Initial Study/Negative Declaration for the Bay Area Air Quality Management District

BAAQMD Regulation 2, Rule 5 (Regulation 2-5): New Source Review of Toxic Air Contaminants

Prepared for:

Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, CA 94105
Contacts: Sanjeev Kamboj, (415) 749-4634
Carol Allen
(415) 749-4702

Prepared By:

Environmental Audit, Inc.
1000-A Ortega Way
Placentia, CA 92870
Contact: Debra Bright Stevens
(714) 632-8521

October 2016

Chapter 1

Chapter 2

Chapter 3

FIGURES:

TABLES:

APPENDIX

CHAPTER 1

Introduction

1.1 PURPOSE OF THIS DOCUMENT

This Negative Declaration assesses the environmental impacts of the proposed modifications to the Bay Area Air Quality Management District's (BAAQMD or District) Air Toxics New Source Review Program, including amendments to Regulation 2, Rule 5 (Regulation 2-5) (proposed project). This assessment is required by the California Environmental Quality Act (CEQA) and in compliance with the state CEQA Guidelines (Title 14 California Code of Regulations §15000 et seq.). A Negative Declaration serves as an informational document to be used in the decision-making process for a public agency that intends to carry out a project, it does not recommend approval or denial of the project analyzed in the document. The BAAQMD is the lead agency under CEQA and must consider the impacts of the proposed new and amendment rules when determining whether to adopt them. The BAAQMD has prepared this Negative Declaration because no significant adverse impacts are expected to result from modifications to the Air Toxic NSR Program.

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,
- hazards & hazardous materials,
- hydrology / water quality,
- land use / planning,
- mineral resources,
- noise,

- population / housing,
- public services,
- recreation,
- transportation / traffic, and
- 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 BAAQMD). 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 BAAQMD), 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, "Description of the Proposed Rule," provides background information on the Air Toxic New Source Review Program, describes the proposed rule modifications, and describes the area and facilities that would be affected by the rule.

- Chapter 3, "Environmental Checklist," presents the checklist responses for each resource topic. This chapter includes a brief setting description for each resource area and identifies the impact of the proposed rule amendments on the resources topics listed in the checklist.
- Chapter 4, "References Cited," identifies all printed references and personal communications cited in this report.

CHAPTER 2

Description of the Proposed Rule

2.1 INTRODUCTION

The proposed project consists of proposed changes to the Air District's Air Toxics New Source Review (NSR) Program, including amendments to Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants and associated procedures. The Air Toxics Program has three main elements that integrate federal and state mandates and local goals: 1) the pre-construction review of new and modified sources of toxic air contaminants (TAC) emissions (the Air Toxics New Source Review program), 2) the assessment and reduction of health risks from existing facilities (the Air Toxics "Hot Spots" program), and 3) the implementation of air pollution control measures for specific categories of TAC sources. The Air Toxics NSR Program is a health risk-based program, where program requirements are based on results of health risk assessments (HRAs). HRAs are an analysis that estimates the increased likelihood of health risk for individuals in the affected population that may be exposed to emissions of one or more toxic substances.

2.2 OBJECTIVES

The U.S. EPA has set primary national ambient air quality standards for air pollutants to define the levels considered safe for human health. The California Air Resources Board (CARB) has also set California ambient air quality standards. The Bay Area is a non-attainment area for particulate matter of 10 microns or less (PM10) or for particulate matter of 2.5 microns or less (PM2.5). Under State law, non-attainment areas must prepare plans showing how they will attain the state standards. The BAAQMD has prepared, approved and is currently implementing, the 2010 Clean Air Plan (CAP) which provides a plan to show how the Air District will meet applicable air quality standards. The CAP is being updated in 2016.

The primary objectives of the proposed rule amendments are to evaluate and mitigate potential increases in public health risks resulting from new and modified sources emitting TACs and to provide net health risk benefits by improving the level of control when existing sources are modified or replaced. The rule amendment is designed to incorporate the Office of Environmental Health Hazard Assessment's (OEHHA) 2015 HRA Guideline Revisions into Regulation 2-5. The overall effect of the Air District's proposed rule revisions is that cancer risk will increase for many projects even though emissions remain the same. This is because estimating cancer risk using new and better scientific information contained in revised OEHHA and CARB guidelines will result in higher risk numbers for many toxic air contaminants. For most toxic air contaminants, the cancer risk will increase by approximately 40 percent for the same emissions level

compared to the cancer risk calculated using the Air District's current HRA Guidelines. For a dozen TACs, the cancer risk could increase by up to a factor of five. The net result of these proposed revisions is that projects will trigger HRA and toxics best available control technology (TBACT) requirements and will reach project risk limits at lower emission rates. More projects will be required to control TAC emissions and to reduce project health impacts than would otherwise be required to do so under the current rule.

2.3 BACKGROUND

Over the last several decades, public concern about air pollution has expanded to include toxic pollutants. A pollutant is considered toxic if it has the potential to cause adverse health effects such as cancer, birth defects, respiratory ailments, or other serious illness. The Air District has implemented programs that are designed to identify and reduce the public's exposure to TACs.

The Air District's Air Toxics Program is directed at reducing TAC emissions from stationary sources. Based on the Air District's TAC emissions inventories, toxicity weighted emissions have decreased by at least 87 percent since 1990. Since Rule 2-5 was last revised in 2010, cancer risk weighted emissions from Bay Area stationary sources have decreased by 26 percent with emission reductions observed for the TACs that contribute most to cancer risk.

The Air Toxics NSR Program and the Air Toxics "Hot Spots" Program are health risk based programs. These programs have action and decision thresholds that are based on estimated health risks for the exposed population. To ensure parity with other air districts within the state and conformity with state mandates, the BAAQMD follows state-wide guidance regarding HRA methodologies to evaluate public exposures to TACs and to calculate and manage the resulting health risks. Although these programs focus on different types of sources (new and modified sources for the Air Toxics NSR Program and existing sources for the Air Toxics "Hot Spots" Program), both programs rely on the same state-wide HRA guidance: Cal/EPA's OEHHA HRA Guidelines.

OEHHA periodically updates these HRA Guidelines to reflect advances in science. In 2015, OEHHA adopted a major update to the HRA Guidelines that focused on children's health protection. The Air District is planning to update the Air Toxic NSR and Air Toxic "Hot Spots" Programs by incorporating OEHHA's 2015 HRA Guideline Revisions into the Air District's health risk assessment procedures for these programs.

This Negative Declaration (Neg Dec) discusses changes to the Air Toxics NSR Program and amendments to the rule that implements this program: Regulation 2, Rule 5, New Source Review of Toxic Air Contaminants.

2.4 AIR TOXICS NEW SOURCE REVIEW (NSR) PROGRAM

The Air Toxics NSR Program was established in 1987 and was initially implemented based on policies and procedures established by the Air District's Air Pollution Control

Officer (APCO). In 2005, the Air District updated the Air Toxics NSR Program and codified the Air Toxics NSR policies and procedures in Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants, in the Manual of Procedures, Volume II, Part 4 - New and Modified Sources of Toxic Air Contaminants, and in the BAAQMD Health Risk Screening Analysis (HRSA) Guidelines. In the 2010 rule amendment, the Air District updated Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants to include new and revised health values as well as age-sensitivity factors. Age sensitivity factors are cancer risk adjustment factors that account for children's heightened sensitivity to air toxics. OEHHA first identified age sensitivity factors in a June 2009 Technical Support Document for the OEHHA HRA Guidelines. These age sensitivity factors are one of several measures OEHHA included in the 2015 HRA Guideline Revisions.

The goal of the Air Toxics NSR Program is to evaluate and mitigate potential increases in public health risks resulting from new and modified sources of TACs based on pre-construction permit review. The program is also intended to reduce existing health risks by requiring updated control requirements when older, more highly polluting, sources are modified or replaced. Regulation 2-5 contains health risk based thresholds at which a new or modified source must employ TBACT and health risk limits that each project cannot exceed. The rule also delineates the procedures to be used for calculating TAC emission increases from sources and projects and for evaluating the health impacts that result from these emission increases.

When evaluating heath impacts from new and modified sources, the Air District follows the BAAQMD HRA Guidelines, which generally conform to State Air Toxics "Hot Spots" HRA guidelines. OEHHA periodically revises the State HRA guidelines and has made a number of changes since the BAAQMD HRA Guidelines were updated in 2010.

The Air Toxics NSR program relies on two primary program components:

- Risk assessment, which involves estimating risk for a project using a prescribed methodology, and
- Risk management, which involves taking action on the project based on risk action levels.

The stringency of the program is affected by both the methodology and the action levels. Stringency can be increased either by changes in methodology that result in a higher calculated risk or by reductions in the risk action levels.

2.5 PROPOSED CHANGES TO AIR TOXICS NSR PROGRAM

The Air District is proposing to increase the stringency of the Air Toxics NSR Program by updating Air District HRA procedures that incorporate the 2015 OEHHA HRA guidelines, thus resulting in higher calculated cancer risks for the same level of emissions. The Air District is not proposing any changes to the risk action levels for the

Air Toxics NSR Program. The Air District is proposing to make the following specific revisions to the Air Toxics NSR Program:

- Implement OEHHA's Revised HRA Guidelines (2015), except for gasoline dispensing facilities, which will continue to follow the Air District's current HRA Guidelines,
- Implement CARB/CAPCOA Risk Management Guidance for Stationary Sources of Air Toxics (2015),
- Update the Air District's acute and chronic emission rate trigger levels for TACs, toxicity weighting factors, and OEHHA health effects values in Table 2-5-1,
- Revise the emission calculation procedures for modified sources that were initially installed before 1987, and add net project risk limits for projects that include these pre-1987 modified sources,
- Extend the look-back period from two years to three years for related applications in a project,
- Add an exemption from health risk assessment for any alteration of a source that results in no increases in toxicity weighted emissions for that source,
- Add an exemption from health risk assessment for internal combustion engines and gas turbines smaller than 50 bhp, and
- Clarify terminology in Regulation 2-5.

CARB is currently working on updating the emission factors and Industrywide HRA guidelines for gasoline dispensing facilities (GDFs). As a result, the Air District is proposing to delay implementation of the updated residential cancer risk calculation procedures for GDFs at this time, but GDFs would be subject to the proposed Rule 2-5 revisions that include updated health effects data, updated TAC trigger levels, and revisions to modified source emission calculation procedures.

2.5.1 Proposed HRA Guidelines

As mandated under the Children's Environmental Protection Act of 1999 or SB25, OEHHA has been evaluating a number of revisions to HRA procedures to include consideration of children's health protection. In the last decade, advances in science have shown that early-life exposures to TACs contribute to an increased lifetime risk of developing cancer, or other adverse health effects, compared to exposures that occur in adulthood.

On March 6, 2015, OEHHA adopted a revised Air Toxics "Hot Spots" Program Guidance Manual for the Preparation of HRAs to replace the 2003 Air Toxic "Hot Spots" Guidance Manual. OEHHA's 2015 HRA Guidelines reflect children's greater sensitivity to TACs, include more refined data related to childhood and adult exposure to air toxics, and affect how risk assessments are conducted. These guideline revisions primarily affect calculated cancer risks for residential receptors.

On July 23, 2015, CARB adopted the CARB/CAPCOA Risk Management Guidance for Stationary Sources of Air Toxics. This document provides guidance on managing potential cancer and non-cancer health risks from sources subject to Air Toxics NSR Permitting and Air Toxics "Hot Spots" Programs. This document includes additional recommendations that affect how risk is calculated for certain types of risk assessments.

The Air District is proposing to incorporate both of these guidance documents into the Air District's Toxic NSR Program. OEHHA's 2015 HRA Guidelines include five key revisions to HRA procedures, which are as follows:

- Age Sensitivity Factors, which are adjustment factors that account for children's heightened sensitivity to air toxics;
- Age-Specific exposure variables, such as breathing rates, dermal uptake rates, food ingestion rates, etc., for each of six age groups;
- Fraction of Time at Home based on updated population and activity statistics;
- Exposure Durations for residents and workers based on updated demographic data; and
- Spatial Averaging of Exposure Concentrations, which reflects a person's typical movement within their home or workspace.

The Air District is proposing to incorporate these five key revisions into the Air District's HRA Guidelines. The Air District has been using Age Sensitivity Factors (ASFs) in toxic NSR HRAs since January 2010. OEHHA's recommended ASFs have not changed. The Air District is proposing to include all of OEHHA's recommended age-specific exposure variables in Air District HRAs. For HRAs involving toxics with only inhalation exposure variables, the Air District is proposing to follow CARB's recommended policy of using the 95th percentile breathing rate for the two most sensitive age groups and the 80th percentile breathing rate for the other age groups (the 95/80 DBR policy). For fraction of time at home (FAH), the Air District will use the new recommended FAH factors for all age groups, including an FAH of 1.0 for children under age 16 when schools are impacted by a project. The Air District is proposing to reduce the exposure duration assumptions to 30 years for residents and 25 years for workers to conform to OEHHA's HRA Guidelines. For spatial averaging, the Air District is proposing to use a 400 square meter grid with 5-meter receptor intervals to determine the average concentration near the maximum impact point.

2.5.2 Impacts of HRA Guidelines Changes

The vast majority of Air District NSR risk assessments involve TACs that have a single exposure pathway (the inhalation pathway). Examples of common inhalation only TACs are: diesel engine exhaust particulate matter (PM), benzene, formaldehyde, and perchloroethylene. As reported in the CARB/CAPCOA Risk Management Guidance for Stationary Sources of Air Toxics, inhalation cancer risks calculated using the 2015 risk assessment procedures are expected to be one and a half to three times higher than

inhalation cancer risks calculated using OEHHA's 2003 Risk Assessment Guidelines for the same emission rate and cancer potency value. Age sensitivity factors are the largest contributor to this projected increase in cancer risk. The Air District has included age sensitivity factors in its Toxics NSR program HRAs since 2010. As a result, the Air District expects that including the remaining guideline changes (age specific exposure variables with the CARB 95/80 daily breathing rate policy, fractions of time at home, exposure duration, and spatial averaging) will result in about a 40 percent increase in inhalation cancer risk for most sources compared to the Air District's current toxics NSR risk assessment procedures.

For HRAs that include TACs with multiple exposure pathways, OEHHA's 2015 HRA procedures may result in additional increases in calculated cancer risk compared to the 2003 HRA procedures. Due to the wide variety of possible multiple exposure pathway projects, it is difficult to predict exactly how large of an impact the 2015 risk calculation procedures will have on future projects. However, the Air District found that using 2015 HRA procedures in HRAs for several projects involving multi-pathway pollutants resulted in cancer risks that were three to five times higher than cancer risks determined using current Air District procedures. Less than five percent of the Air District's NSR risk assessments involve multi-pathway pollutants.

2.5.3 Proposed TAC Trigger Level Changes

The Air District uses TAC emission rate trigger levels to determine the need for an HRA for a project involving new and modified sources. The TAC trigger levels are considered to be reasonable de minimis emission rates (acute and chronic) for use at a project-level. Projects with emissions below the TAC trigger levels are unlikely to cause, or contribute significantly to, adverse health risks. These TAC trigger levels are also used: (1) to establish permit requirements for certain sources that may otherwise qualify for permit exemptions, (2) as part of the applicability of the accelerated permit program, and (3) in determining permit fees.

The proposed TAC trigger levels are calculated using: (1) target health risk levels that are considered de minimis for project-level risks; (2) OEHHA health effect values; (3) generally conservative modeling procedures that establish the extent to which a TAC is transported and dispersed in the atmosphere after it is emitted from the source; and (4) health-protective assumptions regarding the extent of an individual's response to an emitted TAC. The current TAC trigger levels and the OEHHA health effects data on which these trigger levels were based are identified in Table 2-5-1 Toxic Air Contaminant Trigger Levels in Regulation 2, Rule 5. Table 2-5-1 was last updated in January 2010.

Since 2010, OEHHA has updated non-cancer health effects values for a number of TACs, has added 8-hour reference exposure levels (RELs) for several TACs, and has identified health effects values for a new TAC. In addition, OEHHA's 2015 HRA Guidelines include updates or revisions to a number of the health protective assumptions that the Air District uses to calculate the TAC trigger levels. The Air District is proposing to

incorporate OEHHA's new health effects values and new health risk calculation assumptions into the trigger level calculation procedures. The changes to health effect values will impact acute trigger levels and chronic trigger levels for non-carcinogenic compounds. The changes to the health protective assumptions will impact chronic trigger levels for carcinogenic compounds.

2.5.4 Impacts of TAC Trigger Level Changes

For non-carcinogenic compounds and compounds with acute impacts, the trigger levels will change in proportion to the change in the OEHHA health effect value for that compound. Some compounds have large changes in non-cancer health effects values. For example, the acute REL for benzene will decrease by 98% and the chronic REL for benzene will decrease by 95%. However, for benzene, cancer risk continues to be the dominant chronic health effect. Considering the differences between the acute and chronic trigger levels for benzene, acute impacts are not likely to be a dominant issue for benzene emission projects, such as gasoline dispensing facilities. Cancer risk is expected to be the dominant health effect for 1,3 butadiene as well, but acute health impacts could become more significant for projects emitting nickel and nickel compounds.

The proposed TAC trigger levels will decrease by about 30% for most carcinogenic TACs. The Air District reviewed the proposed TAC trigger levels for several common carcinogens and compared them to expected emission rates from small sources. The Air District found that the proposed chronic trigger level for diesel particulate matter is less than the expected emission rate for some emergency standby engines that are smaller than 50 brake-horsepower (bhp). These small engines (< 50 bhp) are currently exempt from Air District Regulation 9, Rule 8 and from Air District permitting requirements. To prevent unintended consequences for engines smaller than 50 bhp, the Air District is proposing to exempt these small engines from the Regulation 2, Rule 5 health risk assessment requirement.

For a few compounds that have significant carcinogenic impacts from non-inhalation pathways (lead, methylene dianiline, PCBs, and chlorinated dioxins and furans), the TAC trigger level will decrease by about 90%. It is difficult to project how these changes may impact future projects, but projects involving multi-pathway pollutants are not common (less than 5% of the HRAs conducted recently involved multi-pathway pollutants) and emissions of these compounds often result in a small contribution to the maximum project health risk.

2.5.5 Proposed Regulation 2, Rule 5 Amendments

The Air District is proposing to amend Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants. The Air District is proposing several rule changes that impact modified sources, related applications in a project, and small engines. These proposed revisions are explained in more detail below. The Air District is also proposing non-substantive rule amendments that will clarify requirements and procedures, improve

conformity with OEHHA's HRA Guidelines, and correct citations. The Air District is not proposing any changes to this rule's health risk thresholds.

Modified Sources

The Air District's toxic NSR program became effective on January 1, 1987. Currently, HRAs involving a source that was operating prior to January 1, 1987 are based on the emission increases occurring after this date. For all other new or modified sources, the HRA is based on the total emissions from the proposed new or modified source. This emission calculation disparity for modified sources can create confusion when evaluating HRA results, especially for the public who may not have a detailed understanding of this emission calculation procedural difference. The Air District is proposing to eliminate the January 1, 1987 baseline date for modified sources and to determine health risks using the total proposed emissions from all the sources in the project. This change is intended to improve the public's understanding of HRA results by eliminating the uncertainty regarding emission calculation procedures for modified sources.

Since it is possible that pre-1987 emissions from a modified source could cause a project to exceed a project risk threshold, the Air District is proposing to add several new sections to Rule 2-5 to handle this possible outcome. If pre-1987 emissions from a modified source are above the project risk limits, the Air District is proposing to allow a facility to include contemporaneous toxic emission reductions from other equipment in the HRA to demonstrate that the overall project will meet net project health risk limits that are the same has the current project risk thresholds. The Air District is also clarifying that any source that has no increases in toxicity weighted emissions is exempt from the HRA requirement.

Related Applications in a Project

Currently, a project includes the current application and any related applications submitted within the previous two years. This look-back procedure is intended to discourage circumvention of Rule 2-5 that may occur by breaking a project into multiple applications. The Air District is proposing to extend this look-back period to three years to further discourage circumvention.

Small Engines

The District is adding an exemption from HRA requirements for small engines and gas turbines (< 50 bhp). Engines smaller than 50 bhp are currently exempt from Air District permitting requirements and from state and Air District prohibitory regulations. The proposed trigger level changes could have unintended impacts on these very small sources, such as triggering a risk screen to verify that the engine is exempt from Air District permitting requirements. To avoid this impact, the Air District is proposing to exempt small engines from the HRA requirements.

2.5.6 Impacts of Rule 2-5 Amendments

The proposed amendments to Rule 2-5 that affect modified sources and related applications in a project may result in a higher rate of toxic air contaminant emissions in a project compared to the current rule. As a result of these higher toxic emission rates in the project, a modified source might trigger TBACT and a project may trigger risk reduction measures to meet project risk limits or net project risk limits. However, these types of projects are very rare. The three-year look back period is limited to related projects. Any project that is deemed related under the project definition, ought to meet any tighter restrictions that might apply, as intended by this regulation. For pre-1987 modified sources, the Air District is adding consideration of contemporaneous on-site toxic risk reduction for projects that exceed a risk limit due to these pre-1987 emissions. The net project health risk limits will encourage facilities with significant health risks from older operations to reduce toxic emissions at the site, when these older operations are modified.

Overall, the Air District does not anticipate any changes in the number of projects subject to TBACT or risk reductions as a result of these rule changes due to the rarity of such projects. In the most extreme case, such as a gas station that is meeting TBACT and has no opportunities for contemporaneous on-site reductions, the Air-District would not allow a requested increase in gasoline throughput for that station.

The proposed exemption from HRA requirements for small engines is intended to ensure the status-quo regarding the triggering of HRA requirements. Therefore, this rule change is not expected to have any impacts.

2.6 POTENTIAL ENVIRONMENTAL IMPACTS OF AIR TOXIC NSR PROGRAM CHANGES

The Air District's proposals to update the Air Toxics NSR Program will increase the stringency of this program. Implementing the 2015 OEHHA risk assessment guidelines will result in lower risk screen trigger levels for most of the carcinogenic TACs and will result in higher cancer risks for the same level of TAC emissions. As a result, more new source review projects will be subject to health risk assessment requirements, more NSR projects will trigger TBACT, and more NSR projects will require revisions or limitations to meet the Air District's project risk limits.

The Air District currently conducts about 300 HRAs per year for a wide variety of new and modified sources. About 80 percent of toxic NSR HRAs conducted by the Air District involve diesel-fired internal combustion engines. Although the trigger level threshold for diesel engine exhaust particulate matter is decreasing from 0.34 pounds per year to 0.26 pounds per year, the Air District does not expect an increase in the number of diesel engine projects that are subject to HRA requirements.

The Air District conducts about 60 HRAs per year for toxic NSR projects involving non-diesel engine combustion operations, gas stations, remediation operations, petroleum refinery projects, and other project types. Due to the reduction in HRA trigger level requirements, the Air District expects an additional 100 projects per year to require HRAs.

Currently, about 20 projects per year require some type of risk reduction action to meet TBACT requirements or project risk limits. The Air District anticipates that the rule revisions will increase the number of projects requiring risk reduction to about 80 projects per year. Thus, the rule revisions will require risk reduction measures for about 60 more projects per year. The number and types of control measures that are expected to be implemented as a result of the new OEHHA risk assessment guidelines are summarized in Table 2.6-1.

Table 2.6-1 – Annual Average Number of Projects that May Require Project Modifications and Potential Controls [a]

Types of Projects	Projected Total Number of Projects Per Year [c]	Limit Throughput Rate or Operating Time	Diesel Particulate Filters	Oxidation Catalysts	Enclosure and Vent to Baghouses	Carbon Adsorbers	Thermal or Catalytic Oxidizers	Other Risk Reduction Measures [b]
Diesel Engines – emergency	45	37	4					4 – increase stack height
Diesel Engines – fire pump	1		1					
Diesel Engines – portable/prime	2		2					
Gas Engines – power plant	1	possible [d]		1				increase stack height or revise source location
Crematory – pet or human	1	1 or …						increase stack height or revise source location
Other Combustion	1	1 or …						increase stack height or revise source location
Gas Stations – new/modified	1	1						For new stations, possibly revise source locations
Remediation – SVE	3	possible [d]				possible [d]	3	If proposed project already has oxidizers, use other possible control measures or increase stack height or change source location
Cement, Concrete, and Asphalt	2	possible [d]			2			revise source location
Coating and Solvent	1	possible [d]				possible [d]	1	increase stack height
Landfill Modifications	1							1 – Revise TAC concentration limits for landfill gas
Solid Material Handling	1				1			
Total	60	40	7	1	3		4	5

a. This data is based on BAAQMD health risk assessment data collected between January 1, 2010 and August 31, 2015 (68 months) for permit applications involving new and modified sourced.
b. This table represents the Air Districts best prediction of the preferred control method for a given project. "Other risk reduction measures" explores additional plausible alternatives.
c. Some of these project types have an annual average occurrence of less than 1, but are shown here as 1 to highlight all potentially impacted industries.
d. "Possible" indicates where multiple control measures are feasible and it is less clear which measure is likely to be chosen.

Gasoline dispensing facility (GDF) applications are included in Table 2.6-1. Most GDF applications involve dispenser replacements or other equipment improvements that do not involve any TAC emission increases. Based on recent application data, about 5% of the gas station applications (10 projects per year) involved new or modified gas stations with TAC emission increases that were subject to health risk assessment requirements. The Air District estimates that the proposed TAC trigger level changes could increase the number of new or modified gas stations that are subject to HRA requirements up to about 50 projects per year.

Although more GDFs will be required to undergo HRAs due to the trigger level changes, the Air District does not expect any significant changes to GDF permitting decisions, because GDFs will continue to be subject to the current health risk calculation procedures. For the additional projects triggering HRAs, about 40% are expected to be new stations with proposed throughput rates of 0.5-1.0 million gallons/year. These new low throughput rate stations are expected to have TBACT controls and are likely to meet project risk limits with no project changes. An additional 24 applications/year may involve modified GDFs that trigger an HRA, and 6% of these, or 1 application/year, are likely to require a lower throughput rate than was initially requested, based on current statistics regarding throughput increase requests for modified GDFs. The elimination of the January 1, 1987 baseline date for modified sources could potentially impact these GDF applications as well. If a GDF has a large pre-1987 throughput limit, including the total proposed emissions for a modification request could result in a GDF exceeding a project risk limit based on the facility's currently permitted throughput rate. Since GDFs are employing TBACT and rarely include other types of sources at the site, contemporaneous TAC emission reductions are not likely to be possible for GDFs. In this case, the Air District may need to deny a throughput increase for the proposed project. However, most of the additional modified stations triggering HRAs are expected to be low throughput level stations. Also, none of the GDF applications evaluated since 2010 involved pre-1987 GDFs. Therefore, it is unlikely that a modification of a pre-1987 station will occur that would also have a large enough throughput rate and a high enough project risk to result in denial of a throughput increase request.

In summary, the proposed revisions to the Air Toxics NSR Program will:

- Increase the stringency of this program,
- Allow less toxic emission increases for new or modified sources than would be allowed by the current program,
- Increase the number of new or modified projects that will be subject to HRA requirements from about 300 projects per year currently to about 400 projects per year,
- Increase the number of new or modified projects that will be required to implement risk reduction measures by about 60 projects per year.

2.7 EMISSION CONTROL TECHNOLOGIES FOR TOXICS

To comply with TBACT or project risk limits, some projects involving new or modified sources, which have been identified as potentially exceeding the risk thresholds in Regulation 2-5, may need to implement risk reduction measures. Risk reduction measures may include the use of emission capture and control technologies that are intended to capture and remove a TAC or to convert a TAC into a less toxic material. However, risk reduction measures may also include use of alternative system designs, products, or technologies that reduce or prevent the emission of the TAC or other measures that reduce the amount of TACs that nearby receptors are exposed to. Examples of potential risk reduction measures are:

- Emission Capture and Control Technologies
  - Add system enclosures or emission capture systems;
  - Add emission control systems or conversion devices;

- Pollution Prevention Measures
  - Limit throughput rates or operating times;
  - Employ alternate technologies;
  - Reformulate or substitute products;
  - Modify production systems or practices;

- Public Exposure Reduction Measures
  - Modify source locations
  - Modify exhaust point locations or orientation
  - Increase stack height

The most appropriate risk reduction measures for a project are dependent on many factors such as:

- project design and operating requirements;
- the physical characteristics and chemical properties of the TACs that will be emitted;
- the concentration of TACs in the exhaust stream;
- exhaust system design parameters such as the exhaust flow rate, temperature, pressure, and stack height;
- the efficiency of the collection and control equipment needed to comply with the requirements of the rule;
- availability of alternative technologies or substitute products; and
- the distances to and locations of nearby receptors.

After the types of appropriate risk reduction measures have been identified for a project, the level of risk reduction needed and the cost of the risk reduction measure are key factors for the final risk reduction measure decision.

The type of emission capture and control technology that may be used depends on the specific type of TAC. Generally, TACs may be classified as inorganic aerosols and particulate matter, inorganic gases, volatile organic compounds (VOCs), and semivolatile organic compounds. Each different type of TAC is likely to need a specific type of control technology. Pollution prevention measures are highly dependent on the type of project and the availability of project alternatives. Public exposure reduction measures are available for all types of TAC projects. The most common risk reduction measures that are likely to be encountered as a result of the proposed Regulation 2, Rule 5 amendments are discussed in more detail below.

Emission control technologies that may be applied to new and modified TAC projects as a result of the proposed Regulation 2, Rule 5 amendments are categorized into the following groups and are summarized in Table 2.6-1:

- Enclosures and collection systems for particulate matter TACs;
- Filtration for toxic aerosols and particulate matter;
- Carbon adsorption and adsorption-oxidation systems for VOCs;
- Chemical absorption for VOCs;
- Thermal and catalytic oxidation for inorganic gases (such as hydrogen sulfide) and organic compounds; and
- Combination systems for the control of halogenated VOCs;

While other types of control equipment may be available for emissions control (e.g. wet gas scrubbers), they are either commonly employed and are already part of the project (such as wet scrubbers used to abate acid gas emissions from semiconductor fabrication operations) or are not expected to be used because of cost or control efficiency.

Pollution prevention measures that may be employed by new and modified TAC projects include:

- Reduced throughput or operating time for particulate matter TACs and organic compound TACs
- Alternative technologies for particulate matter
- Product substitution for VOCs

Public exposure reduction measures may be used for any type of TAC emission.

Table 2.7-1 – Risk Reduction Measures and Target Substances

Risk Reduction Measure	Substance Group	Control Efficiency
Enclosures	Particulates	Varied
Capture and Collection Systems	VOCs and Particulates	Varied
Diesel Particulate Filter	Particulates	85%
Baghouse	Particulates	99-99.9%
HEPA filter and pre-filter	Particulates	99.9-99.99%
Carbon Adsorption	VOCs	90-99%
Thermal and Catalytic Oxidizers	VOCs and Inorganic Gases	98-99.9%
Reduced Throughput or Operating Time	VOCS and Particulates	Varied
Alternative Technologies	Particulates	Up to 100%
Product Substitution	VOCs	Up to 100%
Relocate Source or Stack	All TAC Types	Not Applicable
Stack Modifications	All TAC Types	Not Applicable

2.7.1 Enclosures

Cement plants and concrete batch plants use raw materials that contain toxic metals and crystalline silica. Particulate matter emissions from the storage, handling, and processing of these raw materials contains these TACs and can become airborne or contaminate groundwater if not properly contained. High winds and rain are particular concerns for lose materials. By building an enclosure around these types of materials, the risk of release is greatly reduced. This control measure may have minor environmental impacts associated with the construction of the enclosure, but will have no lasting impacts as a result of operation.

2.7.2 Capture Systems

Dust and VOC capture systems consist of hoods, ducting, and a blower to collect TACs within a building. These capture systems are typically used in conjunction with an emission control system. Power needs for the blowers are generally low compared to total power use at the facility. Since capture systems are typically contained within existing buildings and used in conjunction with emission control systems, these systems are not expected to have any adverse environmental impacts.

2.7.3 Diesel Particulate Filters (DPF)

DPFs allow exhaust gases to pass through the filter medium, but trap diesel PM. Depending on engine baseline emissions, fuel sulfur content, and emission test method or duty cycle, DPF's can achieve a PM emission reduction of greater than 85 percent. In addition, DPFs can reduce hydrocarbon emissions by 95 percent and CO emissions by 90 percent. Limited test data indicate that DPFs can also reduce NOx emissions by six to

ten percent. Most DPFs require periodic regeneration, most commonly achieved by burning off accumulated diesel PM. There are both active DPFs and passive DPFs. Active DPFs use heat generated by means other than exhaust gases (e.g., electricity, fuel burners, microwaves, and additional fuel injection to increase exhaust gas temperatures) to assist in the regeneration process. Passive DPFs, which do not require an external heat source to regenerate, incorporate a catalytic material, typically a platinum group metal, to assist in oxidizing trapped diesel PM. Although there is a slight increase in directly emitted NO_2 during the regeneration of passive DPFs, overall there is ultimately a net reduction in NO_2 emissions.

2.7.4 Baghouses

Baghouses remove particulate matter from gas streams in the same manner as a household vacuum cleaner bag, using the principle of aerodynamic capture by fibers. The bag fabric used in the baghouse largely determines emission reduction effectiveness. Natural or synthetic bag fabrics such as cotton or Nomex will generally have less reduction capability than polytetrafluoroethylene (PTFE) fabric, for example. PTFE bags are capable of a particulate collection efficiency of 99 to 99.9 percent for particle sizes down to 1.0 micron (μm) when properly operated and maintained. Thus, renovating current baghouses to use a more effective fabric can contribute to emission reductions.

2.7.5 High-Efficiency Particulate Arrestors (HEPA) Filters

Used in conjunction with a baghouse or cartridge filter as a prefilter, high-efficiency particulate arrestors (HEPA) filters can trap toxic particles as small as 0.1 μm at an efficiency of 99.99 percent or greater. Like cartridge filters, HEPA filter elements are of pleated construction. Air-to-cloth ratios for HEPA filters are low due to high media density, low porosity, and resulting high-pressure drop. HEPA filters are generally limited to ambient temperature (100°F), though special applications for higher temperatures are available. Unlike bags or cartridge filters, HEPA filters are not automatically cleaned. When a HEPA filter element becomes loaded with particulate matter, the element is changed out and disposed of as dry solid waste (possibly hazardous).

2.7.6 Oxidation – Thermal and Catalytic Oxidizers

Oxidation is the process of converting VOC gases to carbon dioxide and water through combustion. Of the various types of oxidizers available, the two basic types of equipment used most often are thermal oxidizers and catalytic oxidizers. Thermal oxidizers rely on direct contact between toxic gases and high-temperature flames to disassociate and destroy toxic substances. Catalytic oxidizers rely on an active catalyst bed at moderate temperatures to break intramolecular bonds, also causing disassociation and destruction of toxic substances.

Thermal oxidizers include afterburners, recuperative thermal oxidizers, and regenerative thermal oxidizers. Afterburners are most commonly used to control intermittent

emergency releases of VOCs and typically operate in the 1,200°F to 1,400°F range. Recuperative thermal oxidizers and regenerative thermal oxidizers both aim to recover and reuse heat from exhaust via heat exchange. Recuperative thermal oxidizers operate between 1,400°F and 1,600°F, recover between 60 and 95 percent of the energy required to run them, and are about 98-99 percent effective at eliminating VOCs. Regenerative thermal oxidizers operate between 1,800°F and 2,000°F, are 99-99.9 percent effective at eliminating VOCs, and typically use less fuel than recuperative thermal oxidizers. The initial cost of regenerative thermal oxidizers is higher, but the life-time cost tends to be lower when savings in energy and fuel are considered.

Catalytic oxidizers operate similarly to thermal oxidation in that heat is used to convert the VOC contaminants to carbon dioxide and water. However, a catalyst is used to lower the oxidation activation energy, allowing combustion to occur at 600°F to 800°F, significantly lower temperatures than those of thermal units. In catalytic oxidation, the pre-heated gas stream is passed through a catalyst bed, where the catalyst initiates and promotes the oxidation of the VOC without being permanently altered itself. The primary advantage of catalytic oxidation over thermal oxidation is lower fuel cost, depending on the efficiency of the air pre-heater. Disadvantages include higher capital costs, periodic catalyst replacement, and the inability to handle halogenated organics.

2.7.7 Oxidation Catalysts

Oxidation catalysts can also be used to facilitate chemical reactions that convert harmful pollutants and VOCs into non-threatening chemical compounds. For example, a platinum catalyst can be used to convert formaldehyde into carbon dioxide and water ($CH_2O + O_2 \rightarrow CO_2 + H_2O$). This process has been used successfully in the past to reduce formaldehyde emissions from natural gas fired engines, and it is technologically feasible for landfill gas fired engines as well. Additionally, as a new BACT requirement, new landfill gas engine projects may be required to have oxidation catalysts to control carbon monoxide emissions.

2.7.8 Carbon Adsorption

Carbon adsorption is a process by which VOCs are collected within the pores of activated carbon, most commonly derived from charcoal. While materials such as silica gel or alumina may be used as adsorbents, activated carbon is the most common for VOC removal. Carbon may also be used to remove other compounds such as sulfur-bearing or odorous materials. Advantages of carbon adsorption include the recovery of a relatively pure product for recycle and reuse and a high removal efficiency with low inlet concentrations. In addition, if a process stream is already available onsite, additional fuel costs are low, the main energy requirement being electrical power to run fan motors. Disadvantages are the potential generation of a hazardous organic waste if the recovered product cannot be reused, the generation of potentially contaminated wastewater that must be treated (when regeneration is by steam), and potentially higher operating and maintenance costs for the disposal of these two waste streams. Well designed and

operated carbon adsorption systems are normally 90-99% percent efficient at VOC removal.

2.7.9 Reduced Throughput or Operating Time

Reducing the amount of materials used in a given process is a straightforward way to reduce emissions. Likewise, reducing the overall time the process operates over a given period will lead to similar emission reductions. The District believes that many facilities will meet the risk thresholds by employing this type of control measure. No equipment will be used to meet emission reductions via these methods, thus there will be no adverse environmental impacts.

2.7.10 Alternative Technologies

When health impacts of a proposed project are significant, some applicants may decide to use alternative technologies. One common example of an alternative technology is the use of electrically powered equipment instead of diesel-fired IC engines. This type of alternative technology would obviously increase electricity usage at the site, but this impact is not expected to be significant given the current power infrastructure in the Bay Area.

Another common example of using an alternative technology is to use a spark-ignited engine fired on natural gas or propane instead of a compression-ignition engine fired on diesel-fuel. Properly controlled gas fired engines typically have lower health impacts than a comparable diesel-fired engine. The alternative engine might not be as efficient and so a larger engine may be required. Carbon monoxide and VOC emissions might be higher than the diesel fueled engine. SCR might be required to control NOx emissions, which would involve use of ammonia. These potential air quality and hazard impacts would be subject to District requirements and proper storage and handling limitations that would ensure that these impacts would not be significant.

For less common projects, the use of an alternative technology may be a possible risk reduction measure. Sometimes, the alternative technology may have some drawback compared to the initial proposal, such as less efficient, uses more water, requires disposal of a waste, etc. However, these potential environmental impacts are likely to be small and within the scope of any environmental reviews for the particular project in question.

2.7.11 Product Substitution

Another possible risk reduction measure is the use of product substitution. This is a common risk reduction method for coating and solvent projects. Products that emit a TAC that may cause a significant health impact would be replaced by a less toxic product or formulation. The new product would continue to be subject to District requirements, which would ensure that air quality and health impacts for the use of the new product would be less than significant. Typically, the products would be commercially available

alternative that have been approved for use by all appropriate agencies. In this case, no adverse environmental impacts are expected from such product substitutions.

2.7.12 Relocating a Source or Stack

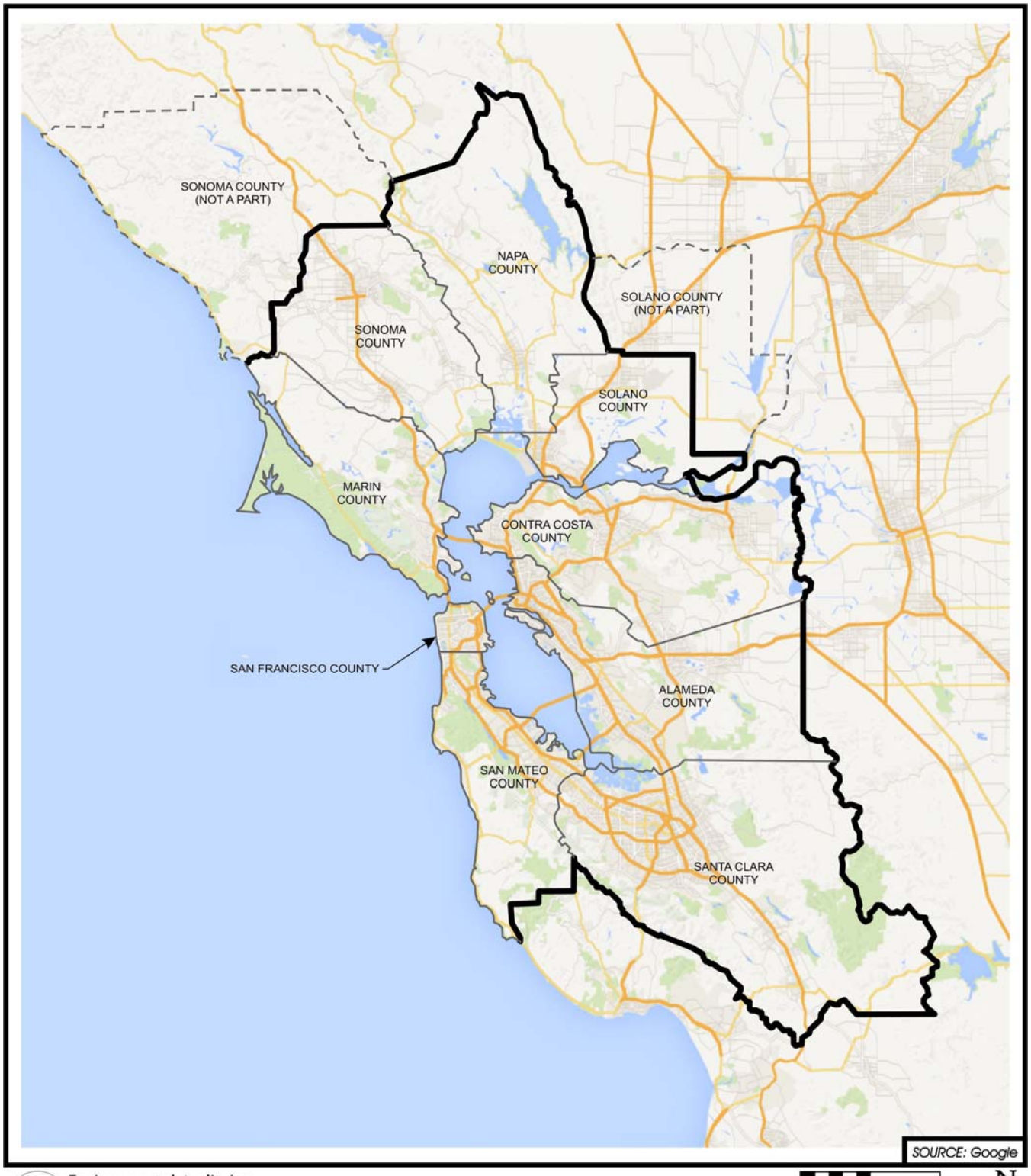
Relocating a source or stack farther away from the highest impacted receptor is a common way to reduce health risk. The District evaluates health risks at the new source/stack location to ensure that risks to all receptors meet acceptable levels. This type of risk reduction measure would not involve any new equipment or processes and would have no adverse environmental impacts.

2.7.13 Stack Modifications

Stack modifications are another common and generally inexpensive risk reduction measure that are often used to reduce risk from back-up generators and soil remediation operations. Changing the direction of a stack (from horizontal to vertical, for example) and increasing the height of a stack to just above the height of nearby buildings will increase the dispersion of the emissions from that stack and will typically result in lower ground level air concentrations at nearby receptors and lower health risks. The District evaluates health risks from a project using the modified stack parameters to ensure that risks to all receptors meet acceptable levels. Stack modifications usually involve extensions of about 2-20 feet and are not expected to have any significant impact on the aesthetics of a facility. No other environmental impacts are expected for stack modifications.

2.8 AFFECTED AREA

BAAQMD proposes to regulate toxic air contaminant emissions, which are typically also criteria pollutant emissions, within its jurisdiction. The equipment affected by the proposed project is located within the jurisdiction of the Bay Area Air Quality Management District (see Figure 2.8-1). The BAAQMD jurisdiction includes all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma counties (approximately 5,600 square miles). The San Francisco Bay Area is characterized by a large, shallow basin surrounded by coastal mountain ranges tapering into sheltered inland valleys. The combined climatic and topographic factors result in increased potential for the accumulation of air pollutants in the inland valleys and reduced potential for buildup of air pollutants along the coast. The Basin is bounded by the Pacific Ocean to the west and includes complex terrain consisting of coastal mountain ranges, inland valleys, and bays.



BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Project No. 2994

Figure 2.8-1

N:\2994\Bay Area Quality Management District.cdr

CHAPTER 3

Environmental Checklist

INTRODUCTION

The environmental checklist provides a standard evaluation tool to identify a project's adverse environmental impacts. This checklist identifies and evaluates potential adverse environmental impacts that may be created by the proposed project.

GENERAL INFORMATION

Project Title:	BAAQMD Regulation 2-5
Lead Agency Name: Lead Agency Address:	Bay Area Air Quality Management District 375 Beale Street, Suite 600 San Francisco, California 94105
Contact Persons:	Sanjeev Kamboj, Carol Allen
Contact Phone Number:	415-749-4634, 415-749-4702
Project Location:	The proposed project applies 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 and southern Sonoma Counties.
Project Sponsor's Name: Project Sponsor's Address:	Bay Area Air Quality Management District 375 Beale Street, Suite 600 San Francisco, California 94105
General Plan Designation:	Facilities subject to the Air Toxics NSR Program are typically designated as industrial, commercial, or institutional.
Zoning:	Facilities subject to the Air Toxics NSR Program are typically zoned industrial, commercial, or institutional.
Description of Project:	See “Background” in Chapter 2.
Surrounding Land Uses and Setting:	See “Affected Area” in Chapter 2.
Other Public Agencies Whose Approval is Required:	None

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The following environmental impact areas have been assessed to determine their potential to be affected by the proposed project. As indicated by the checklist on the following pages, environmental topics marked with an "✓" may be adversely affected by the proposed project. An explanation relative to the determination of impacts can be found following the checklist for each area.

☐ 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	☐ 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.

Signature: Date:

Printed Name: Date:

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis.

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant with Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tier, Program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063 (c)(3)(D). In this case, a brief discussion should identify the following:

   a) Earlier Analysis Used. Identify and state where they are available for review.

   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

   c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This checklist is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:

   a) the significance criteria or threshold, if any, used to evaluate each question; and

   b) the mitigation measure identified, if any, to reduce the impact to less than significance.

SUMMARY OF PROPOSED PROJECT AND POTENTIAL IMPACTS

Chapter 2 provides a summary of the main components of the proposed changes to the Air District's Air Toxics NSR Program. The Air District expects that these program changes may affect an estimated 60 additional projects per year. The types of projects and expected control measures are summarized in Table 2.6-1. The impacts associated with these control measures and the potential secondary adverse environmental impacts are evaluated in this Negative Declaration. CEQA recognizes that regulatory requirements consisting of monitoring and inspections, do not typically generate environmental impacts (see for example, CEQA Guidelines §15309).

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 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. Scenic highways or corridors are located throughout the Bay Area.

The proposed rule amendments focus on TAC emissions from stationary sources. The amendments to Regulation 2-5 will primarily affect stationary sources and pollution control equipment within commercial, industrial and institutional facilities located within the Bay Area. The facilities affected by the proposed rule amendments are generally located in commercial, industrial or institutional areas. 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 limit emissions of TACs from new and modified stationary sources in the Bay Area. The proposed project is not expected to require the construction of any substantial new structures that would impact the views of commercial, industrial, or institutional facilities or areas outside of these existing facility boundaries. The proposed rule amendments may require that enclosure be constructed to minimize certain types of particulate emissions. Any new or modified equipment is expected to be located within the boundaries of commercial, industrial, or industrial facilities; expected to be approximately the same height as the existing equipment; and would be compatible with the existing commercial, industrial, or institutional structures within the facilities. Therefore, new or modified equipment would not be expected to impact scenic resources or vistas or degrade the existing visual character of any site or its surroundings.

The proposed project is not expected to require any new light generating equipment for compliance. The existing commercial, industrial, or institutional facilities that may be impacted by the proposed rule amendment 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 Air District.

Conclusion

Based upon these considerations, no significant adverse aesthetic impacts are expected from adoption of the proposed project.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact

II. AGRICULTURE and FOREST RESOURCES.

In determining whether impacts on agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.--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?	☐	☐	☐	☑
c)	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))?	☐	☐	☐	☑
d)	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, institutional, residential, agricultural, and open space uses. Some of these agricultural lands are under Williamson Act contracts.

The proposed project focuses on reducing TAC emissions stationary sources located within commercial, industrial or institutional facilities within the Bay Area.

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 project is designed to reduce TAC emissions from new and modified stationary sources located within the Bay Area. Any new or equipment modifications would be expected to occur within the confines of existing commercial, industrial, or institutional

facilities. Therefore, the proposed amendments to Regulation 2-5 would not require conversion of existing agricultural land to other uses. 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 BAAQMD are not expected to be affected, because the rule amendment 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 project.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
III. AIR QUALITY				
When available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. 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

Meteorological Conditions

The summer climate of the West Coast is dominated by a semi-permanent high centered over the northeastern Pacific Ocean. Because this high pressure cell is quite persistent, storms rarely affect the California coast during the summer. Thus the conditions that persist along the coast of California during summer are a northwest air flow and negligible precipitation. A thermal low pressure area from the Sonoran-Mojave Desert also causes air to flow onshore over the San Francisco Bay Area much of the summer.

In winter, the Pacific High weakens and shifts southward, upwelling ceases, and winter storms become frequent. Almost all of the Bay Area's annual precipitation takes place in the November through April period. During the winter rainy periods, inversions are weak or nonexistent, winds are often moderate and air pollution potential is very low. During winter periods when the Pacific high becomes dominant, inversions become strong and often are surface based; winds are light and pollution potential is high. These periods are characterized by winds that flow out of the Central Valley into the Bay Area and often include Tule fog.

Topography

The San Francisco Bay Area is characterized by complex terrain consisting of coastal mountain ranges, inland valleys, and bays. Elevations of 1,500 feet are common in the higher terrain of this area. Normal wind flow over the area becomes distorted in the lower elevations, especially when the wind velocity is not strong. This distortion is reduced when stronger winds and unstable air masses move over the areas. The distortion is greatest when low level inversions are present with the surface air, beneath the inversion, flowing independently of the air above the inversion.

Winds

In summer, the northwest winds to the west of the Pacific coastline are drawn into the interior through the Golden Gate and over the lower portions of the San Francisco Peninsula. Immediately to the south of Mount Tamalpais, the northwesterly winds accelerate considerably and come more nearly from the west as they stream through the Golden Gate. This channeling of the flow through the Golden Gate produces a jet that sweeps eastward but widens downstream producing southwest winds at Berkeley and northwest winds at San Jose; a branch curves eastward through the Carquinez Straits and into the Central Valley. Wind speeds may be locally strong in regions where air is channeled through a narrow opening such as the Carquinez Strait, the Golden Gate, or San Bruno Gap.

In winter, the Bay Area experiences periods of storminess and moderate-to-strong winds and periods of stagnation with very light winds. Winter stagnation episodes are characterized by outflow from the Central Valley, nighttime drainage flows in coastal valleys, weak onshore flows in the afternoon and otherwise light and variable winds.

Temperature

In summer, the distribution of temperature near the surface over the Bay Area is determined in large part by the effect of the differential heating between land and water surfaces. This process produces a large-scale gradient between the coast and the Central Valley as well as small-scale local gradients along the shorelines of the ocean and bays. The winter mean temperature high and lows reverse the summer relationship; daytime variations are small while mean minimum nighttime temperatures show large differences and strong gradients. The moderating effect of the ocean influences warmer minimums along the coast and penetrating the Bay. The coldest temperatures are in the sheltered valleys, implying strong radiation inversions and very limited vertical diffusion.

Inversions

A primary factor in air quality is the mixing depth, i.e., the vertical dimension available for dilution of contaminant sources near the ground. Over the Bay Area, the frequent occurrence of temperature inversions limits this mixing depth and consequently limits the availability of air for dilution. A temperature inversion may be described as a layer or layers of warmer air over cooler air.

Precipitation

The San Francisco Bay Area climate is characterized by moderately wet winters and dry summers. Winter rains (December through March) account for about 75 percent of the average annual rainfall; about 90 percent of the annual total rainfall is received in November to April period; and between June and September, normal rainfall is typically less than 0.10 inches. Annual precipitation amounts show greater differences in short distances. Annual totals exceed 40 inches in the mountains and are less than 15 inches in the sheltered valleys.

Pollution Potential

The Bay Area is subject to a combination of physiographic and climatic factors which result in a low potential for pollutant buildups near the coast and a high potential in sheltered inland valleys. In summer, areas with high average maximum temperatures tend to be sheltered inland valleys with abundant sunshine and light winds. Areas with low average maximum temperatures are exposed to the prevailing ocean breeze and experience frequent fog or stratus. Locations with warm summer days have a higher pollution potential than the cooler locations along the coast and bays.

In winter, pollution potential is related to the nighttime minimum temperature. Low minimum temperatures are associated with strong radiation inversions in inland valleys that are protected from the moderating influences of the ocean and bays. Conversely, coastal locations experience higher average nighttime temperatures, weaker inversions, stronger breezes and consequently less air pollution potential.

Air Quality

Criteria Pollutants

It is the responsibility of the BAAQMD to ensure that state and federal ambient air quality standards are achieved and maintained in its geographical jurisdiction. Health-based air quality standards have been established by California and the federal government for the following criteria air pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), PM_{10}, $PM_{2.5}$, sulfur dioxide (SO_2) and lead. These standards were established to protect sensitive receptors with a margin of safety from adverse health impacts due to exposure to air pollution. The California standards are more stringent than the federal standards. California has also established standards for sulfate, visibility, 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. The BAAQMD monitored levels of various criteria pollutants at 25 monitoring stations in 2014.

The 2014 air quality data from the BAAQMD monitoring stations are presented in Table 3-2. The data indicate that the air quality at all monitoring stations were below the state standard and federal ambient air quality standards for CO, NO_2, and SO_2. The federal 8-hour ozone standard was exceeded on five days in the Air District in 2014, while the state 8-hour standard was exceeded on 10 days. The State 1-hour ozone standard was exceeded on three days in 2014 in the Air District. The ozone standards are most frequently exceeded in the Eastern District (Livermore) (Seven days for the state 8-hour standard and four days for the federal 8-hour standard), followed by San Ramon, (four days for the state 8-hour standard and three days for the federal 8-hour standard) and San Martin (three days for the state 8-hour standard and five days for the federal 8-hour standard). The State 24-hour PM10 standard was exceeded on two days in 2014 in the Air District. The PM10 standards were exceeded in Bethel Island and San Jose for one day. The federal 24-hour standard was exceeded on 3 days in 2014 in the Air District. The PM2.5 standards are most frequently exceeded in the Coast/Central Bay District (Oakland, Oakland-West, and San Pablo one day each) (see Table 3-1).

Air quality conditions in the San Francisco Bay Area have improved since the Air District was created in 1955. Ambient concentrations of air pollutants and the number of days on which the region exceeds air quality standards have fallen dramatically (see Table 3-3). The Air District is in attainment of the State and federal ambient air quality standards for CO, NOx, and SO_2. The Air District is not considered to be in attainment with the federal ozone and PM2.5 24-hour standards and State PM10 and PM2.5 standards. This district's attainment status for federal standard for PM10 is currently unclassifiable. The Air District's attainment status for federal annual PM2.5 is currently U/A, which refers to meeting the standard or expected to be meeting the standard despite a lack of monitoring data.

TABLE 3-1

Federal and State Ambient Air Quality Standards

	STATE STANDARD	FEDERAL PRIMARY STANDARD	ATTAINMENT STATUS (1)		MOST RELEVANT EFFECTS
AIR POLLUTANT	CONCENTRATION/ AVERAGING TIME	CONCENTRATION/ AVERAGING TIME	STATE	FEDERAL	
Ozone	0.09 ppm, 1-hr. avg. > 0.070 ppm, 8-hr	0.070 ppm, 8-hr avg.>	N N	N	(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 A	A A	(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.> 0.10 ppm, 1-hr avg.>	A NR	U A	(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. >	0.14 ppm, 24-hr. avg.> 0.075 ppm, 1-hr avg.>	A A	A A	(a) 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 µg/m3, annual arithmetic mean > 50 µg/m3, 24-hr average>	150 µg/m3, 24-hr avg.>	N N	U	(a) Increase in coughing, wheezing, and shortness of breath. (b) Aggravated asthma. (c) Lung damage, including lifelong respiratory disease. (d) Potential for premature death in individuals with existing heart or lung disease.
Suspended Particulate Matter ($PM_{2.5}$)	12 µg/m3, annual arithmetic mean>	12 µg/m3, annual arithmetic mean> 35 µg/m3, 24-hour average>	N	U/A (2) N	Decreased lung function from exposure and exacerbation of symptoms in sensitive groups, including those with respiratory disease, elderly, and children. May lead to permanent lung damage or premature death if exposed to elevated concentrations for long periods of time.
Sulfates	25 µg/m3, 24-hr avg. >=		A		(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 µg/m3, 30-day avg. >=	1.5 µg/m3, calendar quarter> 0.15 µg/m3, 3-mo. avg. >	A	A NR	(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 PST)		U	NR	Nephelometry and AISI Tape Sampler; instrumental measurement on days when relative humidity is less than 70 percent

1. Attainment statuses: A=in attainment N=Not in attainment U=Unclassifiable NR=Not Reported
2. The EPA U/A designation refers to meeting the standard or expected to be meeting the standard despite a lack of monitoring data.

TABLE 3-2
Bay Area Air Pollution Summary - 2014

MONITORING STATIONS	OZONE						CARBON MONOXIDE			NITROGEN DIOXIDE			SULFUR DIOXIDE			PM 10				PM 2.5				
	Max 1-hr	Cal 1-hr Days	Max 8-hr	Nat 8-Hr Days	Cal 8-hr Days	3-Yr Avg	Max 1-hr	Max 8-hr	Nat/ Cal Days	Max 1-Hr	Ann Avg	Nat/ Cal 1-hr	Max 1-hr	Max 24-hr	Nat/ Cal 1-hr	Ann Avg	Max 24-hr	Nat Days	Cal Days	Max 24-hr	Nat 24-hr Days	3-Yr Avg	Ann Avg	3-Yr Avg
North Counties	(ppb)						(ppm)			(ppb)			(ppb)			($\mu g/m^3$)				($\mu g/m^3$)				
Napa*	74	0	66	0	0	58	2.2	1.4	0	46	8	0	-	-	-	15.8	39	0	0	29.9	0	*	12.0	*
San Rafael	88	0	68	0	0	56	1.9	1.1	0	62	11	0	-	-	-	14.1	41	0	0	38.1	1	22	10.8	9.8
Sebastopol*	67	0	61	0	0	*	1.4	0.9	0	44	4	0	-	-	-	-	-	-	-	26.2	0	*	7.7	*
Vallejo	77	0	68	0	0	58	2.5	2.1	0	50	8	0	23.9	2.4	0	-	-	-	-	39.6	1	26	9.9	9.6
Coast/Central Bay																								
Laney College Fwy*	-	-	-	-	-	-	2.0	1.1	0	65	17	0	-	-	-	-	-	-	-	26.0	0	*	8.4	*
Oakland	83	0	68	0	0	47	2.8	1.7	0	82	12	0	-	-	-	-	-	-	-	37.6	1	24	8.5	9.4
Oakland-West*	72	0	59	0	0	47	3.0	2.6	0	56	14	0	16.5	3.3	0	-	-	-	-	38.8	1	*	9.5	*
Richmond	-	-	-	-	-	-	-	-	-	-	-	-	19.2	5.0	0	-	-	-	-	-	-	-	-	-
San Francisco	79	0	69	0	0	47	1.6	1.2	0	84	12	0	-	-	-	17.0	36	0	0	33.2	0	23	7.7	8.6
San Pablo*	75	0	60	0	0	52	1.8	1.0	0	52	9	0	15.3	5.8	0	16.4	46	0	0	38.2	1	*	10.5	*
Eastern District																								
Bethel Island	92	0	71	0	1	67	0.9	0.7	0	33	5	0	10.5	3.4	0	16.7	61	0	1	-	-	-	-	-
Concord	95	1	80	2	2	64	1.4	1.1	0	48	8	0	29.1	4.5	0	14.2	43	0	0	30.6	0	22	6.6	7.0
Crockett	-	-	-	-	-	-	-	-	-	-	-	-	25.7	5.4	0	-	-	-	-	-	-	-	-	-
Fairfield	81	0	70	0	0	63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Livermore	93	0	80	4	7	72	-	-	-	49	10	0	-	-	-	-	-	-	-	42.9	1	27	7.6	7.5
Martinez	-	-	-	-	-	-	-	-	-	-	-	-	21.2	4.6	0	-	-	-	-	-	-	-	-	-
Patterson Pass	-	-	-	-	-	-	-	-	-	21	3	0	-	-	-	-	-	-	-	-	-	-	-	-
San Ramon	86	0	77	3	4	67	-	-	-	37	6	0	-	-	-	-	-	-	-	-	-	-	-	-
South Central Bay																								
Hayward	96	1	75	0	4	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Redwood City	86	0	65	0	0	56	3.2	1.6	0	55	11	0	-	-	-	-	-	-	-	35.0	0	23	7.1	8.8
Santa Clara Valley																								
Gilroy	84	0	74	0	4	66	-	-	-	-	-	-	-	-	-	-	-	-	-	25.7	0	18	6.8	7.6
Los Gatos	90	0	77	1	3	64	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
San Jose	89	0	66	0	0	60	2.4	1.9	0	58	13	0	3.0	0.9	0	19.9	55	0	1	60.4	2	30	8.4	10.0
San Jose Freeway*	-	-	-	-	-	-	2.2	1.9	0	65	*	0	-	-	-	-	-	-	-	24.3	0	*	*	*
San Martin	97	1	78	3	5	70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Days over Standard		**3**		**5**	**10**				**0**			**0**			**0**			**0**	**2**		**3**			

* PM2.5 monitoring using the federally accepted method began at Napa, Oakland West, and San Pablo in December 2012. Therefore, 3-year average PM2.5 statistics are not available. Air monitoring at Sebastopol began in January 2014. Therefore, 3-year average statistics for ozone and PM2.5 are not available. In addition, the Sebastopol site replaced the Santa Rosa site which closed on December 13, 2013. Therefore, statistics for Santa Rosa are not provided in the 2014 summary. Near-road air monitoring at Laney College Freeway began in February 2014. Therefore, 3-year average PM2.5 statistics are not available. Near-road air monitoring at San Jose Freeway began in September 2014. Therefore, annual average NO_2 and 3-year average PM 2.5 statistics are not available.

(ppb) = parts per billion (ppm) = parts per million, ($\mu g/m^3$) = micrograms per cubic meter. (ppb) = parts per billion (ppm) = parts per million, ($\mu g/m^3$) = micrograms per cubic meter.

TABLE 3-3

Bay Area Air Quality Summary
Days over Standards

YEAR	OZONE			CARBON MONOXIDE				NOx		SULFUR DIOXIDE		PM_{10}		$PM_{2.5}$
	8-Hr	1-Hr	8-Hr	1-Hr		8-Hr		1-Hr		1-Hr	24-Hr	24-Hr		24-Hr
	Nat	Cal	Cal	Nat	Cal	Nat	Cal	Nat	Cal	Nat	Cal	Nat	Cal	Nat
2005	5	9	9	0	0	0	0	0	0	0	0	0	6	21
2006	17	18	22	0	0	0	0	1	0	0	0	0	15	10
2007	2	4	9	0	0	0	0	0	0	0	0	0	4	14
2008	12	9	20	0	0	0	0	0	0	2	0	0	5	12
2009	8	11	13	0	0	0	0	0	0	0	0	0	1	11
2010	9	8	00	0	0	0	0	0	0	0	0	0	2	6
2011	4	5	10	0	0	0	0	0	0	0	0	0	3	8
2012	4	3	8	0	0	0	0	1	0	0	0	0	2	3
2013	3	3	3	0	0	0	0	0	0	0	0	0	6	13
2014	5	3	10	0	0	0	0	0	0	0	0	0	2	3

Toxic Air Pollutants

The BAAQMD maintains a database that contains information concerning emissions of TACs from permitted stationary sources in the Bay Area. This inventory, and a similar inventory for mobile and area sources compiled by CARB, is used to plan strategies to reduce public exposure to TACs. The detailed concentrations of various TACs are reported in the BAAQMD, Toxic Air Contaminant Control Program, 2010 Annual Report (BAAQMD, 2010) and summarized in Table 3-4. The 2010 TAC data show decreasing concentrations of many TACs in the Bay Area. The most dramatic emission reductions in recent years have been for certain chlorinated compounds that are used as solvents including methyl chloroform, dichloromethane, and tetrachloroethylene. Table 3-4 contains a summary of ambient air toxics listed by compound.

TABLE 3-4

Summary of BAAQMD Ambient Air Toxics Monitoring Data [1]

Pollutant	Units	Average MDL [1]	% less than MDL	Max Sample Value	Min Sample Value	Average Sample Value [2] [3]
1,3-Butadiene	ppb	5.73E-02	87%	3.30E-01	0.00E+00	3.84E-02
Acetaldehyde	ppb	5.86E-02	0%	3.10E+00	1.97E-01	6.84E-01
Acetone	ppb	1.27E-01	1%	3.50E+01	0.00E+00	2.25E+00
Acetonitrile	ppb	2.55E-01	26%	2.34E+00	0.00E+00	5.09E-01
Antimony	µg/m^3	1.50E-03	78%	5.02E-02	00.0E+00	2.36E-03
Arsenic	µg/m^3	7.81E-04	92%	2.92E-03	0.00E+00	4.32E-04
Benzene	ppb	2.41E-02	1%	1.26E+00	0.00E+00	2.17E-01
Bromomethane	ppb	3.00E-02	95%	7.30E-02	1.50E-02	1.65E-02
Cadmium	µg/m^3	7.81E-04	85%	1.92E-02	0.00E+00	8.67E-04
Carbon Tetrachloride	ppb	1.14E-02	0%	1.70E-01	7.00E-02	1.03E-01
Chlorine	µg/m^3	0.00E+00	5%	3.64E+00	0.00E+00	3.43E-01
Chloroform	ppb	1.14E-02	46%	8.00E-02	0.00E+00	1.95E-02
Chromium	µg/m^3	1.02E-03	25%	1.00E-01	0.00E+00	2.48E-03
Cis-1,3-Dichloropropylene	ppb	1.00E-01	100%	5.00E-02	5.00E-02	5.00E-02
Cobalt	µg/m^3	7.81E-04	76%	3.26E-03	0.00E+00	5.25E-04
Copper	µg/m^3	4.00E-04	31%	4.90E-02	0.00E+00	5.74E-03
Dichloromethane	ppb	1.00E-01	37%	4.40E+00	0.00E+00	1.80E-01
Ethyl Alcohol	ppb	3.00E-01	0%	2.27E+01	4.00E+00	1.16E+01
Ethylbenzene	ppb	6.18E-02	53%	1.20E+00	0.00E+00	8.25E-02
Ethylene Dibromide	ppb	1.00E-02	100%	0.00E+00	0.00E+00	5.00E-03
Ethylene Dichloride	ppb	1.00E-01	100%	0.00E+00	0.00E+00	5.00E-02
Formaldehyde	ppb	6.76E-02	0%	6.30E+00	2.00E-01	1.46E+00
Lead	µg/m^3	7.81E-04	40%	2.40E-01	0.00E+00	4.85E-03
M/P Xylene	ppb	6.18E-02	9%	5.27E+00	0.00E+00	3.18E-01
Magnesium	µg/m^3	0.00E+00	36%	4.88E-01	0.00E+00	5.54E-02
Manganese	µg/m^3	7.81E-04	25%	2.00E-01	0.00E+00	7.06E-03
Mercury	µg/m^3	0.00E+00	98%	1.70E-03	0.00E+00	2.24E-05
Methyl Chloroform	ppb	2.73E-02	88%	4.30E+00	0.00E+00	3.22E-02
Methyl Ethyl Ketone	ppb	1.00E-01	28%	1.78E+00	0.00E+00	1.89E-01
Nickel	µg/m^3	4.50E-03	57%	6.00E-02	0.00E+00	3.39E-03
O-Xylene	ppb	4.82E-02	30%	5.12E+00	0.00E+00	1.21E-01

TABLE 3-4 (Continued)

Pollutant	Units	Average MDL [2]	% less than MDL	Max Sample Value	Min Sample Value	Average Sample Value [1] [3]
PAHs [4]	ng/m^3					1.90E-01
Selenium	µg/m^3	7.81E-04	76%	8.60E-03	0.00E+00	8.04E-04
Styrene	ppb	1.00E-01	96%	1.20E-01	5.00E-02	5.22E-02
Sulfur	µg/m^3	0.00E+00	0%	1.73E+00	3.74E-02	3.56E-01
Tetrachloroethylene	ppb	5.68E-03	21%	2.80E-01	0.00E+00	1.88E-02
Toluene	ppb	6.18E-02	2%	4.33E+00	0.00E+00	6.22E-01
Trans-1,3-Dichloropropylene	ppb	1.00E-01	100%	5.00E-02	5.00E-02	5.00E-02
Trichloroethylene	ppb	1.14E-02	84%	5.20E-01	0.00E+00	1.42E-02
Trichlorofluoromethane	ppb	1.00E-02	0%	6.90E-01	1.00E-02	1.96E-01
Vanadium	µg/m^3	4.00E-04	72%	5.10E-03	0.00E+00	5.34E-04
Vinyl Chloride	ppb	1.00E-01	100%	0.00E+00	0.00E+00	5.00E-02
Zinc	ng/m^3	1.80E-03	0%	1.90E-01	0.00E+00	1.38E-02

Source: BAAQMD 2010 Toxic Air Contaminant Monitoring Data. Data are a summary of data from all monitoring stations within the Air District.

1. If an individual sample value was less than the MDL (Minimum Detection Limit), then 1/2 MDL was used to determine the Average Sample Value.
2. Some samples (especially metals) have individual MDLs for each sample. An average of these MDLs was used to determine 1/2 MDL for the Average Sample Value.
3. Data for these two substances was collected but not presented because the sampling procedure is not sanctioned for use by EPA or ARB.
4. For compounds with 100% of sample values less than MDL, please use caution using the assumed Average Sample Values.

Regulatory Background

Criteria Pollutants

At the federal level, the Clean Air Act (CAA) Amendments of 1990 give the U.S. EPA additional authority to require states to reduce emissions of ozone precursors and particulate matter in non-attainment areas. The amendments set attainment deadlines based on the severity of problems. At the state level, CARB has traditionally established state ambient air quality standards, maintained oversight authority in air quality planning, developed programs for reducing emissions from motor vehicles, developed air emission inventories, collected air quality and meteorological data, and approved state implementation plans. At a local level, California's air districts, including the BAAQMD, are responsible for overseeing stationary source emissions, approving permits, maintaining emission inventories, maintaining air quality stations, overseeing agricultural burning permits, and reviewing air quality-related sections of environmental documents required by CEQA.

The BAAQMD is governed by a 24-member Board of Directors composed of publicly-elected officials apportioned according to the population of the represented counties. The Board has the authority to develop and enforce regulations for the control of air pollution within its jurisdiction. The BAAQMD is responsible for implementing emissions standards and other requirements of federal and state laws. It is also responsible for developing air quality planning documents required by both federal and state laws.

Toxic Air Contaminants

TACs are regulated in the Air District through federal, state, and local programs. At the federal level, TACs are regulated primarily under the authority of the CAA. Title III of the 1990 CAA amendments required U.S. EPA to promulgate National Emission Standards for Hazardous Air Pollutants (NESHAPs) for certain categories of sources identified by U.S. EPA as emitting one or more of the 189 listed HAPs. Emission standards for major sources must require the maximum achievable control technology (MACT). MACT is defined as the maximum degree of emission reduction achievable considering cost and non-air quality health and environmental impacts and energy requirements. NESHAPs for various hazardous air pollutants have been promulgated since 1992.

Many of the sources of TACs that have been identified under the CAA are also subject to the California TAC regulatory programs. CARB developed three regulatory programs for the control of TACs. Each of the programs is discussed in the following subsections.

Control of TACs Under the TAC Identification and Control Program: California's TAC identification and control program, adopted in 1983 as Assembly Bill 1807 (AB 1807) (California Health and Safety Code §39662), is a two-step program in which substances are identified as TACs, and airborne toxic control measures (ATCMs) are adopted to control emissions from specific sources. Since adoption of the program, CARB has identified over 300 TACs. All 189 federal HAPs are CARB TACs.

Control of TACs Under the Air Toxics "Hot Spots" Act: The Air Toxics Hot Spot Information and Assessment Act of 1987 (AB 2588) (California Health and Safety Code §39656) establishes a state-wide program to inventory and assess the risks from facilities that emit TACs and to notify the public about significant health risks associated with those emissions. Inventory reports must be updated every four years under current state law. The BAAQMD uses a maximum individual cancer risk of 10 in one million, or an ambient concentration above a non-cancer reference exposure level, as the threshold for notification.

Senate Bill (SB) 1731, enacted in 1992 (California Health and Safety Code §44390 et seq.), amended AB 2588 to include a requirement for facilities with significant risks to prepare and implement a risk reduction plan which will reduce the risk below a defined significant risk level within specified time limits. At a minimum, such facilities must, as quickly as feasible, reduce cancer risk levels that exceed 100 per one million. The BAAQMD adopted risk reduction requirements for perchloroethylene dry cleaners to fulfill the requirements of SB 1731.

Targeted Control of TACs Under the Community Air Risk Evaluation Program: In 2004, BAAQMD established the Community Air Risk Evaluation (CARE) program to identify locations with high emissions of toxic air contaminants (TAC) and high exposures of sensitive populations to TAC and to use this information to help establish policies to guide mitigation strategies that obtain the greatest health benefit from TAC emission reductions. For example, BAAQMD will use information derived 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

Construction Emissions: Regarding construction emissions, the Air District's 1999 Thresholds of Significance did not identify specific significance thresholds for construction emissions. Rather the analysis required that certain control measures be implemented and, if implemented, the air pollutant impacts would be less than significant. The construction emissions identified in the 2011 CEQA Guidelines would be more conservative as they provide a specific threshold number above which impacts would be considered significant (see Table 3-5). Therefore, the 2011 CEQA Guidelines will be used in the current air quality analysis for construction emissions.

TABLE 3-5

Thresholds of Significance for Construction-Related Criteria Air Pollutants and Precursors

Pollutant/Precursor	Daily Average Emissions (pounds/day)
ROG	54
NOx	54
PM10	82*
$PM_{2.5}$	54*
PM10/ $PM_{2.5}$ Fugitive Dust	Best Management Practices

* Applies to construction exhaust emissions only.
Source: BAAQMD, 2011

Operational Emissions: The Air District's CEQA Guidelines have been developed to assist local jurisdictions and lead agencies in complying with the requirements of CEQA regarding potentially adverse impacts to air quality. The Air District first developed CEQA guidelines, which included significance thresholds for use by lead agencies, in 1999 (BAAQMD, 1999). On June 2, 2010, the Bay Area Air Quality Management District's Board of Directors unanimously adopted thresholds of significance to assist in the review of projects under the California Environmental Quality Act. These Thresholds are designed to establish the level at which the Air District believed air pollution emissions would cause significant environmental impacts under CEQA and were posted on the Air District's website and included in the Air District's updated CEQA Guidelines (BAAQMD, 2011).

On March 5, 2012 the Alameda County Superior Court issued a judgment finding that the Air District had failed to comply with CEQA when it adopted the Thresholds. The court did not determine whether the Thresholds were valid on the merits, but found that the adoption of the Thresholds was a project under CEQA. The court issued a writ of mandate ordering the Air District to set aside the Thresholds and cease dissemination of them until the Air District had complied with CEQA. The Air District has appealed the Alameda County Superior Court's decision. The Court of Appeal of the State of California, First Appellate District, reversed the trial court's decision. The Court of Appeal's decision was appealed to the California Supreme Court, which granted limited review, and the Supreme Court send the case back to the lower courts for further review.

In view of the trial court's order which remains in place pending final resolution of the case, the Air District is no longer recommending that the Thresholds be used as a generally applicable measure of a project's significant air quality impacts. Lead agencies will need to determine appropriate air quality thresholds of significance based on substantial evidence in the record. Although lead agencies may rely on the Air District's updated CEQA Guidelines for assistance in calculating air pollution emissions, obtaining information regarding the health impacts of air pollutants, and identifying potential mitigation measures, the Air District has been ordered to set aside the Thresholds and is no longer recommending that these Thresholds be used as a general measure of project's significant air quality impacts. Lead agencies may continue to rely on the Air District's 1999 Thresholds of Significance and they may continue to make determinations regarding the significance of an individual project's air quality impacts based on the substantial evidence in the record for that project.

In light of the court's order, the significance thresholds could be the significance thresholds developed in 1999. These "original" significance thresholds limited emissions for project operations to 15 tons per year or 80 pounds per day of reactive organic gases (ROG), NOx and PM_{10}. Alternatively, the revised 2010 CEQA Guidelines could also be used. The revised CEQA Guidelines (BAAQMD, 2010) established project-specific thresholds (e.g., 10 tons per year of ROG, NOx, and $PM_{2.5}$). Because the 2010 CEQA thresholds are more conservative than the 1999 thresholds, the 2010 CEQA thresholds will be used herein. Therefore, in order to provide a conservative air quality analysis, the thresholds recommended in the revised 2010 CEQA Guidelines (BAAQMD, 2010) will be used in the current air quality impacts analysis.

To determine whether or not air quality impacts from the proposed project may be significant, impacts will be evaluated and compared to the criteria in Table 3-6.

TABLE 3-6

BAAQMD Air Quality Significance Thresholds

Units	VOC	CO	NOx	SOx	PM10	PM2.5
Tons/Year	10	NE (1)	10	NE (1)	10	10
Pounds/Day	54	NE	54	NE	82	54

(1) Significance threshold has not been established.

Discussion of Impacts

III. a. The proposed project is not expected to conflict with or obstruct implementation of the applicable air quality plan. The proposed project is designed to limit emissions of TACs from new and modified stationary sources located throughout the Bay Area. The 2010 Clean Air Plan is the most recently adopted air quality plan for the Bay Area. The proposed project would contribute directly to meeting the objectives of the 2010 Clean Air Plan by reducing particulate emissions and contributing towards attaining and maintaining the state and federal ambient air quality standards for PM2.5.

Because the rule amendments are expected to result in TACs emissions reductions, the proposed rule is in compliance with the local air quality plan and is expected to provide beneficial impacts to air quality. Furthermore, the proposed project would contribute directly to meeting the objectives of the 2010 Clean Air Plan by reducing particulate emissions and contributing towards attaining and maintaining the state and federal ambient air quality standards for PM2.5. Therefore, the proposed rule amendments will not conflict with or obstruct with an applicable air quality plan.

III. b and d. Implementation of the proposed project is expected to reduce emissions of TACs due to the revision of OEHHA guidelines. Facilities are expected to implement control measures to meet thresholds established by the revised guidelines. The BAAQMD expects that of the estimated 100 additional NSR projects that will require an HRA, approximately 60 will need to implement control measures. Table 2.6-1 summarizes the expected method affected facilities will implement in order to comply with the 2015 OEHHA guideline revisions.

Construction Air Quality Impacts

The proposed rule amendment could result in the construction of additional air pollution control equipment at affected facilities. Construction impacts were considered for the control measures identified in Table 2-6.1. Control measures that do not require equipment, such as reducing operating time, will not produce emissions as a result of construction. The remaining control measures were analyzed and the results are presented below in Table 3-7. The BAAQMD expects that three facilities per year are expected to meet reductions by implementing either a baghouse or an enclosure. Since the emissions associated with construction of an enclosure are greater than a bag house, the impact analysis assumes three enclosures are constructed in lieu of bag houses, to provide a conservative analysis. Similarly, data for carbon absorbers is not presented as thermal/catalytic oxidizers require more construction equipment and have a greater construction emissions impact. Detailed emissions calculations are provided in Appendix A.

TABLE 3-7

Estimated Construction Emissions Impacts
(pounds/day)

Control Measure	VOC	CO	NOx	SOx	PM10	PM2.5
DPF	0.33	2.39	1.95	0.00	0.20	0.17
Enclosures	1.56	14.08	17.61	0.04	1.63	1.22
Oxidizers	0.03	0.35	0.45	0.00	0.15	0.05
Total	**1.92**	**16.81**	**20.01**	**0.05**	**1.98**	**1.45**
BAAQMD CEQA Thresholds	**54**	**NE (1)**	**54**	**NE (1)**	**82**	**54**
Significant?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

1. NE - Thresholds are not established

As summarized in Table 3-7, construction of air pollution control equipment that is expected to be installed as a result of the proposed project is not expected to exceed construction significance thresholds. Detailed emissions calculations are provided in Appendix A. The proposed project is not expected to have a significant impact on air quality for construction emissions.

Operational Air Quality Impacts

The proposed rule amendment could result in the construction of additional air pollution control equipment at affected facilities. The operation of additional air pollution control equipment can produce some secondary air quality impacts. Operational impacts were considered for the control measures identified in Table 2-6.1. Control measures that do not change the type of equipment used, such as reducing operating time, will not produce additional operational emissions and are not analyzed. Diesel particulate filters can be regenerated passively and are not expected to produce operational impacts, instead, would reduce the PM emissions in the Air Basin. Oxidation catalyst regeneration, enclosures, and baghouses are also not expected to require regular maintenance; therefore, operational impacts will be minimal. Thermal/catalytic oxidizers were based on 2 million British thermal unit (MM BTU) natural gas burners. The operational emissions associated with the proposed project are summarized in Table 3-8. As shown in Table 3-8, operational impacts associated with proposed project is expected to be below the BAAQMD thresholds, therefore, the proposed project is not expected to have a significant impact on air quality for operational emissions. Detailed emissions calculations are provided in Appendix A.

TABLE 3-8

Estimated Operational Emissions Impacts
(tons/year)

Equipment	VOC	CO	NOx	SOx	PM10	PM2.5
Diesel Particulate Filters	0.00	0.00	0.00	0.00	0.00	0.00
Enclosures	0.00	0.00	0.00	0.00	0.00	0.00
Oxidizers	0.09	3.89	0.48	0.01	0.09	0.09
Total	**0.09**	**3.89**	**0.48**	**0.01**	**0.09**	**0.09**
BAAQMD CEQA Thresholds	**10**	**NE**	**10**	**NE**	**15**	**10**
Significant?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

III. c. CEQA Guidelines indicate that cumulative impacts of a project shall be discussed when the project's incremental effect is cumulatively considerable, as defined in CEQA Guidelines §15065(c). While the proposed project may initially create an increase in emissions for the construction or installation of control equipment, the project as a whole aims to reduce emissions of PM, TACs, and other harmful pollutants. Therefore, the cumulative air quality impacts of the proposed project are expected to be beneficial and not adversely significant.

III. e. The proposed project is not expected to generate any new odors or contribute to any existing odors. The reductions in TACs and other emissions that will arise directly as a result of the proposed project may even cause a reduction in odor. Therefore, the proposed project is not expected to result in an increase in the emissions that could generate odors. The BAAQMD will continue to enforce odor nuisance complaints through BAAQMD Regulation 7, Odorous Substances.

Conclusion

Based upon these considerations, no significant adverse impacts to agricultural and forest resources are expected from the adoption of the proposed project. The proposed project is expected to provide beneficial long-term air quality impacts through the reduction of TACs and related health benefits associated with reduced exposure to these compounds.

		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 Game 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 Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☑
c)	Have a substantial adverse effect on federally protected wetlands as defined by Section 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, institutional, residential, agricultural, and open space uses. A wide variety of biological resources are located within the Bay Area.

The proposed project focuses on reducing TAC emissions from new and modified stationary sources within the Bay Area. The proposed project will primarily affect land located in commercial, industrial, or institutional facilities which have largely been graded for commercial, industrial, or institutional development. Native vegetation, other than landscape vegetation, has generally been removed to accommodate such development. Any new development would fall under compliance with the City or County General Plans, although no new development is anticipated as a result of amendments to Regulation 2-5.

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

Impacts on biological resources will be considered significant if any of the following criteria apply:

- 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–f. The proposed project is designed to limit emissions of TAC from commercial, industrial, or institutional facilities in the Bay Area. The proposed project is not expected to require any new substantial new development. New or modified control equipment may be required, which would be located within the confines of the existing commercial, industrial, or institutional facilities. These sites have been graded for existing operations and no native vegetation is located within the operating portions existing facilities. Therefore, the proposed amendments to Regulation 2-5 are not expected to result in impacts to biological resources and would not directly or indirectly affect riparian habitat, federally protected wetlands, or migratory corridors.

The proposed project would not conflict with local policies or ordinances protecting biological resources, nor would it conflict with local, regional, or state conservation plans as the proposed project only applies to equipment in existing developed facilities or to new equipment to be permitted under the requirements of the amended Regulation 2-5. The proposed project will also not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or any other relevant habitat conservation plan as no development outside of the existing commercial, industrial, or institutional facilities is expected to be required as a result of the proposed project.

Conclusion

Based upon these considerations, no significant adverse impacts to biological resources are expected from the adoption of the proposed project.

		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 or 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. Cultural resources would not be expected to be impacted by the amendments to Regulation 2-5.

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

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–d. The proposed project is designed to limit emissions of TACs from new and modified stationary sources in the Bay Area. The proposed project is not expected to require substantial new development. Any new air pollution control equipment would be expected to occur within existing commercial, industrial or institutional facilities. These sites have been graded for existing uses. Therefore, the proposed project is not expected to require the use of heavy construction equipment or require grading activities that could impact cultural or historic resources. Physical changes are expected to be limited to existing developed areas and no major construction activities are expected to be required. 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 project.

	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 known 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 onsite or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☑	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), 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 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 affected facilities by the proposed amendments to Regulation 2-5 are primarily located in areas zoned as commercial, industrial, institutional.

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.

While there are existing geological hazards in the San Francisco Bay Region, there is extensive development and the area has been urbanized. Development within geologically active areas is protected by developing structures in compliance with the California Building Codes.

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 review procedures that will reduce losses from ground failure during future earthquakes.

Significance Criteria

Impacts on the geological environment will be considered significant if any of the following criteria apply:

- 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 project is designed to limit emissions of TACs from new and modified stationary sources located throughout the Bay Area. The proposed project is not expected to require any new development. Modifications are expected to be limited to existing commercial, industrial, or institutional facilities. Physical changes would be limited to new air pollution control equipment, including enclosures and no major construction activities are expected to be required as a result of Regulation 2-5.

Any new or modified equipment or buildings in the area must be designed to comply with the California Building Code requirements since the Bay Area is located in a seismically active area. The local cities or counties are responsible for assuring that any new or modified structures comply with the California Building Code as part of the issuance of the building permits and can conduct inspections to ensure compliance. 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 bases 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.

Any new or modified equipment or buildings at the affected facilities would be required to obtain building permits, as applicable, for all new or modified structures. The affected commercial, industrial, or institutional facilities must receive approval of all building plans and building permits to assure compliance with the latest California Building Code prior to commencing construction activities. The issuance of building permits from the local agency will assure compliance with the California Building Code requirements which include requirements for building within seismic hazard zones. No significant impacts from seismic hazards are expected since any new or modified equipment would be required to comply with the California Building Codes.

VI. b. Since add-on controls will likely be installed at existing developed facilities, during construction of the proposed project, a slight possibility exists for temporary erosion resulting from grading activities, if required (controls included as part of new facilities are not expected to cause erosion or excavating beyond that otherwise resulting from constructing the new facility). These activities are expected to be minor since the existing facilities are generally flat and have previously been graded and paved. Further, wind erosion is not expected to occur to any appreciable extent, because operators at dust generating sites would be required to comply with the best available control measure requirements for fugitive dust emissions. Operators must control fugitive dust through a number of soil stabilizing measures such as watering the site, using chemical soil stabilizers, revegetating inactive sites, etc. The proposed project involves the installation or modification of add-on control equipment at existing facilities, so that grading could be required to provide stable foundations. Potential air quality impacts related to grading are addressed as part of construction air quality impacts. No unstable earth conditions or changes in geologic substructures are expected to result from implementing the proposed project. Accordingly, this impact is not considered significant.

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 Regulation 2-5 would affect commercial, industrial, or institutional facilities already connected to appropriate wastewater facilities. Based on these considerations, septic tanks or other alternative wastewater disposal systems are not expected to be impacted by Regulation 2-5.

Conclusion

Based upon these considerations, no significant adverse impacts to geology and soils are expected from the adoption of the proposed project.

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. GREENHOUSE GAS EMISSIONS.					
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 warming, a related concept, is the observed increase in the average temperature of the earth's surface and atmosphere. One identified cause of global warming is an increase of greenhouse gases (GHGs) in the atmosphere. The six major GHGs identified by the Kyoto Protocol are (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), haloalkanes (HFCs), and perfluorocarbons (PFCs). The GHGs absorb longwave radiant energy reflected by the earth, which warms the atmosphere. GHGs also radiate longwave radiation both upward to space and back down toward the surface of the earth. The downward part of this longwave radiation absorbed by the atmosphere is known as the "greenhouse effect." Some studies indicate that the potential effects of global climate change may include rising surface temperatures, loss in snow pack, sea level rise, more extreme heat days per year, and more drought years.

Events and activities, such as the industrial revolution and the increased combustion of fossil fuels (e.g., gasoline, diesel, coal, etc.), may have contributed to the increase in atmospheric levels of GHGs. Approximately 80 percent of GHG emissions in California are from fossil fuel combustion and over 70 percent of GHG emissions are carbon dioxide emissions. The emission inventory in Table 3-9 focuses on GHG emissions due to human activities only, and compiles estimated emissions from industrial, commercial, transportation, domestic, forestry, and agriculture activities in the San Francisco Bay Area region of California. The GHG emission inventory in Table 3-9 reports direct emissions generated from sources within the Bay Area and estimates future GHG emissions.

TABLE 3-9

Bay Area Greenhouse Gas Emission Inventory Projections (million metric tons CO_2-Equivalent)

SOURCE CATEGORY Year	2005	2009	2012	2015	2020
INDUSTRIAL/COMMERCIAL					
Oil Refineries					
Refining Processes	3.4	3.5	3.6	3.7	3.9
Refinery Make Gas Combustion	4.7	4.9	5.0	5.2	5.4
Natural Gas and Other Gases Combustion	4.8	5.0	5.1	5.3	5.5
Liquid Fuel Combustion	0.1	0.1	0.1	0.1	0.1
Solid Fuel Combustion	1.0	1.0	1.1	1.1	1.1
Waste Management					
Landfill Combustion Sources	0.0	0.0	0.0	0.0	0.0
Landfill Fugitive Sources	1.2	1.2	1.2	1.2	1.2
Composting/POTWs	0.4	0.4	0.4	0.4	0.4
Other Industrial/ Commercial					
Cement Plants	0.9	0.9	0.9	0.9	1.0
Commercial Cooking	0.1	0.1	0.1	0.1	0.2
ODS Substitutes/Nat. Gas Distrib./Other	3.6	5.2	6.3	7.5	9.4
Reciprocating Engines	0.6	0.6	0.6	0.7	0.7
Turbines	0.4	0.4	0.4	0.4	0.4
Natural Gas- Major Combustion Sources	1.6	2.5	2.6	2.7	2.8
Natural Gas- Minor Combustion Sources	8.8	9.2	9.5	9.9	10.4
Coke Coal	1.0	1.0	1.1	1.1	1.2
Other Fuels Combustion	0.3	0.4	0.4	0.4	0.4
Subtotal	32.8	36.3	38.4	40.6	44.2
RESIDENTIAL FUEL USAGE					
Natural Gas	6.4	6.6	6.8	6.9	7.2
LPgas/Liquid Fuel	0.2	0.2	0.2	0.2	0.2
Solid Fuel	0.1	0.2	0.2	0.2	0.2
Subtotal	6.7	6.9	7.1	7.2	7.5
ELECTRICITY/ CO-GENERATION					
Co-Generation	5.5	5.5	5.7	6.0	6.4
Electricity Generation	2.8	3.1	3.2	3.3	3.5
Electricity Imports	6.8	7.3	7.6	7.9	8.3
Subtotal	15.1	15.8	16.5	17.2	18.3
OFF-ROAD EQUIPMENT					
Lawn and Garden Equipment	0.1	0.1	0.1	0.1	0.1
Construction Equipment	1.7	1.9	1.9	2.0	2.2
Industrial Equipment	0.7	0.8	0.8	0.9	1.0
Light Commercial Equipment	0.2	0.2	0.3	0.3	0.3
Subtotal	2.8	3.0	3.2	3.3	3.6
TRANSPORTATION					
Off-Road					
Locomotives	0.1	0.1	0.1	0.1	0.1
Ships	0.7	0.8	0.8	0.9	1.0
Boats	0.6	0.6	0.5	0.5	0.6

TABLE 3-9 (continued)

SOURCE CATEGORY Year	2005	2009	2012	2015	2020
Commercial Aircraft	1.8	2.0	2.1	2.3	2.6
General Aviation	0.2	0.2	0.2	0.3	0.3
Military Aircraft	0.5	0.5	0.5	0.5	0.5
On-Road					
Passenger Cars/Trucks up to 10,000 lbs	26.6	27.1	27.9	29.0	30.9
Medium/Heavy Duty Trucks > 10,000 lbs	3.3	3.3	3.4	3.5	3.7
Urban, School and Other Buses	0.8	0.8	0.8	0.8	0.9
Motor-Homes and Motorcycles	0.2	0.2	0.2	0.2	0.2
Subtotal	34.8	35.6	36.7	38.1	40.7
AGRICULTURE/FARMING					
Agricultural Equipment	0.2	0.2	0.2	0.2	0.2
Animal Waste	0.6	0.6	0.6	0.6	0.6
Soil Management	0.3	0.3	0.3	0.3	0.3
Biomass Burning	0.0	0.0	0.0	0.0	0.0
Subtotal	1.1	1.1	1.1	1.1	1.1
GRAND TOTAL EMISSIONS	**93.4**	**98.7**	**103.0**	**107.5**	**115.4**

Source: BAAQMD, 2010

Regulatory Background

In response to growing scientific and political concern regarding global climate change, California has taken the initiative to address the state's greenhouse gas emissions. California has adopted the Global Warming Solutions Act of 2006, also known as AB 32, which required the state to reduce its GHG emissions to 1990 levels by 2020. In addition, in 2005 Governor Schwarzenegger adopted Executive Order S-3-05, which committed to achieving an 80 percent reduction below 1990 levels by 2050. CARB has implemented these mandates through adoption of regulatory requirements to reduce GHG emissions (among other agency implementation actions). All refineries affected by the proposed new regulations are under CARB's AB32 cap and trade program, which established a limit on GHG emissions for each refinery. GHG emissions over the limit require additional GHG emission reductions or purchase of GHG emission credits from sources that had excess emission credits.

At the federal level, the U.S. EPA has adopted GHG emissions limits for new light-duty cars and trucks. This regulation of mobile sources has in turn triggered New Source Review and Title V permitting requirements for stationary sources. These requirements include using Best Available Control Technology to control emissions from major facilities. In addition, the U.S. EPA is also in the process of adopting New Source Performance Standards for major GHG source categories (currently limited to electric utility generating units).

The U.S. Congress passed "The Consolidated Appropriations Act of 2008" (HR 2764) in December 2007, which required reporting of GHG data and other relevant information from large emission sources and suppliers in the United States. The Rule is referred to as 40 Code of Federal Regulations (CFR) 4 Part 98 - Greenhouse Gas Reporting Program (GHGRP). Facilities

that emit 25,000 metric tonnes or more per year of GHGs are required to submit annual reports to U.S. EPA.

Significance Criteria

No GHG thresholds were provided in the BAAQMD 1999 CEQA Guidelines. The 2010 CEQA Guidelines established a project specific GHG significance threshold of 1,100 metric tons of CO_2 equivalent per year (MT CO_2 eq./year) (BAAQMD, 2010). Therefore, in order to provide a conservative air quality analysis, the thresholds recommended in the revised 2010 CEQA Guidelines (BAAQMD, 2010) will be used in the current air quality impacts analysis.

Discussion of Impacts

VII. a-b. Combustion of conventional hydrocarbon fuel results in the release of energy as bonds between carbon and hydrogen are broken and reformed with oxygen to create water vapor and carbon dioxide (CO_2). CO_2 is not a pollutant that occurs in relatively low concentrations as a by-product of the combustion process; CO_2 is a necessary combustion product of any fuel containing carbon. Therefore, attempts to reduce emissions of greenhouse gases from combustion focus on increasing energy efficiency – consuming less fuel to provide the same useful energy output.

The analysis of GHG emissions is a different analysis than for criteria pollutants for the following reasons. For criteria pollutant, significance thresholds are based on daily emissions because attainment or non-attainment is typically based on daily exceedances of applicable ambient air quality standards. Further, several ambient air quality standards are based on relatively short-term exposure effects to human health, e.g., one-hour and eight-hour. Using the half-life of CO_2, 100 years, for example, the effects of GHGs are longer-term, affecting the global climate over a relatively long time frame. GHGs do not have human health effects like criteria pollutants. Rather, it is the increased accumulation of GHGs in the atmosphere that may result in global climate change. Due to the complexity of conditions and interactions affecting global climate change, it is not possible to predict the specific impact, if any, attributable to GHG emissions associated with a single project. Furthermore, the GHG emissions associated with the proposed rule would be small relative to total global or even state-wide GHG emissions. Thus, the significance of potential impacts from GHG emissions related to the proposed project has been analyzed for long-term operations on a cumulative basis, as discussed below.

Implementation of the proposed project is expected to reduce emissions of TACs due to the revision of OEHHA guidelines. Facilities are expected to implement control measures to meet thresholds established by the revised guidelines. The BAAQMD anticipates that of the estimated 100 additional NSR projects that will require an HRA, approximately 60 will need to implement new control measures. Where multiple control measures were potentially viable, the measure that contributed greater GHG emissions was analyzed in order to constitute a worst-case scenario result. Thus, analysis of GHG emissions includes operational emissions for four thermal/catalytic oxidizers and 30-year amortized construction emissions of seven diesel particulate filters, three enclosures, and four thermal/catalytic oxidizers. The increase in GHG

emissions associated with these control measures are summarized in Table 3-10. Detailed emission calculations are provided in Appendix A.

TABLE 3-10

GHG Emissions Increases Associated with the Implementation of Control Measures (metric tons/year)

Activity	**CO_2e**
Construction (30-year Amortized)	32.4
Oxidizers	910.1
Total	942.5
BAAQMD Significance Threshold	1,100
Significant?	**No**

.

The GHG emissions associated with the proposed rule amendments are expected to be less than the GHG threshold and, therefore, less than significant. Most of the control measures are not expected to result in GHG emissions (other than during the construction phase), including reduction in throughput or operating hours, filters, baghouses, and enclosures.

Conclusion

Based on the above discussion, no significant adverse GHG impacts are expected due to implementation the proposed project.

		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 Section 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, be 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)	For a project within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☑
g)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☑
h)	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?	☐	☐	☑	☐

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 Air 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.

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 consist of three main elements: a hazard assessment that includes off-site consequences analyses and a five-year accident history, a prevention program, and an emergency response program.

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

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 limit emissions of TACs from new and modified stationary sources in the Bay Area. The proposed project is not expected to require substantial new development. Any new air pollution control equipment or enclosures would be expected to occur within existing commercial, industrial or institutional facilities. The proposed rule amendments are expected to increase the control and capture of TACs, thus limiting TAC emissions and exposure to TACs.

As shown in Table 2.6-1, facility modifications associated with the proposed rule amendments are largely expected to include limiting throughput or hours of operations; increased use of diesel particulate filters; additional enclosures and bag houses, and thermal oxidizers or carbon adsorption systems. The hazards associated with the use of these types of air pollution control equipment and systems are minimal.

- Limiting throughput or hours of operations would not result in increased hazards as no new equipment, hazardous materials uses, or hazards would be generated.
- Diesel particulate filters and baghouses are not expected to result in additional hazards as they would simply filter exhaust.

It is estimated that an additional four thermal oxidizers or carbon adsorption systems may be required to control TAC emissions. Operation of carbon adsorption systems has potential hazards associated with the desorption cycle when there is minor risk for explosion or release of VOC into the atmosphere. Carbon adsorption systems may also represent a fire risk during operation when carbon particles are saturated with volatile organic compounds. The potential hazard impacts would depend on the flammability of the material, concentration of VOC adsorbed into the activated carbon, ambient oxygen levels, characteristics of the carbon adsorption system, and the operating conditions. Carbon adsorption units would concentrate hazardous organic compound into the spent carbon, requiring recycling or disposal.

The risk of explosion or release of VOC from carbon adsorption systems is not expected to be significant. The engineering specifications for a carbon adsorption unit are typically designed to operate within an acceptable range of temperatures for the carbon bed. Good engineering practice means this range of temperatures should not exceed the lower explosive limit (LEL) of the compound(s) being adsorbed. There is little risk of fire if the LEL is not exceeded.

Oxidation systems can be susceptible to compressor failure and flame flashbacks, particularly during startup and shutdown. As a result, oxidation systems could pose potential hazard risks primarily to workers or to a lesser extent the public in the event of explosions or fires. Oxidation systems historically have a good safety record when operated properly according to the manufacturers' instruction. Proper tune-up and maintenance is also important and necessary to avoid failures or explosions. When installed, operated, and maintained properly, oxidation systems are not expected to create fire or explosion hazards to workers or the public in general.

In addition to following good engineering practice for both oxidization systems, thermal oxidizers and carbon adsorption systems, 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 are expected 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 rule modifications. It would be expected that these facilities are taking the appropriate and required actions to ensure proper handling or hazardous materials,

substances or wastes near school sites. The proposed rule amendments would not generate hazardous emissions, handling of hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school. Rather the proposed project would be more likely to control TACs from existing facilities near school sites. Therefore, no increase in hazardous emissions from implementation of the proposed new Rule 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. It is not known if the affected commercial, industrial, and institutional facilities are located on the hazardous materials sites list pursuant to Government Code §65962.5. However, the rule amendments are expected to increase the control of TAC emissions and 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–f. The proposed rule would not result in a safety hazard for people residing or working within two miles or a public airport or air strip. No impacts on airports or airport land use plans are anticipated from the proposed rule amendments, which are expected to increase the control of TAC emissions. Modifications are expected to be confined to the existing commercial, industrial and institutional land uses. Therefore, no significant adverse impacts on an airport land use plan or on a private air strip are expected.

VIII. g. 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. The proposed project would not impair implementation of, or physically interfere with any adopted emergency response plan or emergency evacuation plan. It is expected that the existing affected facilities already have an emergency response plan in place, where required. The addition of air pollution control equipment is not expected to require modification of the existing emergency response plan at the affected facilities. Thus, the proposed rule amendments are not expected to impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

VIII. h. It is not known if the affected facilities are adjacent to wildland. However, it is expected that these facilities are taking the appropriate and required actions to ensure proper handling of hazardous or acutely hazardous materials, substances or wastes. The proposed rule amendment is not expected to generate additional development that would place structures closer to wildland areas. The proposed project would also not increase the existing risk of fire hazards in areas with flammable brush, grass, or trees. No substantial or native vegetation typically exists on or near the affected facilities located within commercial, industrial, or institutional areas, so the proposed project is not expected to expose people or structures to wild fires. Therefore, no significant increase in fire hazards is expected at the affected facilities associated with the proposed project.

Conclusion

Based upon these considerations, no significant adverse hazards and hazardous materials impacts are expected from the implementation of proposed rule amendments.

		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 onsite or offsite?	☐	☐	☐	☑
d)	Substantially alter the existing drainage pattern of the site or area, including through 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, 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. Regulation 2-5 would apply to stationary sources located in facilities which are located within commercial, industrial, or commercial areas in the Bay Area.

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 affected area is located within the San Francisco Bay Area Hydrologic Basin. The primary regional groundwater water-bearing formations include the recent and Pleistocene (up to two million years old) alluvial deposits and the Pleistocene Huichica formation. Salinity within the unconfined alluvium appears to increase with depth to at least 300 feet. Water of the Huichica formation tends to be soft and relatively high in bicarbonate, although usable for domestic and irrigation needs.

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

Potential impacts on water resources will be considered significant if any of the following criteria apply:

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 262,820 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 project is designed to limit emissions of TACs from new and modified stationary sources located throughout the Bay Area. The proposed project is not expected to require any new development. Modifications are expected to be limited to existing commercial, industrial, or institutional facilities. Physical changes are expected to be limited to new air pollution control equipment and construction of enclosures. No significant increase in wastewater discharge is expected from the proposed project so no impacts on water quality resources are anticipated from the proposed project.

Minor construction may be necessary to install control systems. Construction would likely require a couple of some off-road equipment, medium-duty truck trips to deliver equipment, and a small construction crew. The construction of enclosures may require some grading and foundations work. Grading and foundation work is not expected to last more than one week per project, therefore, minimal water will be required for dust mitigation. No wet gas scrubbers are expected as a result of the proposed project. All existing and new facilities will still be required to have applicable wastewater discharge permits and storm water pollution prevention plans (SWPPP).

IX. b. No significant increase in water use is expected as a result of the proposed project. The Air District anticipates that facilities will implement various control measures, but no wet gas scrubbers are expected. Thus, water concerns will be limited to construction, which is expected to involve minor construction activities within existing facilities or buildings. Minor water use for construction purposes will not substantially increase water demand or interfere with groundwater recharge or cause any notable change in the groundwater table level.

IX. c, d, and e. The proposed program changes will reduce overall TAC emissions. The proposed project does not have the potential to substantially increase the area subject to runoff since the construction activities are expected to be limited in size and would be located primarily within existing facilities that have already been graded. Additionally, facilities are typically expected to develop a SWPPP to address storm water impacts. The proposed project is also not expected to substantially 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"). Any construction activities associated with the proposed project would occur within the confines of existing facilities. 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 project.

		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, 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. Regulation 2-5 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

Land use and planning impacts will be considered significant if the project conflicts with the land use and zoning designations established by local jurisdictions.

Discussion of Impacts

X. a-c. The proposed project is designed to limit emissions of TACs from stationary sources located in the Bay Area. The proposed project does not include any components that would require major modifications to existing commercial, industrial, or institutional facilities and it would not result in impacts that would physically divide an established community or generate additional development.

The proposed project is not expected to require any new substantial construction or development. New or modified pollution control equipment or enclosures would be located within existing commercial, industrial, or institutional facilities. Construction activities would be limited to the confines of existing facilities which are zoned for commercial, industrial, or institutional land use. New of modified equipment would be limited to the confines of existing facilities and are not expected to affect adjacent land uses, divide an established community, conflict with any applicable land use plan or policy or conflict with any habitat conservation plan.

Conclusion

Based upon these considerations, no significant adverse impacts to land use and planning are expected from the adoption of the proposed project.

	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 and the affected environment vary greatly throughout the area. The commercial, industrial, or institutional facilities affected by the proposed project are located in a relatively small portion of the Bay Area.

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

Project-related impacts on mineral resources will be considered significant if any of the following conditions are met:

- 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 2-5 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 project is designed to limit emissions of TACs from stationary sources in the Bay Area. Therefore, no impacts on mineral resources are expected.

Conclusion

Based upon these considerations, no significant adverse impacts to mineral resources are expected as a result of the proposed project.

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. NOISE. Would the project:					
a)	Expose 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)	Expose persons to or generate of excessive ground borne vibration or ground borne noise levels?	☐	☐	☑	☐
c)	Result in 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 and expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☑
f)	For a project within the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☑

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 proposed project would apply existing facilities which are located within commercial, industrial, or institutional areas in the Bay Area.

Regulatory Background

Noise issues 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

Impacts on noise will be considered significant if:

- Construction noise levels exceed the local noise ordinances or, if the noise threshold 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 project is designed to limit emissions of TACs from stationary sources in the Bay Area. New and modified equipment are expected to be limited to the commercial, industrial, and institutional facilities. The existing noise environment at each of the affected facilities is typically dominated by noise from existing equipment onsite, vehicular traffic around the facilities, and trucks entering and exiting facility premises. No new major industrial equipment is expected to be required to be installed due to the proposed project so that no noise impacts associated with the operation of the proposed project are expected. Air pollution control equipment is not generally a major noise source. Further, all noise producing equipment most comply with local noise ordnances and applicable OSHA and Cal/OSHA noise requirements. Therefore, industrial operations affected by the proposed new rule are not expected to have a significant adverse effect on local noise control laws or ordinances.

Construction activities associated with the proposed project may generate some noise associated with temporary construction equipment and construction-related traffic. Construction would likely require some truck trips to deliver equipment, a construction crew of up to about 15 workers, and a few pieces of construction equipment (e.g., forklift, welders, backhoes, cranes, and generators). All construction activities would be temporary are expected to occur within the confines of existing commercial, industrial, or institutional facilities so that no significant increase in noise during construction activities is expected.

XII. b. The proposed project is not expected to generate or expose people to excessive ground borne vibration or ground borne noise. No major construction equipment that would generate

vibration (e.g., backhoes, graders, jackhammers, etc.) is expected to be required. Therefore, the proposed project is not expected to generate excessive ground borne vibration or noise.

XII. e-f. It is not known if the existing commercial, industrial, or institutional facilities affected by the proposed project are not located within existing airport land use plans. The addition of new or modification of existing air pollution control equipment or enclosures would not expose people residing or working in the project area to excessive noise levels associated with airports, as air pollution control equipment are not typically noise generating equipment. The proposed amendments to Regulation 2-5 would not locate residents or commercial buildings or other sensitive noise sources closer to airport operations. As noted in the previous item, there are no components of the proposed project that would substantially increase ambient noise levels, either intermittently or permanently.

Conclusion

Based upon these considerations, no significant adverse impacts to noise are expected from the adoption of the proposed project.

	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, 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. Regulation 2-5 would apply to facilities which are located within commercial, industrial, or institutional areas in the Bay Area.

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

Impacts of the proposed project on population and housing will be considered significant if the following criteria are exceeded:

- 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. 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 and MTC, 2013). The proposed project is not anticipated to generate any significant effects, either directly or indirectly, on the Bay Area's population or population distribution. The proposed amendments to Regulation 2-5 will affect commercial, industrial, or institutional facilities. It is expected that the existing labor pool would accommodate the labor requirements for any new or modified equipment at the facilities. In addition, it is not expected that the affected facilities would need to hire additional personnel to implement the proposed rule. In the event that new employees are hired, it is expected that the existing local labor pool in the Air District can accommodate any increase in demand for workers that might occur as a result of adopting the proposed amendments to Regulation 2-5. As such, adopting the proposed project is not expected to induce substantial population growth.

XIII. b-c. The amendments to Regulation 2-5 could require new or modified pollution control equipment at existing commercial, industrial, or institutional facilities in the Bay Area. The implementation of the proposed project 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 project.

	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, 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. Amendments to Regulation 2-5 would apply to facilities which are located within commercial, industrial, or institutional areas in the Air District.

Given the large area covered by the BAAQMD, public services are provided by a wide variety of local agencies. Fire protection and police protection/law enforcement services within the BAAQMD are provided by various districts, organizations, and agencies. There are several school districts, private schools, and park departments within the BAAQMD. 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

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 project is designed to reduce emissions of TACs from stationary sources in the Bay Area. Proposed amendments to Regulation 2-5 could require minor construction activities and modifications at existing facilities. The modifications are not expected to require additional service from local fire departments above current levels.

As noted in the "Population and Housing" discussion above, the proposed project is not expected to induce population growth because the local labor pool (e.g., workforce) is expected to be sufficient to accommodate any activities that may be necessary at affected facilities. Additionally, modifications to existing facilities are not expected to require an increase in employees. 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 project, 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 amendments to Regulation 2-5.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. RECREATION. Would the project:				
a) 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) 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 2-5 would apply to existing facilities which are located within commercial, industrial, or institutional areas within the Air District.

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

Impacts to 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 2-5 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 project. New and modified pollution control equipment or enclosures required to comply with the proposed project would occur within the boundaries of existing facilities which are located in commercial, industrial, or institutional facilities, 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 project is not expected to have any significant adverse impacts on recreation.

Conclusion

Based upon these considerations, no significant adverse impacts to recreation are expected from the adoption of the amendments to Regulation 2-5.

	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 by 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 (MTC, 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 (MTC, 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. Proposed Regulation 9-14 will affect the Phillips 66 Carbon Plant with is located east of Highway 80, off the John Muir Highway (Route 4) on Franklin Canyon Road in Rodeo, California.

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

Impacts on transportation/traffic will be considered significant if any of the following criteria apply:

- 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-b. Construction: The proposed project is designed to limit emissions of TACs from stationary sources in the Bay Area. New or modified pollution control equipment is expected to be located in commercial, industrial, or institutional facilities and may require construction activities. Construction impacts were considered for the control measures found in Table 2-6.1. Control measures that do not require equipment, such as reducing operating time, are not expected to generate any additional traffic. The BAAQMD expects that three facilities per year are expected to meet reductions by implementing either a baghouse or an enclosure. The construction of enclosures is expected to require the most construction equipment and workers. It has been estimated to require up to 34 delivery and/or disposal trucks and up to about 45 construction worker trips on a peak construction day (during the building construction phase for enclosures). Construction activities would be expected at existing commercial, industrial and institutional land uses and would be temporary. The proposed project is not expected to require modification to circulation for temporary construction activities.

Operational: Waste products may be generated from the use of several types of control technologies. Wastes could include: spent carbon generated from the carbon adsorption process; spent metal catalysts from the catalytic oxidation process; and dry solids from filtration controls. The majority of wastes will likely need to be transported to disposal or recycling facilities. The

catalysts in catalytic oxidizers need to be replaced every few years so this potential waste product was considered to contribute to the waste transport impacts.

For a "worst case" analysis, it was assumed that about 18 facilities per year would be required to install a control device to comply with the proposed rule amendments. These facilities at any given day would generate an additional one-two truck trips per day in the entire Air District for delivery and disposal. These potential truck trips are not expected to significantly adversely affect circulation patterns on local roadways near affected facilities. In addition, this volume of additional daily truck traffic is negligible over the entire area of the Air District. Finally, the number waste disposal transport trips substantially over estimates the number of anticipated trips because owners/operators at affected facilities may use other types of add-on control equipment and most are expected to limit throughput rates or operating times which would have no impact on traffic. No increase in worker traffic is expected as the operation of air pollution control equipment of the type expected under the proposed rule amendments is not expected to require any additional employees. Therefore, operational traffic under the proposed rule amendments is expected to be less than significant.

XVI. c. The proposed project is not expected to involve the delivery of materials via air so no increase in air traffic is expected. The addition of new or modified air pollution control equipment is not expected to change air traffic patterns or result in a change in location that results in substantial safety risks.

XVI. d-e. The proposed project is not expected to increase traffic hazards or create incompatible uses. The proposed project does 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. Each affected facility is expected to continue to maintain their existing emergency access. 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 project is not expected to affect the performance of mass transit or non-motorized travel to street, highways and freeways, pedestrian or bicycle paths. No conflicts with any congestion management programs, to include level of service and travel demand measures, or other standards established by county congestion management agencies for designated roads or highways are expected. No changes are expected to parking capacity at or in the vicinity of affected facilities as the proposed project only pertain to equipment located within existing industrial facilities. Therefore, no significant adverse impacts resulting in changes to traffic patterns or levels of service at local intersections are expected.

Conclusion

Based upon these considerations, no significant adverse impacts to transportation and traffic are expected from the adoption of the proposed project.

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less-than-Significant Impact	No Impact
XVII. 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

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 2-5 would apply to facilities which are located within commercial, industrial, or institutional areas in the Bay Area.
Given the large area covered by the BAAQMD, public utilities are provided by a wide variety of local agencies. The affected commercial, industrial, or institutional facilities are supported by wastewater and storm water treatment facilities and treated wastewater is discharged under the requirements of 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.

Hazardous waste generated within the Bay Area, which is not reused on-site, or recycled off-site, is disposed of at a licensed in-state hazardous waste disposal facilities. 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. The nearest out-of-state landfills are U.S. Ecology, Inc., located in Beatty, Nevada; USPCI, Inc., in Murray, Utah; and Envirosafe Services of Idaho, Inc., in Mountain Home, Idaho. Incineration is provided at the following out-of-state facilities: Aptus, located in Aragonite, Utah and Coffeyville, Kansas; Rollins Environmental Services, Inc., located in Deer Park, Texas and Baton Rouge, Louisiana; Chemical Waste Management, Inc., in Port Arthur, Texas; and Waste Research & Reclamation Co., Eau Claire, Wisconsin.

Regulatory Background

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

XVII. a, b, d, and e. The proposed project is designed to limit emissions of TACs from stationary sources in the Bay Area. The facilities affected by the proposed amendment to Regulation 2-5 already exists and already use water, generate wastewater, treat wastewater, and discharges wastewater under existing wastewater discharge permits. The potential water use and wastewater impacts associated with implementation of proposed project are addressed under Hydrology and Water Quality (see Section IX a.) and have been determined to be less than significant.

XVII. c. Implementation of the proposed project may require new or modified pollution control equipment within the confines of existing facilities. These modifications would not alter the existing drainage system or require the construction of new storm water drainage facilities. Nor would the proposed project 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.

XVII. f-g. The amendments to Regulation 2-5 would reduce TAC emissions from existing commercial, industrial, or institutional facilities. The baghouses and catalytic oxidizers will generate solid waste, but they are not expected require annual replacement events. The baghouses and spent catalyst are only expected to generate a few tons of waste per change out. It is assumed that any hazardous material will be taken to the U.S. Ecology Beatty Nevada hazardous waste facility for treatment and disposal. U.S. Ecology, Inc. is currently receiving waste, and is in the process of extending the operational capacity for an additional 35 years (U.S. Ecology, 2015). Clean Harbors in Grassy Mountain, Utah is also available to receive hazardous waste and is expected to continue to receive waste for an additional 70 years (Clean Harbors, 2015). Therefore, the proposed project impacts on hazardous waste landfills are less than significant.

The proposed project is not expected to generate any significant increase in solid waste. Therefore, no significant adverse impacts are expected to solid waste as a result of the proposed project.

Conclusion

Based upon these considerations, no significant adverse impacts to utilities/service systems are expected from the adoption of the proposed project.

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII.	**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?	☐	☐	☑	☐

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

Discussion of Impacts

XVIII. a. The proposed project does 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. The proposed project is designed to reduce TAC emissions from commercial, industrial and institutional facilities in the Bay Area, thus providing a beneficial air quality impact and improvement in air quality. As discussed in Section IV, Biological Resources and Section V, Cultural Resources, no significant adverse impacts are expected to biological or cultural resources.

XVIII. b-c. The proposed project is designed to reduce TAC emissions from commercial industrial and institutional facilities in the Bay Area, thus providing a beneficial air quality impact and improvement in air quality. The estimated increase in emissions associated with the construction and operation of additional air pollution control equipment is minor (see Tables 3-6 and 3-7). The proposed project is expected to reduce TAC emissions, thus reducing the potential health 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

References Cited

Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission, 2013. Environmental Impact Report Plan Bay Area, SCH No. 2012062029, 2013. Available at: http://planbayarea.org/plan-bay-area/plan-elements/environmental-impact-report.html

BAAQMD, 1999. BAAQMD CEQA Guidelines, Assessing the Air Quality Impacts of Projects and Plans, December 1999.

BAAQMD, 2010. 2010 Clean Air Plan. Final Program EIR, August, 2010.

BAAQMD, 2010. California Environmental Quality Act, Air Quality Guidelines.

BAAQMD, 2010. Toxic Air Contaminant Control Program, 2010 Annual Report.

BAAQMD, 2016. Workshop Report, Proposed Amendments to: Air District Regulation 2, Rule 5 – New Source Review of Toxic Air Contaminants, January 2016.

Appendix A:
Air Quality Analysis

Appendix A
Bay Area Air Quality Management District
Regulation 2, Rule 5
Air Quality Analysis
Diesel Particulate Filter Construction Equipment Emissions

Phase	Equipment	Horsepower	Amount	Days	Hours/Day	Total Hours	Emission Factors (lb/hr)[1]						Emissions (lb)						
							VOC	CO	NOx	SOx	PM10	CO2e[2]	VOC	CO	NOx	SOx	PM10	PM2.5	CO2e[2]
Building Construction	Generator	50	1	3	8	24	0.04	0.23	0.19	0.00	0.02	0.01	0.86	5.58	4.53	0.01	0.40	0.39	0.23
Building Construction	Forklift	Comp	1	3	1.33	4	0.02	0.21	0.23	0.00	0.02	0.01	0.09	0.86	0.90	0.00	0.07	0.07	0.04
Building Construction	Welder (Electric)	0	1	3	3.33	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total													**0.95**	**6.44**	**5.43**	**0.01**	**0.47**	**0.46**	**0.26**

(1) Off-Road 2011. CO emissions from SCAQMD, 2006 : http://www.aqmd.gov/ceqa/handbook/offroad/offroadEF07_25.xls

(2) Carbon Dioxide Equivalents (CO_{EQ}) are based on fuel use and default emission factors for diesel. Metric tons.

Appendix A
Bay Area Air Quality Management District
Regulation 2, Rule 5
Air Quality Analysis
Enclosure Construction Equipment Emissions

							Emission Factors (lb/hr)[1]						Emissions (lb)						
Phase	Equipment	Horsepower	Amount	Days	Hours/Day	Total Hours	VOC	CO	NOx	SOx	PM10	CO_2e[2]	VOC	CO	NOx	SOx	PM10	PM2.5	CO_2e[2]
Paving	Cement and Mortar Mixers	50	1	10	8	80	0.04	0.08	0.19	0.00	0.02	0.01	2.86	6.10	15.09	0.03	1.33	1.32	0.75
Paving	Pavers	Comp	1	10	8	80	0.04	0.51	0.52	0.00	0.03	0.03	3.28	40.59	41.87	0.09	2.29	2.27	2.29
Paving	Rollers	Comp	2	10	8	160	0.03	0.39	0.31	0.00	0.02	0.02	5.08	62.61	49.33	0.11	3.19	3.16	2.62
Paving	Tractors/Loaders/Backhoe	Comp	1	10	8	80	0.03	0.37	0.36	0.00	0.02	0.02	2.44	29.33	28.67	0.06	1.89	1.87	1.54
Paving	Paving Equipment	Comp	1	10	8	80	0.03	0.42	0.44	0.00	0.02	0.02	2.73	33.32	35.49	0.08	1.88	1.86	1.99
Architectural Coating	Air Compressors	50	1	10	6	60	0.04	0.22	0.19	0.00	0.02	0.01	2.15	13.25	11.32	0.02	1.00	0.99	0.56
Building Construction	Generator Sets	50	1	220	8	1760	0.04	0.23	0.19	0.00	0.02	0.01	62.99	409.42	332.07	0.69	29.24	28.95	16.51
Building Construction	Cranes	Comp	1	220	8	1760	0.07	0.42	0.91	0.00	0.04	0.04	115.04	730.84	1600.24	2.58	75.52	74.76	62.22
Building Construction	Forklifts	Comp	2	220	7	3080	0.02	0.22	0.23	0.00	0.02	0.01	68.38	671.77	693.88	1.23	52.38	51.86	29.54
Building Construction	Tractor/Loader/Backhoe	Comp	1	220	7	1540	0.03	0.37	0.36	0.00	0.02	0.02	46.91	564.61	551.81	1.23	36.44	36.07	29.56
Building Construction	Welders	0	3	220	8	5280	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	Graders	Comp	1	3	8	24	0.07	0.58	1.01	0.00	0.04	0.04	1.74	14.03	24.29	0.04	1.08	1.07	0.98
Site Preparation	Tractors/Loaders/Backhoes	Comp	1	3	7	21	0.03	0.37	0.36	0.00	0.02	0.02	0.64	7.70	7.52	0.02	0.50	0.49	0.40
Site Preparation	Scrapers	Comp	1	3	8	24	0.14	0.87	2.08	0.00	0.09	0.09	3.33	20.91	49.91	0.09	2.06	2.04	2.26
Grading	Rubber Tired Dozers	Comp	1	6	6	36	0.13	0.93	1.62	0.00	0.08	0.05	4.60	33.48	58.26	0.08	2.95	2.92	1.89
Grading	Tractors/Loaders/Backhoes	Comp	2	6	7	84	0.03	0.37	0.36	0.00	0.02	0.02	2.56	30.80	30.10	0.07	1.99	1.97	1.61
Grading	Graders	Comp	1	6	8	48	0.07	0.58	1.01	0.00	0.04	0.04	3.49	28.05	48.59	0.08	2.16	2.14	1.97
Total													**328.22**	**2696.81**	**3578.44**	**6.50**	**215.89**	**213.73**	**156.69**

(1) Off-Road 2011. CO emissions from SCAQMD, 2006 : http://www.aqmd.gov/ceqa/handbook/offroad/offroadEF07_25.xls

(2) Carbon Dioxide Equivalents (CO_2e) are based on fuel use and default emission factors for diesel. Metric tons.

Appendix A
Bay Area Air Quality Management District
Regulation 2, Rule 5
Air Quality Analysis
Oxidizer Construction Equipment Emissions

Phase	Equipment	Offroad Category	Horsepower	Amount	Days	Hours/Day	Total Hours	Emission Factors (lb/hr)[1]						Emissions (lb)						
								VOC	CO	NOx	SOx	PM10	CO2e[2]	VOC	CO	NOx	SOx	PM10	PM2.5	CO2e[2]
Site Preparation	Rubber Tired Dozers	Comp	Comp	1	8	7	56	0.13	0.93	1.62	0.00	0.08	0.05	7.15	52.08	90.63	0.12	4.59	4.54	2.94
Site Preparation	Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Comp	1	8	7	56	0.03	0.37	0.36	0.00	0.02	0.02	1.71	20.53	20.07	0.04	1.32	1.31	1.07
Paving	Pavers	Pavers	Comp	1	8	7	56	0.04	0.51	0.52	0.00	0.03	0.03	2.30	28.41	29.31	0.07	1.60	1.59	1.60
Paving	Cement and Mortar Mixers	Other Construction Equipment	50	1	8	6	48	0.04	0.08	0.19	0.00	0.02	0.01	1.72	3.66	9.06	0.02	0.80	0.79	0.45
Paving	Rollers	Rollers	Comp	1	8	7	56	0.03	0.39	0.31	0.00	0.02	0.02	1.78	21.91	17.27	0.04	1.12	1.11	0.92
Equipment Installation	Cranes	Cranes	Comp	1	5	8	40	0.07	0.42	0.91	0.00	0.04	0.04	2.61	16.61	36.37	0.06	1.72	1.70	1.41
Equipment Installation	Forklifts	Forklifts	Comp	1	5	7	35	0.02	0.22	0.23	0.00	0.02	0.01	0.78	7.63	7.89	0.01	0.60	0.59	0.34
Equipment Installation	Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Comp	1	5	8	40	0.03	0.37	0.36	0.00	0.02	0.02	1.22	14.67	14.33	0.03	0.95	0.94	0.77
Equipment Installation	Generator Sets	Other Construction Equipment	50	1	5	7	35	0.04	0.23	0.19	0.00	0.02	0.01	1.25	8.14	6.60	0.01	0.58	0.58	0.33
Total														**20.52**	**173.65**	**231.51**	**0.41**	**13.27**	**13.14**	**9.83**

(1) Off-Road 2011. CO emissions from SCAQMD, 2006 : http://www.aqmd.gov/ceqa/handbook/offroad/offroadEF07_25.xls

(2) Carbon Dioxide Equivalents (CQ_{2e}) are based on fuel use and default emission factors for diesel. Metric tons.

Appendix A
Bay Area Air Quality Management District
Regulation 2, Rule 5
Air Quality Analysis
Daily Construcion Vehicles Trips

DPF

Phase	Trip Type	Vehicles
Equipment Installation	Commuters	4
Equipment Installation	Delivery	1
Equipment Installation	HHDT	0

Enclosures

Phase	Trip Type	Vehicles
Paving	Commuters	15
Paving	Delivery	0
Paving	HHDT	0
Architectural Coating	Commuters	8
Architectural Coating	Delivery	0
Architectural Coating	HHDT	0
Site Preparation	Commuters	8
Site Preparation	Delivery	0
Site Preparation	HHDT	0
Building Construction	Commuters	42
Building Construction	Delivery	16
Building Construction	HHDT	0
Grading	Commuters	10
Grading	Delivery	0
Grading	HHDT	34

Oxidizers

Phase	Trip Type	Vehicles
Site Preparation	Commuters	4
Site Preparation	Delivery	1
Site Preparation	HHDT	2
Paving	Commuters	4
Paving	Delivery	2
Paving	HHDT	2
Equipment Installation	Commuters	4
Equipment Installation	Delivery	1
Equipment Installation	HHDT	1

Appendix A
Bay Area Air Quality Management District
Regulation 2, Rule 5
Air Quality Analysis
Diesel Particulate Filter On-Road Construction Emissions [1]

Phase	Trip Type	Trip Length	Trips	VMT	VOC (lb/hr)	CO(lb/hr)	NOx (lb/hr)	SOx(lb/hr)	PM (lb/hr)	Fugitive PM [2]	CO2e (lb/mile)[3]	VOC (lbs)	CO(lbs)	NOx (lbs)	SOx(lbs)	PM10 (lbs)	PM2.5 (lbs)	CO2e (tonnes)
Equipment Installation	Commuters	24.8	12	297.6	0.000	0.002	0.001	0.000	0.000	0.000	0.825	0.015	0.644	0.173	0.002	0.098	0.043	0.111
Equipment Installation	Delivery	14.6	2	29.2	0.001	0.003	0.008	0.000	0.001	0.000	2.697	0.017	0.077	0.247	0.001	0.030	0.018	0.036
Equipment Installation	HHDT	40	0	0	0.000	0.003	0.007	0.000	0.000	0.002	2.975	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total												**0.032**	**0.720**	**0.420**	**0.003**	**0.128**	**0.062**	**0.147**

(1) Emfac2014 emission factors for the San Francisco Bay Area District.

(2) Emission Calculations for travel on paved roads from EPA AP-42 Section 13.2.1, January 2011

$E = k(sL)^{0.91} \times (W)^{1.02}$

Where: k = 0.0022 lb/VMT for PM10, sL = road silt loading (gms/m2)

(0.03 for major/collector roads), W = weight of vehicles (2.5 tons for light; 5.5 for medium trucks,

and 24 for heavy trucks)

(3) Carbon Dioxide Equivalence (CO_E) = $CO_2 + CH_4 * 21 + N2O*310$

where CO2 emissions factors are from Emfac2011. CH4 and N2O emissions factors are from Direct Emissions from Mobile Combustion Sources, EPA 2008.

where light vehicle are gasoline light duty trucks.

where medium/heavy duty vehicle are diesel heavy duty trucks.

	2017		
Chemical	Light	Medium	Heavy
CO2 (lb/mi)	0.8141	2.6938	2.9713
CH4 (g/mi)	0.0148	0.0051	0.0051
N2O (g/mi)	0.0157	0.0048	0.0048
CO2e (lb/mi)	0.825	2.697	2.975

Appendix A
Bay Area Air Quality Management District
Regulation 2, Rule 5
Air Quality Analysis
Enclosures On-Road Construction Emissions [1]

Phase	Trip Type	Trip Length	Trips	VMT	VOC (lb/hr)	CO(lb/hr)	NOx (lb/hr)	SOx(lb/hr)	PM (lb/hr)	Fugitive PM [2]	CO2e (lb/mile)[3]	VOC (lbs)	CO(lbs)	NOx (lbs)	SOx(lbs)	PM10 (lbs)	PM2.5 (lbs)	CO2e (tonnes)
Paving	Commuters	24.8	150	3720	0.000	0.002	0.001	0.000	0.000	0.000	0.825	0.191	8.044	2.165	0.030	1.226	0.543	1.393
Paving	Delivery	14.6	0	0	0.001	0.003	0.008	0.000	0.001	0.000	2.697	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Paving	HHDT	40	0	0	0.000	0.003	0.007	0.000	0.000	0.002	2.975	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Architectural Coating	Commuters	24.8	80	1984	0.000	0.002	0.001	0.000	0.000	0.000	0.825	0.102	4.290	1.155	0.016	0.654	0.290	0.743
Architectural Coating	Delivery	14.6	0	0	0.001	0.003	0.008	0.000	0.001	0.000	2.697	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Architectural Coating	HHDT	40	0	0	0.000	0.003	0.007	0.000	0.000	0.002	2.975	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Site Preparation	Commuters	24.8	24	595.2	0.000	0.002	0.001	0.000	0.000	0.000	0.825	0.031	1.287	0.346	0.005	0.196	0.087	0.223
Site Preparation	Delivery	14.6	0	0	0.001	0.003	0.008	0.000	0.001	0.000	2.697	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Site Preparation	HHDT	40	0	0	0.000	0.003	0.007	0.000	0.000	0.002	2.975	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Building Construction	Commuters	24.8	9240	2E+05	0.000	0.002	0.001	0.000	0.000	0.000	0.825	11.761	495.541	133.373	1.855	75.513	33.477	85.804
Building Construction	Delivery	14.6	3520	51392	0.001	0.003	0.008	0.000	0.001	0.000	2.697	29.564	135.359	434.195	1.329	52.440	32.509	62.877
Building Construction	HHDT	40	0	0	0.000	0.003	0.007	0.000	0.000	0.002	2.975	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Grading	Commuters	24.8	60	1488	0.000	0.002	0.001	0.000	0.000	0.000	0.825	0.076	3.218	0.866	0.012	0.490	0.217	0.557
Grading	Delivery	14.6	0	0	0.001	0.003	0.008	0.000	0.001	0.000	2.697	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Grading	HHDT	40	200	8000	0.000	0.003	0.007	0.000	0.000	0.002	2.975	3.478	20.099	57.456	0.231	21.468	6.101	10.795
Total												**45.204**	**667.838**	**629.556**	**3.478**	**151.987**	**73.225**	**162.392**

Assumes 5000 cu.yd of overburden moved in 25 trucks.

(1) Emfac2014 emission factors for the San Francisco Bay Area District.

(2) Emission Calculations for travel on paved roads from EPA AP-42 Section 13.2.1, January 2011

$E = k(sL)^{0.91} \times (W)^{1.02}$

Where: k = 0.0022 lb/VMT for PM10, sL = road silt loading (gms/m2)

(0.03 for major/collector roads), W = weight of vehicles (2.5 tons for light; 5 for medium trucks,

and 24 for heavy trucks)

(3) Carbon Dioxide Equivalence (CO_E) = $CO_2 + CH_4 * 21 + N2O*310$

where CO2 emissions factors are from Emfac2011. CH4 and N2O emissions factors are from Direct Emissions from Mobile Combustion Sources, EPA 2008.

where light vehicle are gasoline light duty trucks.

where medium/heavy duty vehicle are diesel heavy duty trucks.

	2017		
Chemical	Light	Medium	Heavy
CO2 (lb/mi)	0.8141	2.6938	2.9713
CH4 (g/mi)	0.0148	0.0051	0.0051
N2O (g/mi)	0.0157	0.0048	0.0048
CO2e (lb/mi)	0.825	2.697	2.975

Appendix A
Bay Area Air Quality Management District
Regulation 2, Rule 5
Air Quality Analysis
Oxidizer On-Road Construction Emissions[1]

Phase	Trip Type	Trip Length	Trips	VMT	VOC (lb/hr)	CO(lb/hr)	NOx (lb/hr)	SOx(lb/hr)	PM (lb/hr)	Fugitive PM[2]	CO2e (lb/mile)[3]	VOC (lbs)	CO(lbs)	NOx (lbs)	SOx(lbs)	PM10 (lbs)	PM2.5 (lbs)	CO2e (tonnes)
Site Preparation	Commuters	24.8	32	793.6	0.000	0.002	0.001	0.000	0.000	0.000	0.825	0.041	1.716	0.462	0.006	0.262	0.116	0.297
Site Preparation	Delivery	14.6	4	58.4	0.001	0.003	0.008	0.000	0.001	0.000	2.697	0.034	0.154	0.493	0.002	0.060	0.037	0.071
Site Preparation	HHDT	40	10	400	0.000	0.003	0.007	0.000	0.000	0.002	2.975	0.174	1.005	2.873	0.012	1.073	0.305	0.540
Paving	Commuters	24.8	32	793.6	0.000	0.002	0.001	0.000	0.000	0.000	0.825	0.041	1.716	0.462	0.006	0.262	0.116	0.297
Paving	Delivery	14.6	10	146	0.001	0.003	0.008	0.000	0.001	0.000	2.697	0.084	0.385	1.234	0.004	0.149	0.092	0.179
Paving	HHDT	40	10	400	0.000	0.003	0.007	0.000	0.000	0.002	2.975	0.174	1.005	2.873	0.012	1.073	0.305	0.540
Equipment Installation	Commuters	24.8	20	496	0.000	0.002	0.001	0.000	0.000	0.000	0.825	0.025	1.073	0.289	0.004	0.163	0.072	0.186
Equipment Installation	Delivery	14.6	4	58.4	0.001	0.003	0.008	0.000	0.001	0.000	2.697	0.034	0.154	0.493	0.002	0.060	0.037	0.071
Equipment Installation	HHDT	40	1	40	0.000	0.003	0.007	0.000	0.000	0.002	2.975	0.017	0.100	0.287	0.001	0.107	0.031	0.054
Total												**0.623**	**7.307**	**9.466**	**0.048**	**3.209**	**1.111**	**2.235**

(1) Emfac2014 emission factors for the San Francisco Bay Area District.

(2) Emission Calculations for travel on paved roads from EPA AP-42 Section 13.2.1, January 2011

$E = k(sL)^{0.91} \times (W)^{1.02}$

Where: k = 0.0022 lb/VMT for PM10, sL = road silt loading (gms/m2)

(0.03 for major/collector roads), W = weight of vehicles (2.5 tons for light; 5.5 for medium trucks,

and 24 for heavy trucks)

(3) Carbon Dioxide Equivalence (CO_E) = CO_2 + CH_4 * 21 + N2O*310

where CO2 emissions factors are from Emfac2011. CH4 and N2O emissions factors are from Direct Emissions from Mobile Combustion Sources, EPA 2008.

where light vehicle are gasoline light duty trucks.

where medium/heavy duty vehicle are diesel heavy duty trucks.

	2017		
Chemical	**Light**	**Medium**	**Heavy**
CO2 (lb/mi)	0.8141	2.6938	2.9713
CH4 (g/mi)	0.0148	0.0051	0.0051
N2O (g/mi)	0.0157	0.0048	0.0048
CO2e (lb/mi)	0.825	2.697	2.975

Appendix A
Bay Area Air Quality Management District
Regulation 2, Rule 5
Air Quality Analysis
Peak Monthly Fugitive PM Construction Emissions

Grading Operations	Pieces of Equipment Operating	Hours of Operation	PM10 Emission Factor (lb/hour)	Water Control Factor[5]	Daily PM10 Emissions (lb/day)	Annual PM10 Emissions (tons/yr)
Construction Activities[1]	**1**	**8**	0.348	0.39	1.08	0.0054

Stockpiles	Tons of Materials Handled Per Day	PM10 Emission Factor (lb/ton)	Water Control Factor[5]	Daily PM10 Emissions (lb/day)	Annual PM10 Emissions (ton/yr)
Construction Activities[2]	**500**	0.00005	0.39	0.0100	0.0001

Assumptions: 1cubic yard trench spoils = 1 ton

WIND EROSION Disturbed Area and Temporary Stockpiles	Acreage Disturbed Per Day	PM10 Emission Factor (lb/day/acre)	Daily PM10 Emissions (lb/day)	Annual PM10 Emissions (ton/yr)
Construction Activities[3]	**0.5**	0.220	0.110	0.0006

Filling and Dumping	Tons of Materials Handled Per Day	PM10 Emission Factor (lb/ton)	Water Control Factor[5]	Daily PM10 Emissions (lb/day)	Annual PM10 Emissions (ton/yr)
Truck Filling[4]	**500.0**	5.15E-05	0.39	1.00E-02	0.0001
Truck Dumping	**500.0**	5.15E-05	0.39	1.00E-02	0.0001

Assumes 5000 cu.yd moved over 10 days.

TOTAL PM10 Pounds/day	Daily	Annual
(Controlled Emissions)	1.2248	0.00612

(1) Emissions (lbs/hr) = [0.75 x $(G^{1.5})/(H^{1.4})$ x J
where G = silt content (7.5%), H = moisture content (15.0%) and J = hrs of operation (EPA AP-42 Table 11.9-1 for bulldozing overburden).

(2) Emissions (lbs/ton) = 0.00112 x $[(G/5)^{1.3}/(H/2)^{1.4}]$ x I/J
where G=mean wind speed (4.1 mph), H=moisture content of surface material (15%); I=lbs of dirt handled per day; and J=2,000 lbs/ton.

(3) Emissions (lbs/day/acre) = 1.7 x [(G/1.5)*(365-H)/235] x I/15 x J
where G = silt content (7.5%); H = days with >0.01 inch of rain (zero days); I = percentage of time wind speed exceeds 12 mph (0.5%) and J= fraction of TSP (0.5).

(4) Used SCAQMD Table 9-9 Default emission factors.

(5) Mitigated Emissions assume that watering 3 times per day controls emissions by 61 percent (Uncontrolled Emissions x 0.39).

Appendix A
Bay Area Air Quality Management District
Regulation 2, Rule 5
Air Quality Analysis
Oxidizer Operational Emissions

Pollutant	**VOC**	**CO[(2)]**	**NOx[(3)]**	**SOx**	**PM10**	**PM2.5**	**CO_2**	**N_2O**	**CH_4**	**CO2e**
Emission Factor[(1)]	7.00	0.30	0.04	0.60	7.50	7.50	120000.00	0.64	2.30	120246.70
Emission Factor Units	lb/mmscf	lb/mmbtu	lb/mmbtu	lb/mmbtu	lb/mmscf	lb/mmscf	lb/mmscf	lb/mmscf	lb/mmscf	lb/mmscf
Heater Duty mmbtu/hr	3.00	3.00	3.00	3.00	3.00	3.00	2.00	2.00	2.00	2.00
Operational Time (hr/day)	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
Daily Emissions (lb)	**0.48**	**21.31**	**2.63**	**0.04**	**0.51**	**0.51**	**5485.71**	**0.03**	**0.11**	**5496.99**
Annual Emissions (tons)	**0.09**	**3.89**	**0.48**	**0.01**	**0.09**	**0.09**	**908.23**	**0.00**	**0.02**	**910.10**

(1) Default emission factors for natural gas combustion for external combustion sources. SCAQMD Annual Emissions Reporting.

(2) Based on 400 ppm.

(3) Based on 30 ppm.

Appendix A
Bay Area Air Quality Management District
Regulation 2, Rule 5
Air Quality Analysis
Construction Emission Summary[(1)]

Control Measure	Projects/Year	Days	VOC	CO	NOx	SOx	PM10	PM2.5
DPF	7	3	0.33	2.39	1.95	0.00	0.20	0.17
Enclosures	3	239	1.56	14.08	17.61	0.04	1.63	1.22
Oxidizers	5	21	0.03	0.35	0.45	0.00	0.15	0.05
Total			**1.92**	**16.81**	**20.01**	**0.05**	**1.98**	**1.45**
BAAQMD CEQA Thresholds			**54**	**NE**	**54**	**NE**	**82**	**54**
Significant?			**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

(1) Reported in tons per year.

Appendix A
Bay Area Air Quality Management District
Regulation 2, Rule 5
Air Quality Analysis
Operational Emission Summary[(1)]

Equipment	**VOC**	**CO**	**NOx**	**SOx**	**PM10**	**PM2.5**	**CO2e[(2)]**
Construction (Amortized)	NA	NA	NA	NA	NA	NA	32.38
Diesel Particulate Filters	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Enclosures	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oxidizers	0.09	3.89	0.48	0.01	0.09	0.09	910.10
Total	**0.09**	**3.89**	**0.48**	**0.01**	**0.09**	**0.09**	**942.47**
BAAQMD Threshold	10.00	NE	10.00	NE	15.00	10.00	10000.00
Significant?	**NO**	**NA**	**NO**	**NA**	**NO**	**NO**	**NO**

(1) Reported in tons per year.

(2) Reported in tonnes per year.