -48.889    211.886   8    10 !
! SS003 ='KBAB', 00003,    -78.212    231.453   8    10 !
! SS004 ='KBLU', 00004,    -16.720    247.221   8    10 !
```

```
! SS005 ='KCCR', 00005,   -132.296    107.889   8    10 !
! SS006 ='KCIC', 00006,   -111.947    302.125   8    10 !
! SS007 ='KCVH', 00007,    -79.043    -11.134   8    10 !
! SS008 ='KDVO', 00008,   -175.380    125.832   8    10 !
! SS009 ='KEDU', 00009,   -108.854    166.815   8    10 !
! SS010 ='KFAT', 00010,     68.150    -24.998   8    10 !
! SS011 ='KHAF', 00011,   -171.934     57.862   8    10 !
! SS012 ='KHJO', 00012,     76.276    -73.732   8    10 !
! SS013 ='KHWD', 00013,   -138.717     71.900   8    10 !
! SS014 ='KLHM', 00014,    -71.488    207.246   8    10 !
! SS015 ='KLVK', 00015,   -112.890     76.847   8    10 !
! SS016 ='KMAE', 00016,     32.952     -2.092   8    10 !
! SS017 ='KMCC', 00017,    -75.989    180.990   8    10 !
! SS018 ='KMCE', 00018,     -8.630     30.746   8    10 !
! SS019 ='KMER', 00019,     -5.749     39.789   8    10 !
! SS020 ='KMHR', 00020,    -67.672    168.279   8    10 !
! SS021 ='KMOD', 00021,    -38.624     68.798   8    10 !
! SS022 ='KMRY', 00022,   -117.787    -44.261   8    10 !
! SS023 ='KMYV', 00023,    -89.439    227.995   8    10 !
! SS024 ='KNLC', 00024,     48.176    -72.263   8    10 !
! SS025 ='KNUQ', 00025,   -133.485     46.500   8    10 !
! SS026 ='KO22', 00026,      7.284    111.712   8    10 !
! SS027 ='KOAK', 00027,   -147.482     79.822   8    10 !
! SS028 ='KOVE', 00028,    -93.336    270.682   8    10 !
! SS029 ='KPAO', 00029,   -139.118     52.035   8    10 !
! SS030 ='KRHV', 00030,   -113.544     37.098   8    10 !
! SS031 ='KRNO', 00031,     59.707    270.869   8    10 !
! SS032 ='KSAC', 00032,    -84.634    164.868   8    10 !
! SS033 ='KSCK', 00033,    -64.102     97.887   8    10 !
! SS034 ='KSFO', 00034,   -161.673     68.792   8    10 !
! SS035 ='KSJC', 00035,   -122.763     40.064   8    10 !
! SS036 ='KSMF', 00036,    -92.825    184.801   8    10 !
! SS037 ='KSNS', 00037,    -95.852    -35.535   8    10 !
! SS038 ='KSQL', 00038,   -150.469     57.695   8    10 !
! SS039 ='KSTS', 00039,   -196.103    165.371   8    10 !
! SS040 ='KSUU', 00040,   -121.787    138.380   8    10 !
! SS041 ='KTRK', 00041,     30.640    250.879   8    10 !
! SS042 ='KTVL', 00042,     42.506    205.736   8    10 !
! SS043 ='KUKI', 00043,   -226.228    234.811   8    10 !
! SS044 ='KVCB', 00044,   -123.832    150.679   8    10 !
! SS045 ='KWVI', 00045,   -111.078     -6.710   8    10 !
-------------------
      1
        Four character string for station name
        (MUST START IN COLUMN 9)

      2
        Six digit integer for station ID

!END!


--------------------------------------------------------------------------------

INPUT GROUP: 8 -- Upper air meteorological station parameters
--------------

     UPPER AIR STATION VARIABLES
     (One record per station --  3  records in all)

             1     2
         Name    ID      X coord.   Y coord.  Time zone
                           (km)       (km)
        ------------------------------------------------
! US1  ='OAK '   23230   -147.347     82.919    8  !
-------------------
      1
        Four character string for station name
        (MUST START IN COLUMN 9)

      2
        Five digit integer for station ID

!END!
```

```
--------------------------------------------------------------------------------

INPUT GROUP: 9 -- Precipitation station parameters
--------------

     PRECIPITATION STATION VARIABLES
     (One record per station --  16  records in all)
     (NOT INCLUDED IF NPSTA = 0)

           1          2
         Name   Station    X coord.  Y coord.
                  Code       (km)      (km)
          -------------------------------------
! PS1   ='KAPC', 00001,   -151.643    133.567 !
! PS002 ='KAUN', 00002,    -48.889    211.886 !
! PS003 ='KBAB', 00003,    -78.212    231.453 !
! PS004 ='KBLU', 00004,    -16.720    247.221 !
! PS005 ='KCCR', 00005,   -132.296    107.889 !
! PS006 ='KCIC', 00006,   -111.947    302.125 !
! PS007 ='KCVH', 00007,    -79.043    -11.134 !
! PS008 ='KDVO', 00008,   -175.380    125.832 !
! PS009 ='KEDU', 00009,   -108.854    166.815 !
! PS010 ='KFAT', 00010,     68.150    -24.998 !
! PS011 ='KHAF', 00011,   -171.934     57.862 !
! PS012 ='KHJO', 00012,     76.276    -73.732 !
! PS013 ='KHWD', 00013,   -138.717     71.900 !
! PS014 ='KLHM', 00014,    -71.488    207.246 !
! PS015 ='KLVK', 00015,   -112.890     76.847 !
! PS016 ='KMAE', 00016,     32.952     -2.092 !
! PS017 ='KMCC', 00017,    -75.989    180.990 !
! PS018 ='KMCE', 00018,     -8.630     30.746 !
! PS019 ='KMER', 00019,     -5.749     39.789 !
! PS020 ='KMHR', 00020,    -67.672    168.279 !
! PS021 ='KMOD', 00021,    -38.624     68.798 !
! PS022 ='KMRY', 00022,   -117.787    -44.261 !
! PS023 ='KMYV', 00023,    -89.439    227.995 !
! PS024 ='KNLC', 00024,     48.176    -72.263 !
! PS025 ='KNUQ', 00025,   -133.485     46.500 !
! PS026 ='KO22', 00026,      7.284    111.712 !
! PS027 ='KOAK', 00027,   -147.482     79.822 !
! PS028 ='KOVE', 00028,    -93.336    270.682 !
! PS029 ='KPAO', 00029,   -139.118     52.035 !
! PS030 ='KRHV', 00030,   -113.544     37.098 !
! PS031 ='KRNO', 00031,     59.707    270.869 !
! PS032 ='KSAC', 00032,    -84.634    164.868 !
! PS033 ='KSCK', 00033,    -64.102     97.887 !
! PS034 ='KSFO', 00034,   -161.673     68.792 !
! PS035 ='KSJC', 00035,   -122.763     40.064 !
! PS036 ='KSMF', 00036,    -92.825    184.801 !
! PS037 ='KSNS', 00037,    -95.852    -35.535 !
! PS038 ='KSQL', 00038,   -150.469     57.695 !
! PS039 ='KSTS', 00039,   -196.103    165.371 !
! PS040 ='KSUU', 00040,   -121.787    138.380 !
! PS041 ='KTRK', 00041,     30.640    250.879 !
! PS042 ='KTVL', 00042,     42.506    205.736 !
! PS043 ='KUKI', 00043,   -226.228    234.811 !
! PS044 ='KVCB', 00044,   -123.832    150.679 !
! PS045 ='KWVI', 00045,   -111.078     -6.710 !
-------------------
      1
        Four character string for station name
        (MUST START IN COLUMN 9)

      2
        Six digit station code composed of state
        code (first 2 digits) and station ID (last
        4 digits)

!END!
```

Appendix D: List of Point Sources Modeled with CALPUFF

Facility Name	StackID	StkHgt (ft)	StkDia (ft)	Temp (F)	Exit Vel (ft/sec)	Baseline SO2 (tpy)	Hypothetical SO2 (tpy)
Potential New Source - DeltaEast	1402	330	3.25	175.7	40.75	--	370.0
Potential New Source - Delta West	1402	330	3.25	175.7	40.75	--	370.0
Potential New Source - Gilroy	1402	330	3.25	175.7	40.75	--	370.0
Potential New Source - Livermore	1402	330	3.25	175.7	40.75	--	370.0
Potential New Source - Lehigh	1402	330	3.25	175.7	40.75	--	370.0
Potential New Source - Petaluma	1402	330	3.25	175.7	40.75	--	370.0
Potential New Source - San Leandro	1402	330	3.25	175.7	40.75	--	370.0
Chevron Products Company	151	150	5.97	598.7	8.37	19.0	22.7
Chevron Products Company	152	150	5.97	598.7	8.37	24.7	29.7
Chevron Products Company	153	150	8.33	600.5	8.73	22.8	27.3
Chevron Products Company	57	240	12.24	1,250.3	22.34	29.5	35.4
Chevron Products Company	58	240	12.24	1,250.3	22.34	28.3	34.0
Chevron Products Company	59	155	9.58	1,000.1	24.90	10.4	12.5
Chevron Products Company	127	117	4.99	424.1	46.00	21.2	25.5
Chevron Products Company	260	140	11.52	499.7	35.30	10.1	12.1
Chevron Products Company	-9	174	3.58	299.9	2.36	6.1	7.3
Chevron Products Company	133	150	7.91	649.1	136.06	162.8	195.3
Shell Martinez Refinery	26	162	7.97	600.5	50.66	5.0	6.0
Shell Martinez Refinery	27	162	7.98	749.9	50.67	5.0	6.0
Shell Martinez Refinery	28	162	7.97	600.5	50.66	6.0	7.3
Shell Martinez Refinery	26	162	7.97	600.5	50.66	24.5	29.5
Shell Martinez Refinery	27	162	7.97	600.5	50.66	8.6	10.3
Shell Martinez Refinery	28	162	7.97	600.5	50.66	29.3	35.1
Shell Martinez Refinery	26	162	7.97	600.5	50.66	224.2	269.0
Shell Martinez Refinery	27	162	7.97	600.5	50.66	186.2	223.5
Shell Martinez Refinery	28	162	7.97	600.5	50.66	244.1	292.9
Shell Martinez Refinery	4190	245	12.40	299.9	65.58	9.6	11.6
Shell Martinez Refinery	4192	245	12.40	299.9	65.58	9.9	11.9
Shell Martinez Refinery	-9	150	3.94	299.9	3.28	25.2	30.2
Shell Martinez Refinery	25	350	10.04	749.9	39.67	32.9	39.5
Shell Martinez Refinery	1518	150	2.49	699.5	25.72	7.1	8.5
Shell Martinez Refinery	25	350	10.04	749.9	39.67	10.3	12.4
Shell Martinez Refinery	1518	150	2.49	699.5	25.72	6.5	7.8
Shell Martinez Refinery	-9	180	8.99	379.1	32.05	68.9	82.7
Shell Martinez Refinery	23	350	17.98	800.3	33.40	89.9	107.9
Shell Martinez Refinery	23	350	32.81	800.3	33.40	4.4	5.2
Shell Martinez Refinery	24	350	17.98	800.3	26.71	76.3	91.6
Shell Martinez Refinery	24	350	32.81	800.0	26.71	4.2	5.1
Shell Martinez Refinery	25	350	10.04	749.9	39.67	18.4	22.1
Shell Martinez Refinery	1760	150	6.99	649.1	14.50	4.9	5.9
Shell Martinez Refinery	1763	150	8.66	649.1	13.09	30.9	37.1
Shell Martinez Refinery	4002	250	3.58	539.3	50.89	13.1	15.8

Shell Martinez Refinery	-9	150	3.94	299.9	3.28	7.6	9.2
Shell Martinez Refinery	1	20	0.79	1,829.9	66.17	31.4	37.6
Shell Martinez Refinery	102	65	0.82	1,829.9	66.17	117.2	140.6
Shell Martinez Refinery	4161	200	11.06	299.9	22.80	5.2	6.2
Shell Martinez Refinery	4161	200	11.06	299.9	22.80	41.3	49.5
Lehigh Southwest Cement Company	141	60	6.23	319.7	98.69	925.2	1,110.3
General Chemical West LLC	1	150	5.97	184.7	19.65	215.9	259.1
General Chemical West LLC	-9	350	17.98	800.3	26.71	4.2	5.1
Owens Brockway Glass Container	3	130	4.99	787.7	58.20	122.6	147.1
Owens Brockway Glass Container	4	130	4.99	674.3	38.58	19.9	23.9
AB&I Foundry	-9	50	5.31	330.5	41.11	41.7	50.1
United States Pipe & Foundry Co.	9	48	31.92	499.7	2.92	74.5	89.4
Berkeley Asphalt Co.	-9	34	4.00	299.9	61.09	5.3	6.4
East Bay Municipal Utility District	56	62	5.97	330.5	42.55	4.9	5.8
East Bay Municipal Utility District	38	40	2.53	319.7	44.32	4.3	5.2
East Bay Municipal Utility District	39	40	2.53	319.7	44.32	5.7	6.8
Pacific Steel Casting Co., Plant #2	3	30	2.30	100.1	99.44	4.4	5.3
San Mateo Water Quality Control	-9	100	1.38	100.1	4.13	29.8	35.8
Oro Loma Sanitary District	3	25	0.72	1,009.1	114.17	4.2	5.0
Redwood Landfill Inc.	55	50	12.01	1,999.1	16.47	25.1	30.2
Redwood Landfill Inc.	60	40	11.94	1,399.7	9.06	22.5	27.0
Rolls Royce Engine Services	1	35	4.00	629.3	0.79	4.3	5.1
Waste Management of Alameda Co.	6	36	4.33	663.5	101.71	5.0	5.9
Waste Management of Alameda Co.	7	125	4.17	749.9	101.69	4.9	5.8
Waste Management of Alameda Co.	210	55	11.94	1,999.1	9.06	5.7	6.9
TriCities Recycling	3	45	8.99	1,599.5	37.04	4.3	5.2
Diana Fruit Company Inc.	-9	18	2.00	341.3	35.10	4.8	5.7
GWF Power Systems LP (Site1)	1	68	0.46	71.3	70.70	41.4	49.7
GWF Power Systems LP (Site2)	1	68	0.46	71.3	70.70	60.5	72.6
GWF Power Systems LP (Site3)	1	80	5.25	310.7	47.54	42.5	51.0
GWF Power Systems LP (Site4)	1	80	5.25	310.7	47.54	25.8	30.9
GWF Power Systems LP (Site5)	1	100	5.25	310.7	47.54	80.4	96.5
Republic Services Vasco Road	-9	50	12.01	1,399.7	51.61	36.0	43.2
Crockett Cogeneration ACalLP	201	232	18.96	224.3	58.33	5.2	6.2
Rhodia Inc.	1	200	4.00	159.5	101.05	334.3	401.1
Rhodia Inc.	-9	20	0.26	209.9	20.77	5.8	7.0
Rhodia Inc.	-9	20	0.26	209.9	22.08	4.6	5.6
Rhodia Inc.	-9	27	0.33	105.5	83.33	5.8	7.0
Valero Refining Company California	47	90	11.02	749.9	0.69	4.4	5.3
Valero Refining Company California	-9	220	2.00	94.7	60.14	12.2	14.6
Valero Refining Company California	-9	357	3.90	1,599.5	60.01	49.5	59.4
Valero Refining Company California	4	355	1.28	1,199.9	20.21	14.4	17.3
Valero Refining Company California	30	250	8.30	429.5	14.86	4.1	4.9
Valero Refining Company California	32	250	8.30	429.5	16.21	5.2	6.2
Tesoro Refining & Marketing Co.	10	350	15.03	400.7	14.14	9.7	11.7

Tesoro Refining & Marketing Co.	81	350	12.01	519.5	53.22	5.2	6.2
Tesoro Refining & Marketing Co.	1402	330	3.25	175.7	40.75	338.2	405.9
Tesoro Refining & Marketing Co.	1401	330	6.99	609.5	10.83	101.8	122.2
Tesoro Refining & Marketing Co.	1422	45	4.00	80.3	8.63	12.1	14.5
Tesoro Refining & Marketing Co.	26	200	6.50	749.9	16.57	6.4	7.6
Tesoro Refining & Marketing Co.	29	125	10.01	299.9	35.04	6.0	7.2
Tesoro Refining & Marketing Co.	81	350	12.01	519.5	53.22	104.9	125.8
Tesoro Refining & Marketing Co.	-9	28	2.00	433.1	14.34	32.5	39.0
Tesoro Refining & Marketing Co.	-9	75	2.00	433.1	14.34	6.1	7.3
Tesoro Refining & Marketing Co.	87	160	2.00	1,505.9	20.21	10.3	12.4
Phillips 66 Company San Francisco	8	128	4.49	670.7	12.57	6.4	7.7
Phillips 66 Company San Francisco	73	105	10.04	330.5	68.57	4.9	5.9
Phillips 66 Company San Francisco	74	105	10.04	330.5	68.57	4.7	5.6
Phillips 66 Company San Francisco	75	105	10.04	330.5	68.57	4.4	5.3
Phillips 66 Company San Francisco	73	105	10.04	330.5	68.57	13.2	15.8
Phillips 66 Company San Francisco	74	105	10.04	330.5	68.57	14.9	17.9
Phillips 66 Company San Francisco	75	105	10.04	330.5	68.57	15.1	18.1
Phillips 66 Company San Francisco	4	120	6.27	640.1	10.86	10.8	13.0
Phillips 66 Company San Francisco	5	120	5.09	730.1	10.66	11.3	13.5
Phillips 66 Company San Francisco	6	162	7.97	750.0	50.66	5.0	6.0
Phillips 66 Company San Francisco	9	177	6.00	730.1	26.51	24.9	29.9
Phillips 66 Company San Francisco	10	125	6.17	800.3	9.48	16.3	19.6
Phillips 66 Company San Francisco	11	125	4.33	750.0	101.71	4.9	5.8
Phillips 66 Company San Francisco	12	146	8.17	775.1	15.58	29.9	35.8
Phillips 66 Company San Francisco	13	272	8.99	449.3	13.62	48.3	58.0
Phillips 66 Company San Francisco	15	125	6.50	469.1	8.53	29.3	35.1
Phillips 66 Company San Francisco	26	137	6.23	699.5	15.35	16.8	20.2
Phillips 66 Company San Francisco	27	136	7.22	699.5	3.67	7.0	8.4
Phillips 66 Company San Francisco	63	150	7.25	578.9	50.89	17.3	20.8
Phillips 66 Company San Francisco	70	105	4.49	629.3	50.89	28.8	34.6
Phillips 66 Company San Francisco	72	105	4.49	499.7	50.89	13.1	15.7
Phillips 66 Company San Francisco	-9	250	3.51	1,000.1	2.53	28.4	34.1
Phillips 66 Carbon Plant	5	250	5.51	524.9	102.23	658.6	790.4
Phillips 66 Carbon Plant	6	250	5.51	449.3	102.23	481.0	577.2
Total						**6,082.3**	**9,888.7**

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

RESOLUTION No. 2017-

A Resolution of the Board of Directors of the Bay Area Air Quality Management District Adopting Technical and Administrative Amendments to: Regulation 2, Rule 1 (Permits – General Requirements) Regulation 2, Rule 2 (Permits – New Source Review) Regulation 2, Rule 4 (Permits – Emissions Banking) Regulation 2, Rule 6 (Permits – Major Facility Review) and Adopting a Negative Declaration under the California Environmental Quality Act

RECITALS

WHEREAS, the Board of Directors of the Bay Area Air Quality Management District has the authority and the responsibility to adopt, amend and repeal rules and regulations as necessary and appropriate to control air pollution emissions from stationary sources in the San Francisco Bay Area as provided in Sections 40000, 40001 and 40702 of the California Health & Safety Code;

WHEREAS, the Board of Directors of the Bay Area Air Quality Management District has determined that a need exists to amend the District's New Source Review and Title V permitting requirements by adopting amendments to District Regulation 2, Rule 1 (Permits – General Requirements), Regulation 2, Rule 2 (Permits – New Source Review), Regulation 2, Rule 4 (Permits – Emissions Banking), and Regulation 2, Rule 6 (Permits – Major Facility Review), as set forth in Attachment A hereto ("Proposed Amendments");

WHEREAS, a need to amend the Air District's New Source Review permitting requirements has arisen because the United States Environmental Protection Agency (EPA) has identified certain "deficiencies" that need to be corrected in order for EPA to be able to fully approve the District's New Source Review program under the federal Clean Air Act, as specified in EPA's Final Rule, *Revisions to California State Implementation Plan; Bay Area Air Quality Management District; Stationary Source Permits*, 81 Fed. Reg. 50,339 (Aug. 1, 2016), and in EPA's Proposed Rule, *Revisions to California State Implementation Plan; Bay Area Air Quality Management District; Emission Reduction Credit Banking*, 82 Fed. Reg. 43,202 (Sept. 14, 2017);

WHEREAS, an additional need to amend the Air District's New Source Review permitting requirements has arisen because Air District Staff have identified certain areas where additional revisions and clarifications are needed to ensure that the New Source Review program functions as effectively as possible, based on staff's experience in working with the current rules, which were last updated in 2012;

WHEREAS, a need to amend the Air District's New Source Review and Title V permitting requirements has arisen because the U.S. Supreme Court has issued a ruling in *Utility Air*

Regulatory Group v. EPA (134 S.Ct. 2427 (2014)) that interpreted several relevant provisions of the federal Clean Air Act regarding the Act's New Source Review and Title V program requirements, and the Air District's regulations need to be revised to align them with this ruling;

WHEREAS, Air District staff prepared initial draft amendments and published them for comment on May 11, 2017, and held public workshops to discuss the draft amendments with interested members of the public on June 12 and 13, 2017, in San Francisco, Martinez, and Fremont, CA;

WHEREAS, Air District staff also met with and discussed the draft amendments with staff of EPA Region IX and the California Air Resources Board;

WHEREAS, based on comments received on the initial draft amendments, and on further consideration and analysis of the issues involved, Air District staff prepared a final version of the proposed amendments for consideration by the Board of Directors, which was initially published on August 24, 2017, and then re-published with certain revisions on October 12, 2017;

WHEREAS, Air District staff have prepared and presented to the public and to the Board of Directors a detailed Staff Report describing the purpose of and need for the Proposed Amendments, and how the Proposed Amendments will effect the Air District's regulatory programs if adopted, which Staff Report has been considered by the Board of Directors and is incorporated herein by reference;

WHEREAS, on or before October 13, 2017, Air District staff published in newspapers and published and distributed on the Air District's website a notice of a public hearing on December 6, 2017, to consider adoption of the Proposed Amendments;

WHEREAS, in connection with the notice of public hearing, Air District staff invited interested members of the public to submit comments on the Proposed Amendments, and have prepared summaries of the comments received and staff's responses in a Response to Comments document, which has been considered by the Board of Directors and is incorporated herein by reference;

WHEREAS, the Board of Directors of the Bay Area Air Quality Management District held a public hearing on December 6, 2017, which was properly noticed in accordance with the provisions of Health & Safety Code Section 40725 and was conducted in accordance with the provisions of Health & Safety Code Section 40726, to consider the Proposed Amendments in accordance with all provisions of law;

WHEREAS, at the public hearing, the subject matter of the Proposed Amendments was discussed with interested persons in accordance with all provisions of law;

WHEREAS, in accordance with Health & Safety Code Section 40727, and based on substantial evidence presented at the hearing and described in the Staff Report and other documentation, the Board of Directors of the Bay Area Air Quality Management District has found and determined that the Proposed Amendments are necessary; that the District has the authority to adopt the Proposed Amendments; that the Proposed Amendments are clearly written and displayed; that the Proposed Amendments are consistent with other legal requirements; that the Proposed

Amendments are not impermissibly duplicative of existing regulatory requirements; and that the Proposed Amendments will implement specific provisions of law as referenced and identified below;

WHEREAS, the Board of Directors of the Bay Area Air Quality Management District has determined that a need exists to adopt the Proposed Amendments to Regulation 2 (i) to revise the Air District's New Source Review requirements to address certain "deficiencies" identified by EPA in order to allow EPA to fully approve the District's New Source Review program under the federal Clean Air Act; (ii) to make certain additional revisions identified by Air District staff based on staff's experience in implementing the current regulations to ensure that the regulations function effectively; and (iii) to conform the Air District's programs to the Supreme Court's ruling in *Utility Air Regulatory Group v. EPA*, 134 S.Ct. 2427 (2014).

WHEREAS, the Board of Directors of the Bay Area Air Quality Management District has determined that the Air District has the authority to adopt the Proposed Amendments pursuant to Sections 40000, 40001 and 40702 of the Health & Safety Code, which authorize the Air District to adopt and implement regulations that are necessary to achieve and maintain air quality standards and to execute the powers and duties imposed upon the Air District; and under Title I and Title V of the Clean Air Act, which require California (through the Air District) to adopt permitting programs or face federal sanctions; among other legal authorities;

WHEREAS, the Board of Directors of the Bay Area Air Quality Management District has determined that the Proposed Amendments are written and displayed so that their meaning can be easily understood by the persons directly affected by the Rules addressed by the Proposed Amendments, and by the public at large;

WHEREAS, the Board of Directors of the Bay Area Air Quality Management District has determined that the Proposed Amendments are in harmony with and not in conflict with or contradictory to existing statutes, court decisions, and state and federal regulations;

WHEREAS, the Board of Directors of the Bay Area Air Quality Management District has determined that the Proposed Amendments do not impose the same requirements as any existing state or federal regulations, except to the extent necessary and proper to execute the powers and duties granted to and imposed upon the Air District as the agency responsible for implementing New Source Review and Title V permitting in the San Francisco Bay Area;

WHEREAS, the Board of Directors of the Bay Area Air Quality Management District has identified and determined that the Proposed Amendments will implement, interpret and/or make specific the provisions of Sections 40000, 40001, and 40702 of the California Health & Safety Code; Title I and Title V of the Clean Air Act; Part 51 and Part 70 of Title 40 of the Code of Federal Regulations; and related statutory, regulatory and judicial authorities;

WHEREAS, in accordance with the requirements of Health & Safety Code Section 40728 and other requirements of law, the Air District has maintained a file of the documents and other materials that constitute the record of proceedings on which this rulemaking project is based (including the Initial Study prepared for the project in accordance with the California Environmental Quality Act), which record documents and other materials are located at the Bay

Area Air Quality Management District, 375 Beale Street, Suite 600, San Francisco, CA 94105, and the custodian for which is Marcy Hiratzka, Clerk of the Boards;

WHEREAS, in accordance with the requirements of Health & Safety Code Section 40728.5 to the extent such requirements are applicable, and also as a matter of sound public policy notwithstanding whether or not such requirements are applicable, the Board of Directors of the Bay Area Air Quality Management District has actively considered the socioeconomic impacts of the Proposed Amendments and has reviewed and considered the Socioeconomic Impact Analysis for the Proposed Amendments prepared by Applied Development Economics, Inc.; and has determined that the Proposed Amendments will not have any significant adverse socioeconomic impacts;

WHEREAS, the Board of Directors of the Bay Area Air Quality Management District finds and determines that the Proposed Amendments are a "project" pursuant to the California Environmental Quality Act, Public Resources Code Sections 21000 *et seq*. (CEQA);

WHEREAS, the Air District is the CEQA lead agency for this project pursuant to Section 21067 of CEQA and Sections 15050 and 15051 of the State CEQA Guidelines (Title 14 of the California Code of Regulations);

WHEREAS, Air District staff have prepared an Initial Study for the Proposed Amendments pursuant to the requirements of CEQA, including but not limited to Sections 15063 and 15365 of the CEQA Guidelines, with assistance from and based on information and analysis developed by the Air District's CEQA Consultant Environmental Audit, Inc.;

WHEREAS, the Initial Study determined that the Proposed Amendments will not have any significant effect on the environment;

WHEREAS, based on the Initial Study and all of the information in the administrative record for the Proposed Amendments, Air District staff have prepared a proposed Negative Declaration for review and consideration by the Board of Directors, which finds that the proposed amendments will not have any significant effect on the environment;

WHEREAS, Air District staff published and provided notice of the Initial Study and proposed Negative Declaration on or before October 13, 2017, pursuant to all applicable requirements of CEQA, including but not limited to Section 15072 of the CEQA Guidelines, which included publication of notice in Bay Area newspapers, in County Clerks' offices, on the Air District's website, by email and United States mail, and by submission to the State CEQA Clearinghouse;

WHEREAS, in connection with the notice of the Initial Study and proposed Negative Declaration, Air District staff invited interested members of the public to submit comments on the Initial Study and proposed Negative Declaration, and staff have prepared summaries of the comments received and staff's responses in the Response to Comments document referred to above, which has been considered by the Board of Directors and is incorporated herein by reference;

WHEREAS, the Board of Directors of the Bay Area Air Quality Management District has considered the entire record, including the Initial Study and the public comments received, and

had determined using its own independent judgment and analysis there is no substantial evidence that the Proposed Amendments will have a significant effect on the environment, and has therefore determined that it is appropriate to adopt the Negative Declaration as proposed by Air District staff pursuant to Section 15074 of the CEQA Guidelines;

RESOLUTION

NOW, THEREFORE, BE IT RESOLVED that that the Board of Directors of the Bay Area Air Quality Management District does hereby adopt the Negative Declaration set forth in attachment A hereto and incorporated by reference as if fully set forth herein, finding that, in the Board's own independent judgment and analysis, and based on the whole record (including the Initial Study, the proposed Negative Declaration, and all public comments received), there is no substantial evidence that the Proposed Amendments will have a significant effect on the environment

BE IT FURTHER RESOLVED that the Board of Directors of the Bay Area Air Quality Management District does hereby adopt the Proposed Amendments, which consist of the amendments to Air District Regulation 2, Rule 1 (Permits – General Requirements), Regulation 2, Rule 2 (Permits – New Source Review), Regulation 2, Rule 4 (Permits – Emissions Banking), and Regulation 2, Rule 6 (Permits, Major Facility Review), as set forth in Attachment B hereto and incorporated by reference as if fully set forth herein; and with instructions to staff to correct any typographical or formatting errors before final publication;

BE IT FURTHER RESOLVED that the Board of Directors of the Bay Area Air Quality Management District intends and directs that all references to state and federal regulations set forth in Regulation 2, Rule 1; Regulation 2, Rule 2; Regulation 2, Rule 4; and Regulation 2, Rule 6 (including references in provisions of those Rules that are not affected by the Proposed Amendments as well as in provisions that are affected by the Proposed Amendments) shall refer to and be interpreted according to the referenced state and federal regulations as they exist on the date of this Resolution;

BE IT FURTHER RESOLVED that the record documents and other materials supporting this Resolution are located at the Bay Area Air Quality Management District, 375 Beale Street, Suite 600, San Francisco, CA 94105, and that the custodian for the documents and other materials is Marcy Hiratzka, Clerk of the Boards.

* * * * *

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 _____, 2017, by the following vote of the Board:

AYES:

NOES:

ABSENT:

_____
Lis Kniss
Chairperson of the Board of Directors

ATTEST:

_____
Katie Rice
Secretary of the Board of Directors

ATTACHMENT A

CEQA NEGATIVE DECLARATION

CALIFORNIA ENVIRONMENTAL QUALITY ACT
NEGATIVE DECLARATION

Technical and Administrative Amendments to Bay Area Air Quality Management District New Source Review and Title V Permitting Programs

Pursuant to the California Environmental Quality Act (CEQA), Public Resources Code §§ 21800 *et seq*, and Sections 15071 and 15074 of the CEQA Guidelines, the Board of Directors of the Bay Area Air Quality Management District (Air District) hereby adopts this Negative Declaration finding that the adoption of technical and administrative amendments to the Air District's New Source Review and Title V permitting programs will not have a significant effect on the environment.

Project Name: Technical and Administrative Amendments to the Bay Area Air Quality Management District New Source Review and Title V Permitting Programs.

Project Description: This Project is a set of technical and administrative amendments to the Air District's New Source Review (NSR) and Title V permitting programs. The amendments involve four rules in Regulation 2, which is the Air District's permitting regulation. The four rules are Regulation 2, Rule 1 (Permits – General Requirements), Regulation 2, Rule 2 (Permits – New Source Review), Regulation 2, Rule 4 (Permits – Emissions Banking), and Regulation 2, Rule 6 (Permits – Title V Major Facility Review). The amendments make certain revisions to these four rules (i) to address certain "deficiencies" identified by the U.S. Environmental Protection Agency (EPA) in order to allow EPA to fully approve the District's NSR program under the federal Clean Air Act; (ii) to address certain other areas where further revisions and clarifications of the NSR regulations are needed; and (iii) to align the Air District's programs with the U.S. Supreme Court's ruling in *Utility Air Regulatory Group v. EPA*. The amendments are described in more detail in the Initial Study attached hereto and in the Staff Report that Air District staff prepared to explain the basis for these revisions.

Project Location: The nine-county jurisdiction of the Bay Area Air Quality Management District, which includes all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties, and portions of southwestern Solano County and southern Sonoma County. A map of the project location is provided on page 2-2 of the Initial Study attached hereto.

Project Proponent and Lead Agency: The Bay Area Air Quality Management District.

Finding of No Significant Impact: The Board of Directors of the Bay Area Air Quality Management District hereby finds, using its own independent judgment and analysis, that based on the whole record (including the Initial Study and public comments received) that there is no substantial evidence that the Technical and Administrative Amendments to the Bay Area Air Quality Management District New Source Review and Title V Permitting Programs will have a significant effect on the environment.

Initial Study: A copy of the Initial Study documenting the reasons supporting the finding of no significant impact is attached hereto.

Mitigation Measures: No mitigation measures need to be included in the project to avoid potentially significant effects, as the project will not have any potentially significant effects.

ATTACHMENT B

AMENDMENTS TO :

Regulation 2, Rule 1 (Permits – General Requirements)

Regulation 2, Rule 2 (Permits – New Source Review)

Regulation 2, Rule 4 (Permits – Emissions Banking)

Regulation 2, Rule 6 (Permits – Major Facility Review)