



BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

BAAQMD
Regulation 11, Rule 18
Implementation Procedures

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Regulation 11, Rule 18 Implementation Procedures

1. Introduction

The Air District's Regulation 11, Rule 18, Reduction of Risk from Air Toxic Emissions at Existing Facilities, requires existing facilities to reduce health risks below the risk action levels specified in Regulation 11-18-218. Screening and conducting health risk assessments for impacted facilities will occur in two phases. Phase I facilities have risk action levels defined by Section 11-18-218.1, which became effective upon rule adoption on November 15, 2017. Phase I risk action levels apply to sites with the highest potential health impacts. Phase II facilities have risk action levels defined by Section 11-18-218.2, which will become effective on January 1, 2020. Phase II risk action levels will apply to all remaining sites that have the potential to result in a health impact above a risk reduction threshold.

Facilities that are subject to Rule 11-18 must submit and implement a risk reduction plan, pursuant to Regulation 11-18-301 and 11-18-404, within the time frames specified in Regulations 11-18-403 and 11-18-405. A subject facility that cannot feasibly reduce health impacts below the risk action levels must demonstrate that best available retrofit control technology for toxics, or TBARCT, has been or will be installed on all significant sources.

Rule 11-18 is a health risk-based rule. As described in Regulation 11-18-403, a facility becomes subject to the risk reduction requirements in Rule 11-18 after the Air District notifies the site that an APCO-approved Health Risk Assessment (HRA) has resulted in a facility health risk of equal to or greater than a Section 11-18-218 risk action level. Thus, the Air District must determine which facilities are required to undergo site-wide HRAs and then conduct and approve these HRAs, before Rule 11-18 applicability can be assessed.

This document describes the procedures the Air District will follow to:

- identify facilities that are subject to site-wide health risk assessment,
- assess health impacts for these facilities, and
- implement risk reduction requirements for facilities subject to Rule 11-18.

Updated implementation schedules for Phase I and Phase II facilities are attached in Appendix A.

1.1 Background on Air Toxics Programs

The Air District has been working to reduce air toxics emissions from stationary sources for more than thirty years. In addition to adopting and implementing regulations targeting specific toxic air contaminants and specific source types, the Air District began evaluating health risks from stationary source facilities and new or modified projects at these facilities in the early 1990's. In 2005, the Air District adopted Regulation 2, Rule 5 to implement the Air District's new source review limitations for stationary sources of toxic air contaminants (TACs).

Although health risks from ambient air toxics have declined significantly during the last thirty years, some communities in the Air District continue to have elevated risk levels. Regulation 11, Rule 18, Reduction of Risk from Air Toxic Emissions at Existing Facilities, was adopted pursuant to the Air District's authority to regulate and control toxic air contaminant emissions from stationary sources. Rule 11-18 is the next step in the Air District's efforts to protect public health from toxic air pollution. Rule 11-18 will focus on reducing risk from facilities that have the highest local health impacts.

1.2 Public Engagement

Rule 11-18 will support the Air District's mission to create a healthy breathing environment for every Bay Area resident. The Air District recognizes the public's desire to understand local health impacts due to air pollution in their communities and to be engaged in the process of reducing these health impacts. To meet these public expectations, the Air District will:

- Publish educational information about toxic emission inventories, health impacts due to toxic emissions, and the Air District's health risk assessment process;
- Create a web page that identifies potentially subject facilities and informs the public about the status and results of the Air District's review of individual sites; and
- Provide opportunities for public review and comment on site-specific health risk assessment results and risk reduction plans.

In addition, the Air District will create a Rule 11-18 Implementation Workgroup consisting of members of the affected communities, affected industry, and Air District staff. This Workgroup will provide additional opportunities for the public to inform the Air District about concerns regarding the Rule 11-18 implementation process and for the public to work with the Air District and industry to improve public health in affected communities.

2. Purpose

The main purpose of this document is to describe the procedures the Air District will follow to implement Regulation 11, Rule 18. These procedures are presented in Section 4 of this document.

Rule 11-18 applicability is determined based on the results of a District-approved facility-wide health risk assessment (HRA). This document will describe the criteria the Air District will use to determine which facilities must undergo a facility-wide HRA. Facilities may want to review and update their toxic emissions and other input data that will be used to determine whether a site must undergo HRA. This document describes this emissions and data review and update process. It is the Air District's intention to use the most accurate toxic emissions data available.

Once the Air District has determined that a site must undergo HRA, the HRA must be conducted in accordance with Air District HRA Guidelines. This document will describe the procedures the Air District or consultants must follow to ensure that the HRA is conducted appropriately and that the HRA report contains sufficient information to implement Rule 11-18. Facilities will have an opportunity to review and comment on their site's HRA. In addition, HRAs will be made available for public review prior to final Air District approval. This document will describe the facility and public review processes for the HRAs and the Air District's HRA approval criteria.

After the Air District has approved an HRA, the Air District will assess Rule 11-18 applicability based on the Regulation 11-18-218 Risk Action Levels. The Air District will notify a site if it is subject to Rule 11-18. This notification triggers the Risk Reduction Plan (RRP) requirements in Sections 11-18-301, 11-18-403, and 11-18-404. This document describes the Air District review and approval procedures and public review and comment procedures for Rule 11-18 RRs.

During the toxic emissions inventory review and correction process, health risk assessment process, or risk reduction plan approval process, it is possible that disputes may arise concerning specific procedures or assumptions used for a site or an individual source or conclusions reached regarding appropriate control technology. The Air District will make all reasonable attempts to resolve such disputes. However, if the parties reach an impasse, the matter can be referred to an independent Dispute Resolution Panel. Section 5 of this document describes this Dispute Resolution Panel and outlines the general expectations and procedures for this panel.

The Air District will also create a Rule 11-18 Implementation Workgroup to keep affected communities and industry informed about these procedures and the status of the Rule 11-18 implementation steps. The Rule 11-18 Implementation Workgroup is discussed in Section 6.

3. Definitions

Many terms or phrases that are used in this document are defined in Regulation 11, Rule 18. For convenience, these rule definitions are included below. Additional terms or phrases used in this document are defined below in Section 3.2.

3.1 Rule 11-18 Definitions

- 11-18-201 Acute Hazard Index, or Acute HI:** Acute hazard index is the sum of the individual acute hazard quotients for toxic air contaminants identified as affecting the same target organ or organ system.
- 11-18-202 Acute Hazard Quotient, or Acute HQ:** Acute hazard quotient is the ratio of the estimated short-term average concentration of the toxic air contaminant to its acute reference exposure level (estimated for inhalation exposure).
- 11-18-203 Airborne Toxic Control Measure, or ATCM:** A recommended method and, where appropriate, a range of methods, established by the California Air Resources Board (CARB) pursuant to the Tanner Act, California Health and Safety Code Section 39650 *et seq.*, that reduces, avoids, or eliminates the emissions of a toxic air contaminant.
- 11-18-204 Best Available Retrofit Control Technology for Toxics, or TBARCT:** For any existing source of toxic air contaminants, except cargo carriers, the most stringent of the following retrofit emission controls; considering the cost of achieving health risk reductions, any non-air quality health and environmental impacts, and energy requirements; provided that under no circumstances shall the controls be less stringent than the emission control required by any applicable provision of federal, State or District laws, rules, regulations or requirements:
- 204.1 The most effective retrofit emission control device or technique that has been successfully utilized for the type of equipment comprising such a source; or
 - 204.2 The most stringent emission limitation achieved by a retrofit emission control device or technique for the type of equipment comprising such a source; or
 - 204.3 Any retrofit control device or technique or any emission limitation that the APCO has determined to be technologically feasible for the type of equipment comprising such a source; or
 - 204.4 The most stringent retrofit emission control for a source type or category specified as MACT by U.S. EPA, or specified in an ATCM by CARB.
- 11-18-205 Cancer Risk:** An estimate of the chance that an individual may develop cancer as a result of exposure to emitted carcinogens at a given exposed individual location, and considering, where appropriate, Age Sensitivity Factors to account for inherent increased susceptibility to carcinogens during infancy and childhood.
- 11-18-206 Chronic Hazard Index (HI), or Chronic HI:** Chronic hazard index is the sum of the individual chronic hazard quotients for toxic air contaminants identified as affecting the same target organ or organ system.
- 11-18-207 Chronic Hazard Quotient (HQ), or Chronic HQ:** Chronic hazard quotient is the ratio of the estimated annual average exposure of the toxic air contaminant to its chronic reference exposure level (estimated for inhalation and non-inhalation exposures).
- 11-18-208 Exposed Individual (EI):** A person who is exposed to TACs emitted from a toxic risk facility. Exposed individual includes a resident, student, or worker who is not an employee of or a contractor for the toxic risk facility.
- 11-18-209 Facility:** Any property, real or personal, which may incorporate one or more plants all being operated or maintained by a person as part of an identifiable business on contiguous or adjacent property, and shall include, but not be limited to manufacturing plants, refineries, power generating plants, ore processing plants, construction material processing plants, automobile assembly plants, foundries and waste processing sites.

- 11-18-210 Gasoline Dispensing Facility (GDF):** Any stationary operation that dispenses gasoline directly into the fuel tanks of motor vehicles. This facility shall be treated as a single source which includes all necessary equipment for the exclusive use of the facility, such as nozzles, dispensers, pumps, vapor return lines, plumbing and storage tanks.
- 11-18-211 Health Risk:** The potential for adverse human health effects resulting from exposure to emissions of toxic air contaminants and ranging from relatively mild temporary conditions, such as eye or throat irritation, shortness of breath, or headaches, to permanent and serious conditions, such as birth defects, cancer or damage to lungs, nerves, liver, heart, or other organs. Measures of health risk include cancer risk, chronic hazard index, and acute hazard index.
- 11-18-212 Health Risk Assessment, or HRA:** An analysis that estimates the potential for increased likelihood of health risk for individuals in the affected population that may be exposed to emissions of one or more toxic air contaminants, determined in accordance with Rule 2-5, Section 2-5-603.
- 11-18-213 Maximally Exposed Individual (MEI):** A person that may be located at the exposed individual location where the highest exposure to toxic air contaminants emitted from a given source or project is predicted, as shown by an APCO-approved HRA. MEI locations are typically determined for maximum cancer risk, chronic hazard index and acute hazard index based on exposure to residents, workers, and students.
- 11-18-214 Maximum Achievable Control Technology, or MACT:** An emission standard promulgated by U.S. EPA pursuant to Section 112(d) of the Clean Air Act.
- 11-18-215 Owner/Operator:** Any person who owns, leases, operates, controls, or supervises a facility, building, structure, installation, or source which directly or indirectly results or may result in emissions of any air pollutant.
- 11-18-216 Prioritization Score:** The relative potential for health impacts from a facility based on the amount of TACs emitted from the facility, the relative toxicity of the TACs emitted, the proximity of the facility to exposed individuals and exposure factors for different types of exposed individuals. The methodology for determining a facility's prioritization score is located in Appendix A to this rule.
- 11-18-217 Priority Community:** A geographic area where levels of toxic air contaminants are higher than other areas and where people may be particularly vulnerable and may bear disproportionately higher adverse health effects.
- 11-18-218 Risk Action Level**
- 218.1 Before January 1, 2020, any of the following health risk levels:
- 1.1 A cancer risk of 25 per million (25/M); or
 - 1.2 A chronic hazard index of 2.5; or
 - 1.3 An acute hazard index of 2.5.
- 218.2 Effective January 1, 2020, except as provided in Section 11-18-402, any of the following health risk levels:
- 2.1 A cancer risk of 10 per million (10/M); or
 - 2.2 A chronic hazard index of 1.0; or
 - 2.3 An acute hazard index of 1.0.
- 11-18-219 Risk Reduction Plan or Plan:** A document meeting the requirements of Section 11-18-404 that identifies, among other things, sources, quantities, and causes of emissions responsible for exceedance of any of the risk action levels set forth in Section 11-18-221 and details risk reduction measures that will be implemented to reduce risk.
- 11-18-220 Risk Reduction Measures:** Practices that reduce toxic air contaminant emissions or that reduce health risks at the facility being evaluated, including changes to production processes, feedstocks, product formulations, emission point locations, emissions capture and dispersion mechanisms, and the installation of TBARCT or other control devices.
- 11-18-221 Significant Risk Threshold:** Any of the following toxic health risk levels:
- 221.1 A cancer risk of 1.0 per million (1.0/M); or
 - 221.2 A chronic hazard index of 0.20; or
 - 221.3 An acute hazard index of 0.20.

- 11-18-222 Significant Source:** A source of toxic air contaminants or health risk that poses a risk equal to or greater than a significant risk threshold at any MEI location at which all sources at the facility, taken together, pose a health risk equal to or greater than a risk action level.
- 11-18-223 Source:** Any article, machine, equipment, operation, contrivance or related groupings of such that may produce and/or emit air pollutants.
- 11-18-224 Stationary Diesel-Fueled, Compression-Ignited Engine:** An internal combustion engine with operating characteristics significantly similar to the theoretical diesel combustion cycle that is operated, or intended to be operated, at a specific site for more than one year or is attached to a foundation at that site.
- 11-18-225 Toxic Air Contaminant or TAC:** An air pollutant that may cause or contribute to an increase in mortality or in serious illness or that may pose a present or potential hazard to human health. For the purposes of this rule, TACs consist of the substances listed in Table 2-5-1 Toxic Air Contaminant Trigger Levels in Regulation 2, Rule 5.
- 11-18-226 Toxic Risk Facility:** Any facility that manufactures, formulates, uses, or releases any toxic air contaminant or any other substance that reacts to form a TAC.
- 11-18-227 Unreasonable Economic Burden:** When the annualized cost of compliance (the sum of the annual operating cost and annualized capital costs) exceeds ten percent of the annual profits of a facility or one percent of the annual operational budget of a non-profit facility.

3.2 Additional Definitions and Acronyms

CAPCOA means California Air Pollution Control Officers Association

CARB means California Air Resources Board

High-Priority Facility means any facility that has a prioritization score of 10 or higher. High-priority facilities are potentially subject to Regulation 11, Rule 18, unless the facility meets one of the exemption criteria in Regulation 11, Rule 18, Sections 103 or 104.

Notified Subject Facility means a facility that has been notified in writing that it is subject to the requirements of Regulation 11, Rule 18.

OEHHA means Office of Environmental Health Hazard Assessment

Potentially Subject Facility means a facility that may be subject to Regulation 11, Rule 18. The Air District will conduct a detailed review of the toxic air contaminant emissions inventory for this site and may conduct a health risk assessment for this site to assess the applicability of Rule 11-18 requirements.

Prioritization Scores are conservative screening tools used to rank the relative potential for health impacts from different facilities based on the amount of toxic air contaminants (TACs) emitted from a facility, the relative toxicity of the TACs emitted, and the proximity of the facility to possible receptors. The Air District evaluates three categories of health impacts: cancer risk, chronic non-cancer impacts, and acute non-cancer impacts. A prioritization score may be calculated for each of these different types of health impacts. The prioritization score for a site is the maximum of either the cancer risk prioritization score or the chronic non-cancer prioritization score.

PAF means Proximity Adjustment Factor. A PAF is a multiplication factor that is used in the calculation of a prioritization score for a site. PAFs represent the potential reduction in ground level concentration of a toxic air contaminant that may occur at increasing distances from the site emitting the toxic air contaminant. Proximity adjustment factors are determined in accordance with CAPCOA procedures based on the distance from the site to the nearest residence or off-site worker.

REL means Reference Exposure Level

Unadjusted Prioritization Scores means a prioritization score that does not include a PAF.

4. Procedures

This document describes the procedures the Air District will follow to implement Regulation 11, Rule 18. There are three major steps required to implement this rule:

- identify facilities that are potentially subject to Rule 11-18 that require an HRA,
- assess health impacts resulting from toxic emissions from potentially subject facilities, and
- implement Rule 11-18 requirements for facilities subject to Rule 11-18.

The first two steps are necessary to determine which facilities are subject to Rule 11-18, and these steps require an accurate toxic emissions inventory for Air District decisions. The adoption of Rule 11-18 and other recent state legislation (AB 197 and AB 617) has resulted in a renewed emphasis on improving the Air District's toxic emissions inventory data. Many facilities have requested to review and update their toxic emissions inventory data and other facility information that will be used for Air District decisions during these first two steps. The Air District concurs that a current and accurate toxic emissions inventory is a key consideration for this process. Therefore, inventory and facility data improvements have been incorporated into the procedures below.

The final step of this process is the implementation of Rule 11-18 requirements. This stage of the process includes the submittal, review, approval, and implementation of risk reduction plans. Procedures and criteria for these steps are listed below.

4.1 Identify Potentially Subject Facilities

For implementation of Rule 11-18, the Air District is using "prioritization scores" to determine which sites have the potential to result in significant health risks. Prioritization Scores and the thresholds for further actions are discussed in Section 4.1.1 below.

During development of Rule 11-18, the Air District evaluated prioritization scores for all sites and developed a list of potentially subject facilities. The Air District re-evaluated

prioritization scores for all facilities in 2018 and in 2020 and developed updated lists of potentially subject facilities that will need to undergo the next steps in this review process, as described below. The list of potentially subject facilities was split into Phase I and Phase II sites according to the thresholds in Table 2 below. Phase I sites are identified in Appendix B. Phase II sites are identified in Appendix C.

The Air District will annually review prioritization scores for all facilities in the future to ensure that any new sites or changes to existing sites are included in the appropriate review phase.

The Air District began the emissions inventory and HRA data review process for Phase I facilities in April 2018 by notifying sites of their status and obligations and providing current toxic emissions and other facility data. The Air District requested that facilities review this data and provide any proposed corrections and missing information. This data review and correction process will begin for Phase II sites in 2020 and will continue until all high-priority facilities have been reviewed. In the future, any changes to a high-priority facility may prompt a re-evaluation of Rule 11-18 applicability. The toxic emissions inventory review and correction process is described in Section 4.1.2.

4.1.1 Prioritization Score Thresholds:

Prioritization scores represent the relative potential for health impacts from a facility based on the amount of toxic air contaminants (TACs) emitted from a facility, the relative toxicity of the TACs emitted, and the proximity of the facility to possible receptors, which is represented by a proximity adjustment factor. The Air District uses prioritization scores to rank facilities based on health impact potential and to determine when facilities should undergo further review.

The Air District's Prioritization Score Procedures were updated in March 2017 and are available on the web site at:

http://www.baaqmd.gov/~media/dotgov/files/rules/regulation-11-rule-18/documents/20171003_priorproc_1118-pdf.pdf?la=en

The Air District's Prioritization Score Procedures are based on the CAPCOA/CARB Air Toxics "Hot Spots" Program Facility Prioritization Guidelines, which are available at:

<http://www.capcoa.org/wp-content/uploads/2016/08/CAPCOA%20Prioritization%20Guidelines%20-%20August%202016%20FINAL.pdf>

Prioritization scores are a conservative screening tool that districts may use to decide when additional review of a site emitting toxics may be warranted. In addition to prioritization scores, districts consider the following factors:

- population density near the facility
- proximity of sensitive receptors to the facility
- receptor proximity less than 50 meters
- elevated receptors/complex terrain

- frequency of nuisance violations
- importance of non-inhalation pathway for substance(s) emitted by the facility
- presence of non-stack (fugitive) emissions

The Air District has found that many facilities in the Bay Area have high population densities nearby, receptors within 50 meters, complex terrain, significant fugitive toxic emissions, or non-inhalation pathway emissions. Proximity adjustment factors¹, which are used in the calculation of prioritization scores, may not be appropriate for sites that have one or more of these site-specific conditions. Therefore, the Air District will consider these site-specific factors when the Air District is evaluating the use of proximity adjustment factors to calculate adjusted prioritization scores for a site. In general, the need for a new or updated site-wide HRA will be based on unadjusted prioritization scores (prior to application of proximity adjustment factors), unless the Air District determines that it is appropriate to use proximity adjustment factors for an individual site.

Regulation 11, Rule 18 Sections 103 and 104 contain exemptions from Rule 11-18 requirements for sites that have specific source types and prioritization scores. Under Section 103, any site that only has emergency-use stationary diesel engines and that has a prioritization score of less than 250 is exempt from Rule 11-18. The Air District is considering adoption of source-specific health risk reduction requirements for emergency use diesel engines that would apply to these sites instead of Rule 11-18. Therefore, the Air District decided that Rule 11-18 will not apply to emergency diesel engine sites unless the site has a very high potential for health risks. Under Section 104, any site that consists of only a retail gasoline dispensing facility (GDF) and that has a prioritization score of less than 250 is also exempt from Rule 11-18. CARB is currently updating toxic emission factors for gasoline dispensing facilities and is planning to develop new risk assessment guidelines for GDFs. The Air District decided to exempt GDFs from Rule 11-18 while these updates are in progress, unless the site has a very high potential for health risks.

For all other types of facilities, any site with a prioritization score less than 1.0 will be considered a low priority facility. Since the prioritization score procedure is based on conservative assumptions, a prioritization score of less than 1.0 indicates that a facility is unlikely to result in significant health impacts and would not warrant further control under Rule 11-18. Therefore, a health risk assessment is not necessary for a site with a prioritization score less than 1.0, and these sites will not be subject to Rule 11-18 requirements.

¹ Proximity adjustment factors were developed based on the assumption that a toxic air contaminant is being emitted from a stack and disperses through the atmosphere in a simple manner. Pollutants will disperse differently at sites that have close receptors or complex terrain or if emissions are fugitive in nature instead of being emitted from a stack. To ensure that the prioritization score is conservative, proximity adjustment factors should not be used to calculate the prioritization score when one or more of these conditions is present at a site.

Table 1. Rule 11-18 Exemptions

		Prioritization Score	Rule 11-18 Applicability
Site with only emergency use stationary diesel engines	AND	< 250	Not Subject to Rule 11-18
Site that is a retail gasoline dispensing facility	AND	< 250	Not Subject to Rule 11-18
All other types of sites	AND	< 1.0	Not Subject to Rule 11-18

Any sites that are not retail gasoline dispensing facilities and that contain sources other than emergency diesel engines (EDE) and that have a prioritization score of 1.0 or higher are potentially subject to Rule 11-18.

The Air District determined that any facility with a cancer risk prioritization score of 10 or higher or a chronic non-cancer prioritization score of 1 or higher should undergo an updated HRA using OEHHA's newest HRA Guidelines to determine if Rule 11-18 is applicable to that site. Since the use of proximity adjustment factors may not be appropriate for some sites, the Air District will initially review all sites with an unadjusted prioritization score of 10 or higher. The unadjusted prioritization score is the score that is calculated before the proximity adjustment factor is applied. Proximity adjustment factors will be retained for this applicability determination, if the Air District finds that none of CAPCO/CARB's further consideration factors described previously apply to the site under review. The Air District will subsequently review sites with a prioritization score between 1 and 10 to determine if any of these sites have a chronic prioritization score of 1.0 or higher.

To ensure that most sites with the highest potential for health risks are evaluated first, the Air District included sites with an unadjusted cancer risk prioritization score of 250 or higher and sites with an unadjusted chronic hazard index of 10 or higher in the first phase (Phase I) of facility reviews. HRA results for these Phase I sites will be compared to the applicable risk action levels in Regulation 11-18-218. Facilities with an unadjusted cancer risk prioritization score of 10-250 or a chronic prioritization score of 1 or higher will be included in the second phase (Phase II) of facility reviews. HRA results for these Phase II sites will be compared to the risk action levels in Regulation 11-18-218.2.

Prioritization score thresholds and associated actions for non-exempt sites are summarized in Table 2 below.

Table 2. Prioritization Score Thresholds and Rule 11-18 Applicability Determinations

Site Type	Cancer Risk Prioritization Score		Chronic Prioritization Score	Next Steps to Determine Rule 11-18 Applicability
GDF only or EDE only	≥ 250	OR	≥ 250	Site Wide HRA Required / Phase I: 11-18-218.1 (before 1/1/2020) and 11-18-218.2 (after 1/1/2020)
All Other Site Types	≥ 250	OR	≥ 10	Site Wide HRA Required / Phase I: 11-18-218.1 (before 1/1/2020) and 11-18-218.2 (after 1/1/2020)
All Other Site Types	≥ 10 and < 250	OR	> 1.0 and < 10	Site Wide HRA Required / Phase II: 11-18-218.2
All Other Site Types	< 10	AND	< 1.0	No Site-Wide HRA / Not Subject to Rule 11-18

4.1.2 Inventory Review and Correction Process

The Air District maintains and annually updates a toxic emissions inventory for each facility. This inventory estimates annual emissions (in units of pounds per year) of each toxic air contaminant emitted from the facility. The Air District's toxic emission inventory is intended to conform with Air Toxic Hot Spots Act reporting requirements. It represents actual annual emissions, rather than maximum potential or maximum permitted annual emission levels, from routine and predictable sources of emissions at the facility other than emissions from motor vehicles.

The Air District's toxic emissions inventory is produced using throughput rate data or other appropriate usage or operating information that is updated on an annual basis, toxic air contaminant emission factors and abatement factors stored in a database, and emission calculation algorithms specific to each source type.² The necessary data for each source is collected and entered into the Air District's database during the permit application process. For example, a boiler burning natural gas would have a set of toxic emission factors that would include the pounds of formaldehyde generated per therm of natural gas burned in the boiler. The facility reports the therms of natural gas burned in the boiler each year. The Air District's computer system multiplies the formaldehyde emission factor by the annual reported throughput rate to calculate the amount of formaldehyde generated at that boiler during the previous year. Sources equipped with

² Petroleum refineries and support facilities must report emissions including emissions of toxic air contaminants pursuant to the requirements and procedures in Regulation 12, Rule 15.

emission control devices would also have abatement factors that are incorporated into this calculation procedure.

The Air District intends to use the best available toxic emissions inventory data to determine the applicability of Rule 11-18. Since the Air District's toxic emission factors were entered when a source was first permitted and have undergone limited updates since that time, these emission factors may be outdated. The Air District will provide facilities with an opportunity to review and update their toxic emission factors based on source test data or other on-site measurements, updated pooled source test data, new CARB or AP-42 emission factors or other available literature data. The Air District will also review emissions factors and update data where appropriate.

For petroleum refineries, the Air District has developed toxic emission calculation and reporting guidelines pursuant to Regulation 12, Rule 15, which are available on the web site at:

<http://www.baaqmd.gov/permits/permitting-manuals/refinery-emissions-inventory-guidelines>

Air District approved toxic emission inventories reported by subject facilities pursuant to Rule 12-15 will be used in the health risk assessments for these sites.

For other facilities, the Air District is developing updated toxic emissions calculation guidance that will improve the Air District's toxic emission inventories for many source categories. This guidance will generally follow the procedures identified above for petroleum refineries.

In addition to annual emissions, health risk assessments will require maximum 1-hour toxic emissions data. The Air District does not currently maintain short term toxic emissions data. Therefore, sites will be asked to provide maximum 1-hour emissions data for any toxic air contaminants that have acute reference exposure levels. Some of the common TACs that have acute RELs are: ammonia, benzene, 1,3 butadiene, chloroform, formaldehyde, hydrochloric acid, hydrogen sulfide, isopropyl alcohol, mercury compounds, methanol, methyl ethyl ketone, methylene chloride, nickel compounds, nitric acid, perchloroethylene, sulfuric acid, toluene, vinyl chloride, and xylene. See Table 2-5-1 in Regulation 2, Rule 5 for a complete list of TACs with acute RELs.

Prioritizations scores are generally updated on an annual basis. During the first quarter of each calendar year, the Air District will reassess the list of potentially subject facilities. The current lists of Phase I and Phase II facilities are provided in Appendices A and B. Phase I sites and the current review status are identified on the Air District web site at: <https://www.baaqmd.gov/community-health/facility-risk-reduction-program/facility-risk-reduction-list>

In the future, facilities will be added to the web site when the data review process is initiated. The Air District will notify facilities in writing of their status. This notification will

include the most recent toxic emissions inventory data for the site plus information about the facility, source emission rates, and emission point data.

Facilities will be asked to review this data and submit corrected information. If necessary, within 60 days pursuant to the Regulation 11-18-401, Health Risk Assessment (HRA) Information Requirement. Regulation 11-18-401 requires a facility to submit any information that the Air District needs to complete the HRA for that facility. Annual and hourly source-specific toxic emissions inventory data, source and stack locations, stack parameter data, and building parameter data are all necessary for this HRA. Facilities may request additional information from the Air District, such as emission factors, abatement factors, and the basis for the current toxic emissions data, if needed for the site's review process. Facilities may also request additional time to submit the corrected emissions inventory information; however, Regulation 11-18-401 limits the information submittal period to an additional 60 days for a total of 120 days after the initial request.

After receipt of the updated information, the Air District will review the submittal data and notify the site of any deficiencies. If the Air District agrees with the requested data changes, the Air District will make those changes to our inventory and notify the site of the Air District's approval of the updates. The Air District will re-evaluate the site's prioritization score and the next steps based on this corrected District-approved toxic emissions inventory and the thresholds in Table 2.

If the Air District does not agree with a proposed emission factor or toxic emission inventory rate, the Air District will notify the site and attempt to reach agreement with the facility on the appropriate data. If the Air District and the site cannot reach agreement on the toxic emissions inventory, the facility may request that the matter be referred to an independent Dispute Resolution Panel. This panel and its procedures are described in Section 5 below.

Once the Air District has completed this inventory review and correction process for all Phase I sites, the Air District will repeat this process for Phase II sites. The facility data review process for Phase II sites is expected to begin in 2020. Inventory review and correction for additional sites will be conducted as needed after annual prioritization score evaluations.

The Air District will provide updates to the Rule 11-18 Implementation Workgroup regarding the Phase I and Phase II lists of potentially subject facilities and the HRA input data review process.

4.2 Assessing Health Impacts

Rule 11-18 is a health risk-based rule that will require an updated health risk assessment (HRA) for a facility based on the facility's District-approved toxic air contaminant emissions inventory, the toxicity of the materials emitted, and locations of nearby receptors.

The Air District will notify a facility when the facility's District-approved toxic emissions inventory and the resulting prioritization score triggers a facility-wide HRA. Regulation 11-18-401 requires a facility to submit any information that the Air District needs to complete the HRA for that facility. Any additional information needed for the HRA will be requested as part of this notification process. Per 11-18-401, facilities have 60 days to respond to information requests.

Initially, the Air District maintained a list of facilities that were required to undergo health risk assessment and shared this list with the Implementation Workgroup. This information is now available on the Air District web site by searching the action level in the facility tables located at:

<https://www.baaqmd.gov/community-health/facility-risk-reduction-program/facility-risk-reduction-list>

Facilities

SEARCH & FILTERS ▲ Expand to show search or filter options

Search 🔍

Action Level Type

HRA in Progress

Alerts & Comment Opportunities City

County

CLEAR SEARCH & FILTERS

+	Number	Name	Action Level	Type	!
+	11866	Los Medanos Energy Center	HRA in Progress	Power Plant	
+	1257	Genentech, Inc	HRA in Progress	Other	
+	41	Owens Corning Insulating Systems, LLC	HRA in Progress	Manufacturing	
+	4134	Irvington Memorial Cemetery	HRA in Progress	Crematory	
+	62	A B & I Foundry	HRA in Progress	Metal Melting	
+	621	City of Santa Clara	HRA in Progress	Power Plant	

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Items per Page: 10

6 items in 1 pages

4.2.1 Vendors for Health Risk Assessment Services

For Phase I Sites, the Air District will conduct the site-wide HRA and may contract directly with a firm for HRA services. Phase II sites that are not Title V facilities will have the option of using the District HRA or of contracting directly with a firm for HRA services. This process will be periodically reviewed by the Rule 11-18 Implementation Workgroup to determine its effectiveness.

The Air District will maintain and periodically update a list of consultants that have been approved to provide HRA services to the Air District or that are authorized to conduct HRAs for non-Title V facilities. Firms must submit a qualifications proposal to the Air District in response to a Request for Qualifications (RFQ) for HRA Services. The Air District will review qualifications in accordance with a standard set of criteria and will set a minimum qualifications threshold.

For Phase I facilities, the Air District conducted an RFQ review for HRA Services during November 2016 through January 2017 and identified the following firms as authorized HRA vendors:

- Environment Audit, Inc.
- Ramboll Environ, Inc.
- Environmental Science Associates
- Trinity Consultants
- ICF Resources
- MRS Environmental, Inc.

The Air District expects to issue a Request for Proposal (RFP) for HRA Services for specific individual facilities or groups of like facilities after the Air District conducts the emissions inventory review and confirms the list of Phase I sites that need to undergo a site wide HRA. As with the RFQ, the RFP will identify the criteria that must be met for a vendor to conduct an HRA for a specific individual facility or group of facilities, including having no conflict of interest for a Phase I site.

For Phase II facilities, the Air District anticipates issuance of another RFQ for HRA vendors, prior to initiation of the emissions inventory review steps, and issuance of another RFP, once the list of Phase II sites requiring HRAs is confirmed. Specific criteria for Phase II vendors will be established later.

The list of sites subject to HRA will be updated to include the HRA vendor as these decisions are made. This list will periodically be provided to the Rule 11-18 Implementation Workgroup.

4.2.2 Modeling Protocol for Health Risk Assessments

The Air District has prepared a general HRA modeling protocol that describes how sources will be modeled and how health impacts will be calculated. It is available on the Air District web site at: <https://www.baaqmd.gov/community-health/facility-risk-reduction-program>

For large facilities, the Air District may prepare a site-specific modeling protocol before the HRA is initiated. The site-specific modeling protocol will identify the meteorological station, source of terrain data, and all procedures or assumptions that will be used for modeling this individual site's emissions and calculating the resulting health impacts. The site-specific modeling protocol should include any potential refinement options that may be invoked. The modeling protocol should also identify all site-wide and source risk data that will be reported to ensure that TBARCT applicability can be assessed, if necessary.

If requested, the Air District will provide the site-specific modeling protocol to the facility for a 30-day review period. As with the emissions inventory data, the Air District will attempt to reach concurrence with the facility on this site-specific modeling protocol. If the Air District and the facility reach an impasse, the facility may request to refer the matter to the Dispute Resolution Panel.

4.2.3 Guidelines for Health Risk Assessments

After agreement on the site-specific modeling protocol, the Air District or authorized contractor will conduct the facility-wide HRA. Facility-wide HRAs for Rule 11-18 shall be conducted in accordance with the Air District's December 2016 HRA Guidelines, which are published on the Air District's web site:

http://www.baaqmd.gov/~media/files/planning-and-research/permit-modeling/hra_guidelines_12_7_2016_clean-pdf.pdf?la=en

4.2.4 Review of Health Risk Assessment Results

The Air District will notify the facility of the preliminary HRA results and will hold a 90-day review and comment process with the facility pursuant to Regulation 11-18-403. The Air District will make any necessary corrections or updates to this preliminary HRA.

The Air District will post the draft HRA results on the Air District web-site and will hold a 45-day public review process. The Air District will answer questions and respond to all comments on this draft HRA. The Air District will make any necessary corrections to the HRA and the HRA report.

The Air District will publish the final District-approved HRA on the web site and will identify the facility's Rule 11-18 requirements, if any. The Air District will concurrently notify the facility in writing of these HRA results and any resulting obligations under Rule 11-18.

The Rule 11-18 Implementation Workgroup will be informed of the progress of the HRAs for individual facilities, including time periods when HRAs will be available for public review.

4.3 Implementing Rule 11-18 Requirements

In accordance with Regulation 11-18-403, Notification of HRA Results and Submission of Plan, the Air District will notify the facility, in writing, if the District-approved HRA results meet or exceed a Rule 11-18 risk action level. As defined in Regulation 11-18-218.1, the initial risk action levels are: a cancer risk of 25 per million, a chronic hazard index of 2.5, and an acute hazard index of 2.5, effective upon the adoption date of Rule 11-18. As defined in Regulation 11-18-218.2 and effective January 1, 2020, these risk action levels are reduced to: a cancer risk of 10 per million, a chronic hazard index of 1.0, and an acute hazard index of 1.0. In accordance with Regulation 11-18-403, this notification will trigger the requirement for a facility to submit a draft Risk Reduction Plan within 180 days.

Any facility that receives a Regulation 11-18-403 notification shall prepare a risk reduction plan that meets the requirements of Regulation 11-18-404. The Air District will follow the Regulation 11-18-405 procedures to review and approve draft Plans. Draft Risk Reduction Plans (excluding confidential information) will be posted on the Air District web site for at least 45 days. The Air District will consider any written comments on this draft RRP. If the APCO finds that the draft RRP meets the requirements of 11-18-404, the RRP will be approved. The Air District will post the approved RRP on the web site.

The facility shall demonstrate compliance by implementing the RRP in accordance with the time frames in Section 11-18-404.6 and by submitting Regulation 11-18-501 Progress Reports on an annual basis.

The Air District will maintain a list of sites that are subject to the Rule 11-18 risk reduction plan requirements on the web site and will identify plan review dates, approval dates, and implementation due dates.

5. Dispute Resolution Panel

The Air District will convene a Dispute Resolution Panel (DRP) to resolve disputes that may arise between industry, the public, and the Air District regarding Implementation of Rule 11-18 for a specific facility. The types of matters that this panel will handle include:

toxic air contaminant emission factors, emission calculation techniques, air dispersion modeling, health risk assessments, or TBARCT determinations. The DRP will consist of at least three independent experts³ in the fields of toxic air contaminant inventories, health risk assessment, or air pollution control. Procedures for bringing a dispute to the DRP, panel review procedures, and responses to panel recommendations will be explained in more detail upon formation of this panel.

6. Rule 11-18 Implementation Workgroup

The purpose of the Rule 11-18 Implementation Workgroup is to ensure transparency during the implementation of Rule 11-18. This Workgroup will include members of the affected communities, affected industry, and Air District staff. The Air District will periodically hold Rule 11-18 Implementation Workgroup meetings to explain procedures, answer questions, and inform communities and industry about the status of the emissions inventory reviews, health risk assessments, risk reduction plan reviews, and installation of risk reduction measures. This Workgroup may also inform the Air District about educational or informational needs or public concerns about Rule 11-18 actions.

³ The DRP independent experts will not include current Air District staff but may include retired Air District staff, staff from other air quality agencies, or other persons with acknowledged expertise relevant to the issue in dispute.

APPENDIX A

Rule 11-18 Implementation Schedule

Figure 1: Implementation Schedule for Phase I Facilities

Implementation Steps:	2018				2019				2020				2021				2022				2023 - 2028				
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	23	24	25	26	27
Build Infrastructure																									
1. Classify Facilities																									
2. Validate Inventory and HRA Data																									
3. Conduct Health Risk Assessments																									
4. Approve Risk Reduction Plans																									
5. Implement Risk Reductions																									

12/10/2019

Figure 2: Implementation Schedule for Phase II Facilities

Implementation Steps:	2020				2021				2022				2023				2024				2025				2026 - 2030				
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	26	27	28	29	30
1. Classify Facilities																													
2. Validate Inventory and HRA Data																													
3. Conduct Health Risk Assessments																													
4. Approve Risk Reduction Plans																													
5. Implement Risk Reductions																													

Prioritization Score > 100 (28 Sites)
Prioritization Score > 50 (57 Sites)
Prioritization Score > 10 (203 Sites)

5/11/2020

APPENDIX B

Phase I Facilities

Table 3. Phase I Facilities Under Review (36 Sites)

Facility #	Facility Name	City	County
2246	Tri-Cities Recycling	Fremont	Alameda
4134	Irvington Memorial Cemetery	Fremont	Alameda
2066	Waste Management of Alameda County	Livermore	Alameda
62	A B & I Foundry	Oakland	Alameda
208	Schnitzer Steel Products Company	Oakland	Alameda
194	PCC Structural - San Leandro	San Leandro	Alameda
19746	FXI, Inc	San Leandro	Alameda
11	Shell Martinez Refinery	Martinez	Contra Costa
14628	Tesoro Refining & Marketing Company LLC	Martinez	Contra Costa
22789	Eco Services Operations Corp	Martinez	Contra Costa
24380	Corteva Agriscience	Pittsburg	Contra Costa
227	Criterion Catalysts Company LP	Pittsburg	Contra Costa
2371	USS-POSCO Industries	Pittsburg	Contra Costa
4618	Keller Canyon Landfill Company	Pittsburg	Contra Costa
11866	Los Medanos Energy Center	Pittsburg	Contra Costa
17667	Ameresco Keller Canyon LLC	Pittsburg	Contra Costa
10	Chevron Products Company	Richmond	Contra Costa
23	Chemtrade West US LLC	Richmond	Contra Costa
1840	West Contra Costa County Landfill	Richmond	Contra Costa
17419	Air Liquide Large Industries US LP	Rodeo	Contra Costa
21359	Phillips 66 Company - San Francisco Refinery	Rodeo	Contra Costa
21360	Phillips 66 Carbon Plant	Rodeo	Contra Costa
1179	Redwood Landfill Inc	Novato	Marin
11247	Clover Flat Resource & Recovery Park	Calistoga	Napa
2266	Browning-Ferris Industries of CA, Inc	Half Moon Bay	San Mateo
1257	Genentech, Inc	South San Francisco	San Mateo
17	Lehigh Southwest Cement Company	Cupertino	Santa Clara
11531	Z-Best Composting Facility	Gilroy	Santa Clara
9013	International Disposal Corp of CA	Milpitas	Santa Clara
1812	Kirby Canyon Recycling and Disposal Facility	Morgan Hill	Santa Clara
2721	City of Palo Alto Landfill	Palo Alto	Santa Clara
41	Owens Corning Insulating Systems, LLC	Santa Clara	Santa Clara
621	City of Santa Clara	Santa Clara	Santa Clara
12626	Valero Refining Company – California	Benicia	Solano
148	Ball Metal Beverage Container Corp	Fairfield	Solano
22987	Republic Services of Sonoma County, Inc	Petaluma	Sonoma

APPENDIX C

Phase II Facilities

Table 4. Phase II Facilities with Prioritization Score Greater than 100 (28 Sites)

Facility #	Facility Name	City	County
59	University of California, Berkeley	Berkeley	ALAMEDA
255	Lawrence Livermore National Laboratory	Livermore	ALAMEDA
591	East Bay Municipal Utility District	Oakland	ALAMEDA
1067	Oro Loma Sanitary District	San Lorenzo	ALAMEDA
907	Central Contra Costa Sanitary District	Martinez	CONTRA COSTA
16818	Gradetech Inc	Pittsburg	CONTRA COSTA
935	Levin Richmond Terminal Corporation	Richmond	CONTRA COSTA
1275	Novato Sanitary District	Novato	MARIN
3273	Pacific Union College	Angwin	NAPA
7101	Napa Sanitation District – Soscol	Napa	NAPA
9183	Napa-Vallejo Waste Management Authority	Napa	NAPA
1784	San Francisco International Airport	San Francisco	SAN FRANCISCO
2478	UCSF/Parnassus	San Francisco	SAN FRANCISCO
1000	Seton Medical Center	Daly City	SAN MATEO
3011	IPT SRI Cogeneration Inc	Menlo Park	SAN MATEO
3499	City of Menlo Park	Menlo Park	SAN MATEO
1534	Silicon Valley Clean Water	Redwood City	SAN MATEO
18604	Apple, Inc	Cupertino	SANTA CLARA
550	NASA-AMES Research Center	Mountain View	SANTA CLARA
450	Veterans Administration Medical Center	Palo Alto	SANTA CLARA
617	Palo Alto Regional Water Quality Control Plant	Palo Alto	SANTA CLARA
778	San Jose-Santa Clara Regional Wastewater Facility	San Jose	SANTA CLARA
3211	Santa Teresa Water Treatment Plant - STWTP	San Jose	SANTA CLARA
3464	City of Santa Clara	Santa Clara	SANTA CLARA
1404	Fairfield-Suisun Sewer District	Fairfield	SOLANO
2039	Potrero Hills Landfill, Inc	Suisun City	SOLANO
770	Travis AFB	Travis AFB	SOLANO
13348	Medtronic Vascular	Santa Rosa	SONOMA

Table 5. Phase II Facilities with Prioritization Score Between 50 and 100 (57 Sites)

Facility #	Facility Name	City	County
3590	City of Berkeley/Engr Div/Public Works	Berkeley	ALAMEDA
1009	Hayward Waste Water Treatment Plant	Hayward	ALAMEDA
18136	Russell City Energy Co, LLC	Hayward	ALAMEDA
19918	Apex Envirotech, Inc	Hayward	ALAMEDA
22268	Nor-Cal Rock Inc	Hayward	ALAMEDA
23375	Meridan Aviation Inc dba Meridian Hayward	Hayward	ALAMEDA
281	U S Veterans Administration Medical Center	Livermore	ALAMEDA
3335	Valley Memorial Hospital	Livermore	ALAMEDA
5095	Republic Services Vasco Road, LLC	Livermore	ALAMEDA
1785	Childrens Hospital, Oakland	Oakland	ALAMEDA
1371	Dublin San Ramon Services District - Wastewater TP	Pleasanton	ALAMEDA
12728	Waste Management Inc	San Leandro	ALAMEDA
20428	Kaiser Hospital	San Leandro	ALAMEDA
1209	Union Sanitary District	Union City	ALAMEDA
3256	Turk Island Solid Waste Disposal Site	Union City	ALAMEDA
1258	Delta Diablo Sanitation District	Antioch	CONTRA COSTA
12967	TRC	Antioch	CONTRA COSTA
18143	Gateway Generating Station	Antioch	CONTRA COSTA
15476	Saint Mary's College of California	Moraga	CONTRA COSTA
12095	Delta Energy Center	Pittsburg	CONTRA COSTA
1271	West County Wastewater District	Richmond	CONTRA COSTA
1345	Sewerage Agency of South Marin	Mill Valley	MARIN
17052	BioMarin Pharmaceutical Inc	Novato	MARIN
653	Central Marin Sanitation Agency	San Rafael	MARIN
1082	Queen of the Valley Medical Center	Napa	NAPA
1634	Napa State Hospital	Napa	NAPA
51	United Airlines, Inc	San Francisco	SAN FRANCISCO
3974	San Francisco General Hospital	San Francisco	SAN FRANCISCO
6496	Golden Gate Bridge, Highway & Transportation Distr	San Francisco	SAN FRANCISCO
13160	University of California SF	San Francisco	SAN FRANCISCO
5691	Sunquest Properties Inc	Brisbane	SAN MATEO
2227	Mills Peninsula Medical Center	Burlingame	SAN MATEO
17040	Ameresco Half Moon Bay LLC	Half Moon Bay	SAN MATEO
1462	Veterans Administration Medical Center	Menlo Park	SAN MATEO
19243	General Service Administration	Menlo Park	SAN MATEO
861	San Mateo Water Quality Control Plant	San Mateo	SAN MATEO
5876	South San Francisco-San Bruno Water Quality Plant	South San Francisco	SAN MATEO
12183	Metcalf Energy Center	Coyote	SANTA CLARA
639	Stanford University	Palo Alto	SANTA CLARA
475	Santa Clara Valley Health & Hospital System	San Jose	SANTA CLARA
3294	Guadalupe Rubbish Disposal	San Jose	SANTA CLARA
4020	SFPP, LP	San Jose	SANTA CLARA
9339	San Jose State University	San Jose	SANTA CLARA
13367	San Jose International Airport	San Jose	SANTA CLARA
632	Intel Corporation	Santa Clara	SANTA CLARA

Facility #	Facility Name	City	County
9010	California Paperboard Corporation	Santa Clara	SANTA CLARA
3969	Stanford Health Care	Stanford	SANTA CLARA
55	Lockheed Martin Corporation	Sunnyvale	SANTA CLARA
1995	Solano County Facilities Operations	Fairfield	SOLANO
7958	Bubbling Well Pet Memorial Park, Inc	Fairfield	SOLANO
12848	David Grant Medical Center	Travis AFB	SOLANO
3670	Kaiser Foundation Hospital	Vallejo	SOLANO
1941	Sonoma Developmental Center	Eldridge	SONOMA
1810	Sonoma State University	Rohnert Park	SONOMA
1403	Santa Rosa Water - Laguna Treatment Plant	Santa Rosa	SONOMA
8188	Wheeler & Zamaroni Landscape Supplies	Santa Rosa	SONOMA
1228	Sonoma County Water Agency	Sonoma	SONOMA

Table 6. Phase II Facilities with Prioritization Score Between 10 and 50

Facility #	Facility Name	City	County
1500	Northern Calif Power Agency	Alameda	ALAMEDA
17456	Peet's Coffee and Tea Inc	Alameda	ALAMEDA
123	Berkeley Asphalt Co	Berkeley	ALAMEDA
723	Lawrence Berkeley National Laboratory	Berkeley	ALAMEDA
4449	Electro-Coatings of California Inc	Berkeley	ALAMEDA
12071	Bayer US LLC	Berkeley	ALAMEDA
24270	Sutter Bay Hospitals dba Alta Bates Summit Med Ctr	Berkeley	ALAMEDA
5148	Castro Valley Crematory Inc	Castro Valley	ALAMEDA
8996	Alameda County GSA	Dublin	ALAMEDA
23854	TRT NOIP LP Dublin	Dublin	ALAMEDA
8227	Pacific Interment Service	Emeryville	ALAMEDA
15464	Pixar Animation Studios	Emeryville	ALAMEDA
22209	Novartis Institutes for BioMedical Research, Inc	Emeryville	ALAMEDA
22285	Grifols Diagnostic Solutions, Inc	Emeryville	ALAMEDA
24072	Equity Office Properties	Emeryville	ALAMEDA
792	Washington Hospital	Fremont	ALAMEDA
3152	Lam Research Corporation - Fremont Campus	Fremont	ALAMEDA
9653	Kaiser Permanente Medical Center	Fremont	ALAMEDA
13062	Sysco San Francisco, Inc	Fremont	ALAMEDA
15565	Western Digital Corporation	Fremont	ALAMEDA
20459	Tesla, Inc	Fremont	ALAMEDA
22881	Tesla, Inc	Fremont	ALAMEDA
2099	St Rose Hospital	Hayward	ALAMEDA
3576	Catholic Cremation Services	Hayward	ALAMEDA
8399	Chapel of the Chimes Memorial Park	Hayward	ALAMEDA
17553	Rohm and Haas Chemicals LLC	Hayward	ALAMEDA
23038	Baxter Healthcare Inc	Hayward	ALAMEDA
3314	Roselawn Cemetery	Livermore	ALAMEDA
16254	Mako Industries	Livermore	ALAMEDA
20432	Ameresco Vasco Road LLC	Livermore	ALAMEDA
678	Port of Oakland	Oakland	ALAMEDA
1529	Kaiser Permanente Medical Center	Oakland	ALAMEDA
3786	Chapel of the Chimes	Oakland	ALAMEDA
6390	Evergreen Cemetery	Oakland	ALAMEDA
23711	USPA City Center LLC c/o Harvest Properties	Oakland	ALAMEDA
23837	Triple A Roasters	Oakland	ALAMEDA
24259	Sutter Bay Hospitals	Oakland	ALAMEDA
24269	Sutter Bay Hospitals dba Alta Bates Summit Med Ctr	Oakland	ALAMEDA
200393	KRE 1330 Broadway Owner LLC	OAKLAND	ALAMEDA
2451	Pleasanton Garbage Service, Inc	Pleasanton	ALAMEDA
21708	Clorox Services Company	Pleasanton	ALAMEDA
2340	San Leandro Water Pollution Control Plant	San Leandro	ALAMEDA
83	United States Pipe & Foundry Company, LLC	Union City	ALAMEDA
2320	Oak View Memorial Park	Antioch	CONTRA COSTA

Facility #	Facility Name	City	County
14512	Gilroy Energy Center, LLC for Riverview Energy Ctr	Antioch	CONTRA COSTA
16855	Kaiser Antioch Deer Valley	Antioch	CONTRA COSTA
8930	California Department of Water Resources	Byron	CONTRA COSTA
19730	Mariposa Energy, LLC	Byron	CONTRA COSTA
541	Pacific Gas & Electric Co	Concord	CONTRA COSTA
1753	John Muir Health - Concord Campus	Concord	CONTRA COSTA
3162	Pacific Gas and Electric Company	Concord	CONTRA COSTA
10929	Contra Costa Water District Ralph D Bollman WTP	Concord	CONTRA COSTA
8664	Crockett Cogeneration, A Cal Ltd Partnership	Crockett	CONTRA COSTA
1464	Acme Fill Corporation	Martinez	CONTRA COSTA
3779	Contra Costa County	Martinez	CONTRA COSTA
4096	VA Medical Center	Martinez	CONTRA COSTA
4408	Mt View Sanitary District	Martinez	CONTRA COSTA
12342	Envent Corporation	Martinez	CONTRA COSTA
24089	TransMontaigne Operating LP	Martinez	CONTRA COSTA
1463	Ironhouse Sanitary District	Oakley	CONTRA COSTA
5498	Randall-Bold Water Treatment Plant	Oakley	CONTRA COSTA
1194	Pinole-Hercules Wastewater Treatment Plant	Pinole	CONTRA COSTA
7546	Roll Technology West	Pittsburg	CONTRA COSTA
19931	K2 Pure Solutions Nocal, LP	Pittsburg	CONTRA COSTA
72	Chevron Inc (Americas OE/HES)	Richmond	CONTRA COSTA
423	Chevron Richmond Technology Center	Richmond	CONTRA COSTA
2482	City of Richmond Water Pollution Control District	Richmond	CONTRA COSTA
14704	BNSF Railway Company	Richmond	CONTRA COSTA
21227	Phillips 66 Company	Richmond	CONTRA COSTA
21689	Biorichland LLC	Richmond	CONTRA COSTA
23438	Richmond Products Terminal	Richmond	CONTRA COSTA
7237	Chevron Business And Real Estate Services	San Ramon	CONTRA COSTA
22282	2600 CR LLC, Sunset Development	San Ramon	CONTRA COSTA
1821	Kaiser Foundation Hospital	Walnut Creek	CONTRA COSTA
1713	Marin General Hospital	Greenbrae	MARIN
13763	Novato Community Hospital	Novato	MARIN
1597	Las Gallinas Valley Sanitary District	San Rafael	MARIN
3947	Kaiser Permanente San Rafael Medical Center	San Rafael	MARIN
22566	County of Marin c/o Sares Regis	San Rafael	MARIN
1352	Adventist Health St Helena	Saint Helena	NAPA
459	Veterans Administration Medical Center	San Francisco	SAN FRANCISCO
479	Treasure Island - US Navy BRAC PMO-W	San Francisco	SAN FRANCISCO
1700	California Pacific Med Ctr, Pacific Campus	San Francisco	SAN FRANCISCO
1860	Laguna Honda Hospital	San Francisco	SAN FRANCISCO
2025	University of San Francisco	San Francisco	SAN FRANCISCO
2087	St Francis Memorial Hospital	San Francisco	SAN FRANCISCO
2344	Hilton San Francisco Union Square	San Francisco	SAN FRANCISCO
2836	Pacific Gas & Electric Company	San Francisco	SAN FRANCISCO
3926	Kaiser Permanente Medical Center	San Francisco	SAN FRANCISCO
4116	San Francisco Public Utilities Commission	San Francisco	SAN FRANCISCO
5755	UCSF/Mt Zion	San Francisco	SAN FRANCISCO

Facility #	Facility Name	City	County
6127	Central Shops/City & County of San Francisco	San Francisco	SAN FRANCISCO
9239	US General Services Administration	San Francisco	SAN FRANCISCO
9310	San Francisco Marriott Hotel	San Francisco	SAN FRANCISCO
9313	St Luke's Hospital A/P,CPMC-STL Campus	San Francisco	SAN FRANCISCO
9618	SF State University, Corp Yard	San Francisco	SAN FRANCISCO
10240	US Coast Guard	San Francisco	SAN FRANCISCO
11206	Phillip Burton Federal Bldg & US Courthouse	San Francisco	SAN FRANCISCO
11924	California Pacific Medical Center	San Francisco	SAN FRANCISCO
12197	United Airlines, Inc	San Francisco	SAN FRANCISCO
13256	Asian Art Museum	San Francisco	SAN FRANCISCO
13829	Boston Properties	San Francisco	SAN FRANCISCO
16504	Jones Lang LaSalle	San Francisco	SAN FRANCISCO
16637	Parc 55 Hotel	San Francisco	SAN FRANCISCO
19432	PPF Paramount One Market Plaza, LP	San Francisco	SAN FRANCISCO
20413	Hines GS/Hawthorne Plaza Assoc LLC	San Francisco	SAN FRANCISCO
21358	Knickerbocker Properties, Inc XXXIII	San Francisco	SAN FRANCISCO
21361	University of the Pacific	San Francisco	SAN FRANCISCO
21484	RNM 135 Main, L P	San Francisco	SAN FRANCISCO
21532	Le Meridien	San Francisco	SAN FRANCISCO
21608	Pacific Place	San Francisco	SAN FRANCISCO
22851	Tishman Speyer	San Francisco	SAN FRANCISCO
22951	SFDC 50 Fremont LLC	San Francisco	SAN FRANCISCO
23568	333 Bush LLC	San Francisco	SAN FRANCISCO
200652	KR Mission Bay, LLC	SAN FRANCISCO	SAN FRANCISCO
4021	SFPP, LP	Brisbane	SAN MATEO
1351	City of Burlingame, Waste Water Treatment Plant	Burlingame	SAN MATEO
2932	Cypress Lawn Cemetery Association	Colma	SAN MATEO
4860	Pet's Rest Cemetery	Colma	SAN MATEO
8020	Woodlawn Cemetery	Colma	SAN MATEO
17712	Spirit HD Colma CA, LP	Colma	SAN MATEO
1507	North San Mateo County Sanitation Dist	Daly City	SAN MATEO
12455	Gilead Sciences	Foster City	SAN MATEO
1533	Sewer Authority Mid-Coastside	Half Moon Bay	SAN MATEO
598	SRI International	Menlo Park	SAN MATEO
20079	Pacific Biosciences	Menlo Park	SAN MATEO
20668	Facebook, Inc	Menlo Park	SAN MATEO
12182	City of Pacifica Calera Creek Water Recycling	Pacifica	SAN MATEO
2440	Sequoia Hospital / Dignity Health	Redwood City	SAN MATEO
15544	Kaiser Permanente	Redwood City	SAN MATEO
20897	Bristol-Myers Squibb	Redwood City	SAN MATEO
1244	Silicon Valley Clean Water,San Carlos Pump Stn	San Carlos	SAN MATEO
3887	San Mateo Medical Center	San Mateo	SAN MATEO
16930	San Mateo County Youth Services Center	San Mateo	SAN MATEO
21170	Alexandria Real Estate Eq , Inc	South San Francisco	SAN MATEO
9721	Apple Inc	Cupertino	SANTA CLARA
15654	Foothill/DeAnza Community College District	Cupertino	SANTA CLARA
3329	Saint Louise Regional Hospital	Gilroy	SANTA CLARA
13566	Recology Pacheco Pass	Gilroy	SANTA CLARA

Facility #	Facility Name	City	County
14643	Gilroy Gardens, Inc	Gilroy	SANTA CLARA
13399	KLA Tencor	Milpitas	SANTA CLARA
2740	City of Mountain View (Shoreline Landfill)	Mountain View	SANTA CLARA
4272	El Camino Hospital	Mountain View	SANTA CLARA
15982	Google LLC	Mountain View	SANTA CLARA
22751	Google LLC	Mountain View	SANTA CLARA
585	Varian Oncology Systems	Palo Alto	SANTA CLARA
6061	Space Systems/Loral, LLC (Bldg 3)	Palo Alto	SANTA CLARA
10520	Communications & Power Industries	Palo Alto	SANTA CLARA
49	Chevron Products Company	San Jose	SANTA CLARA
85	HGST, a Western Digital Company	San Jose	SANTA CLARA
453	Good Samaritan Hospital	San Jose	SANTA CLARA
618	Univar USA Inc	San Jose	SANTA CLARA
1502	O'Connor Hospital	San Jose	SANTA CLARA
1982	County of Santa Clara - Hellyer Landfill	San Jose	SANTA CLARA
2275	IBM Corp, Research Facilities	San Jose	SANTA CLARA
2457	Regional Medical Center of San Jose	San Jose	SANTA CLARA
3919	Kaiser Permanente San Jose Medical Center	San Jose	SANTA CLARA
4175	City of San Jose (Singleton Road Landfill)	San Jose	SANTA CLARA
4205	Oak Hill Memorial Park & Mortuary	San Jose	SANTA CLARA
6044	O L S Energy-Agnews	San Jose	SANTA CLARA
6919	Applied Anodize Inc	San Jose	SANTA CLARA
7265	San Jose State University (Cogen Plant)	San Jose	SANTA CLARA
12763	Verizon Business	San Jose	SANTA CLARA
13289	Los Esteros Critical Energy Facility	San Jose	SANTA CLARA
14362	Cisco Systems, Site 4 Campus, Bldgs 1-19	San Jose	SANTA CLARA
14460	Santa Clara Valley Water District-Almaden Campus	San Jose	SANTA CLARA
14536	Santa Clara Valley Water District – PWTP	San Jose	SANTA CLARA
17437	Lumileds LLC	San Jose	SANTA CLARA
19357	Atlantic - San Jose	San Jose	SANTA CLARA
20324	Judicial Council of California, JCC 43-B2	San Jose	SANTA CLARA
23181	Lumentum Operations, LLC	San Jose	SANTA CLARA
531	Agilent Technologies	Santa Clara	SANTA CLARA
633	Intel Corporation	Santa Clara	SANTA CLARA
1427	Applied Materials	Santa Clara	SANTA CLARA
14991	Donald Von Raesfeld Power Plant	Santa Clara	SANTA CLARA
15397	Santa Clara University	Santa Clara	SANTA CLARA
15885	Kaiser Foundation Hospital	Santa Clara	SANTA CLARA
22691	Signature Flight Support	Santa Clara	SANTA CLARA
733	City of Sunnyvale Water Pollution Control	Sunnyvale	SANTA CLARA
2059	Fujitsu Technology and Business of America, Inc	Sunnyvale	SANTA CLARA
5905	City of Sunnyvale/Public Works Dept	Sunnyvale	SANTA CLARA
11002	Applied Materials	Sunnyvale	SANTA CLARA
17062	Bay Area Coffee Inc	Benicia	SOLANO
20023	Sunset Rectoria	Benicia	SOLANO
23622	Vision Recycling Benicia	Benicia	SOLANO
1606	City of Fairfield	Fairfield	SOLANO
2168	Jelly Belly Candy Company	Fairfield	SOLANO

Facility #	Facility Name	City	County
4429	NorthBay Medical Center	Fairfield	SOLANO
5791	Fairmont Memorial Park	Fairfield	SOLANO
13034	Universal Propulsion Company, Inc	Fairfield	SOLANO
17657	Lodi Gas Storage LLC	Suisun City	SOLANO
18044	AT&T Mobility AT&T Services	Suisun City	SOLANO
3319	Vallejo Flood and Wastewater District	Vallejo	SOLANO
21454	City of Vallejo Water Division	Vallejo	SOLANO
8316	USCG Training Center	Petaluma	SONOMA
11308	SRM Alliance Hospital Services	Petaluma	SONOMA
21613	Mountanos Brothers Coffee Company	Petaluma	SONOMA
279	Keysight Technologies	Santa Rosa	SONOMA
5178	Kaiser Foundation Hospital	Santa Rosa	SONOMA
19546	Santa Rosa Jet Center, LLC	Santa Rosa	SONOMA
20234	New Sonoma FBO, Inc	Santa Rosa	SONOMA
2315	Duggan's Mission Chapel	Sonoma	SONOMA
1236	Town of Windsor	Windsor	SONOMA