BAY AREA AIR QUALITY MANAGEMENT DISTRICT

PROPOSED AMENDMENTS TO:

BAAQMD REGULATION 2, RULE 5: NEW SOURCE REVIEW OF TOXIC AIR CONTAMINANTS

STAFF REPORT

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EXECUTIVE SUMMARY

This report addresses proposed changes to the Air District's Toxics New Source Review (NSR) Program, including amendments to Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants (Regulation 2, Rule 5) and associated procedures. The Air Toxics NSR Program is a health risk-based program, where program requirements are based on results of health risk assessment (HRA). HRA is 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 substances.

The goals of the Air Toxics NSR Program are to:

(1) Evaluate and mitigate potential increases in public health risks resulting from new and modified sources emitting TACs; and
(2) Provide net health risk benefits by improving the level of control when existing sources are modified or replaced.

The primary purpose of this Toxics NSR rule amendment is to incorporate the California Office of Environmental Health Hazard Assessment (OEHHA)'s 2015 Health Risk Assessment Guidelines and the California Air Resources Board/California Air Pollution Control Officer Association (CARB/CAPCOA)'s 2015 Risk Management Guidelines into the Air District's Toxics NSR rule. This rule amendment will also include new and revised health effects values and HRA trigger levels.

The Air District is proposing several rule amendments related to modified sources to improve the transparency of HRA results for these projects and to clarify applicable limits and procedures. Currently, modified sources that began operation prior to the initiation of the Air District's Toxic NSR Program on January 1, 1987 have a different emission calculation procedure than newer modified sources. This procedural difference can result in confusing or misleading HRA results. The Air District is proposing to eliminate this January 1, 1987 emission calculation baseline for older modified sources and use the same emission calculation procedure for all modified sources to prevent any confusion regarding HRA results. Limited data is available to assess the potential impacts of this proposed change. However, it is possible that basing an HRA on total proposed emissions from an older modified source could result in denial of a project that may have other air quality benefits. To prevent this unintended consequence, the Air District is proposing to allow consideration of contemporaneous toxic emission reductions for these projects. Since gasoline dispensing facilities (GDFs) are not likely to have contemporaneous toxic emission reductions, the elimination of the January 1, 1987 baseline could result in the denial of a throughput increase request for a modified gas station that began operating prior to this program baseline date, if the baseline throughput rate is large or residents are nearby.

The Air District is adding an exemption from the HRA requirement for small internal combustion engines, with a rated power output of 50 brake-horsepower (bhp) or less, to align it with Air District Regulation 9, Rule 8: Nitrogen Oxide and Carbon Monoxide from Stationary Internal Combustion Engines, state Airborne Toxic Control Measures (ATCMs), and Air District permitting thresholds.

The Air District is proposing a few additional amendments to Regulation 2, Rule 5 to improve conformity with the 2015 HRA Guidelines or clarify requirements. The current risk management thresholds will remain the same.

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. Estimating cancer risk using the new and better scientific information contained in the revised OEHHA and CARB/CAPCOA guidelines will result in higher risk numbers for many toxic air contaminants (TACs). For most TACs, the cancer risk will increase by about 40% 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 reach HRA and emission control requirements and project risk limits at lower emission rates. The Air District anticipates that the proposed rule amendments will result in about 100 more NSR HRAs per year, and that about 60 more projects per year will need to control TAC emissions to meet this rule's project health limits than would otherwise be required to do so under the current rule.

I. INTRODUCTION

This report was prepared to provide information relevant to the Air District's proposed amendments of Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants and the associated proposed amendments to the Air District's Methodology for Derivation of Toxic Air Contaminant Trigger Levels and the Air District's Health Risk Assessment Guidelines.

During development of this rule amendment, the Air District posted a draft version of the proposed revisions to Regulation 2, Rule 5 on the Air District web site on January 13, 2016 and presented the proposed revisions to this rule at a series of Community Open Houses held between January 28, 2016 and February 4, 2016. The Air District accepted comments on the proposed rule revisions through March 9, 2016.

The Air District received a number of inquiries regarding the proposed rule revisions and received two written comments. After considering the comments received on this proposed rule revision and additional staff analysis, the Air District made the following key changes to the initial proposed rule revisions: added net health risk limits for pre-1987 modified sources, retained the trigger level table in the rule, and delayed implementation of the 2015 HRA Guidelines for GDFs. The comments and the Air District's responses to these comments are discussed in more detail in Section X of this report.

This staff report analyzes the proposed revisions to Regulation 2, Rule 5 and Table 2-5-1, as identified in Appendix A. The procedures used to calculate the proposed risk screen trigger levels are identified in Appendix B. The proposed revisions to the Air District HRA Guidelines are presented in Appendix C. The Socioeconomic Impacts Analysis is included as Appendix D. The California Environmental Quality Act (CEQA) initial study and proposed negative declaration are included as Appendix E.

II. BACKGROUND INFORMATION

Over the last several decades, public concern about air pollution has expanded from what is typically called “smog” and other criteria air pollutants to include TACs. 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.

For more than twenty-nine years, the Air District has implemented programs that are designed to identify and reduce the public’s exposure to TACs. As shown in Figure 1, Air District and state toxic programs have reduced the average Bay Area cancer risk resulting from exposure to TACs in our air by 83% over the last two decades.

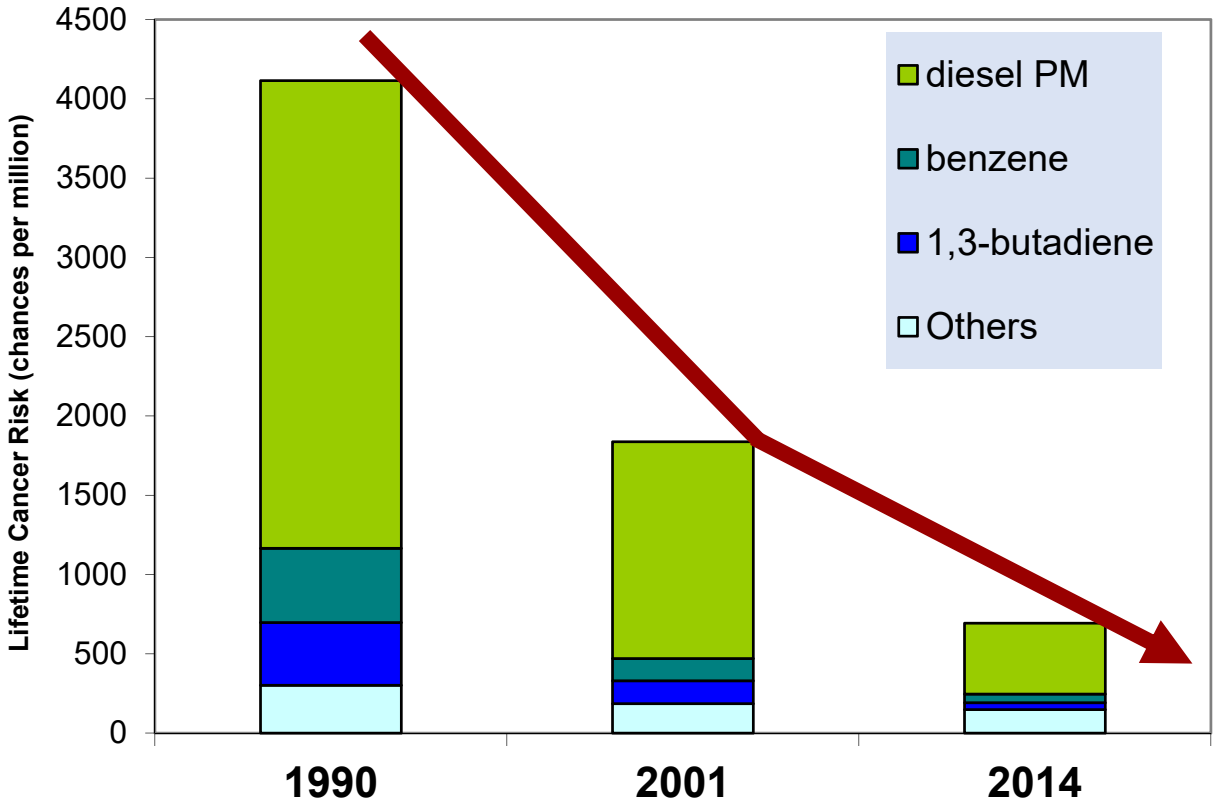

Figure 1. Bay Area Lifetime Residential Cancer Risk* from TAC Exposure

* Cancer risk is based on average ambient air monitoring data and the population wide risk assessment methodology presented in OEHHA’s 2015 HRA Guidelines.

The Air District’s long-standing Air Toxics Program is directed at reducing TAC emissions from stationary sources. Based on the Air District’s TAC emissions inventories, toxicity weighted TAC emissions from Bay Area stationary sources have decreased by at least 87% since 1990 (see Figure 2).

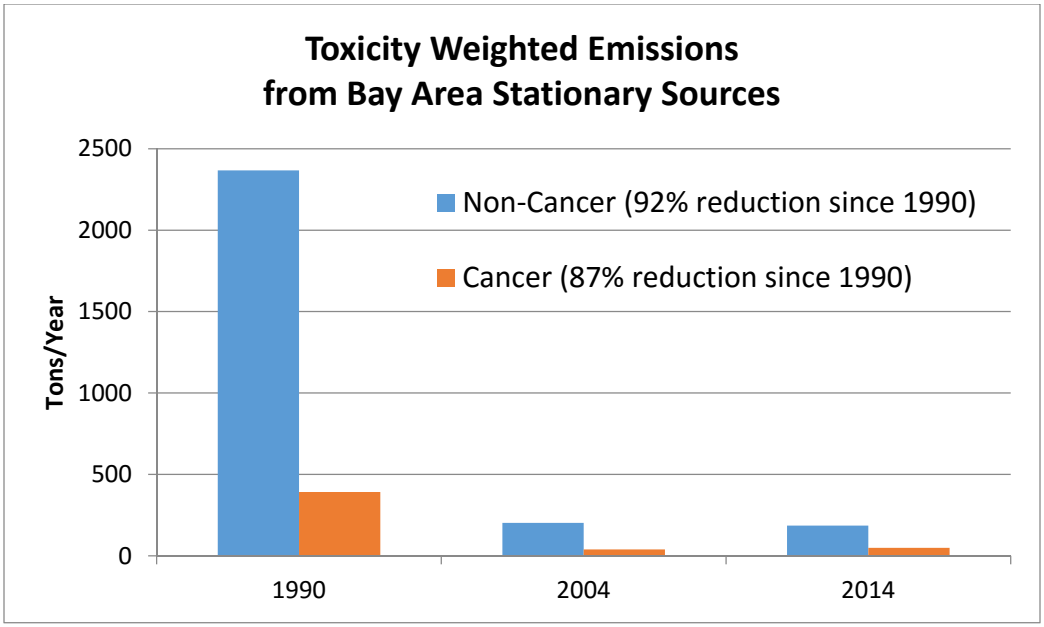

Figure 2. Toxicity Weighted Emissions from Bay Area Stationary Sources

* The emission rates for several common TACs (diesel engine exhaust particulate matter, ethyl benzene, and isopropyl alcohol) were not available for the 1990 emission inventory.

The Air District's Air Toxics Program is successfully continuing this downward trend in cancer risk due to stationary source TAC emissions. As shown in Figure 3, emissions are declining for many of the largest contributors to stationary source cancer risk.

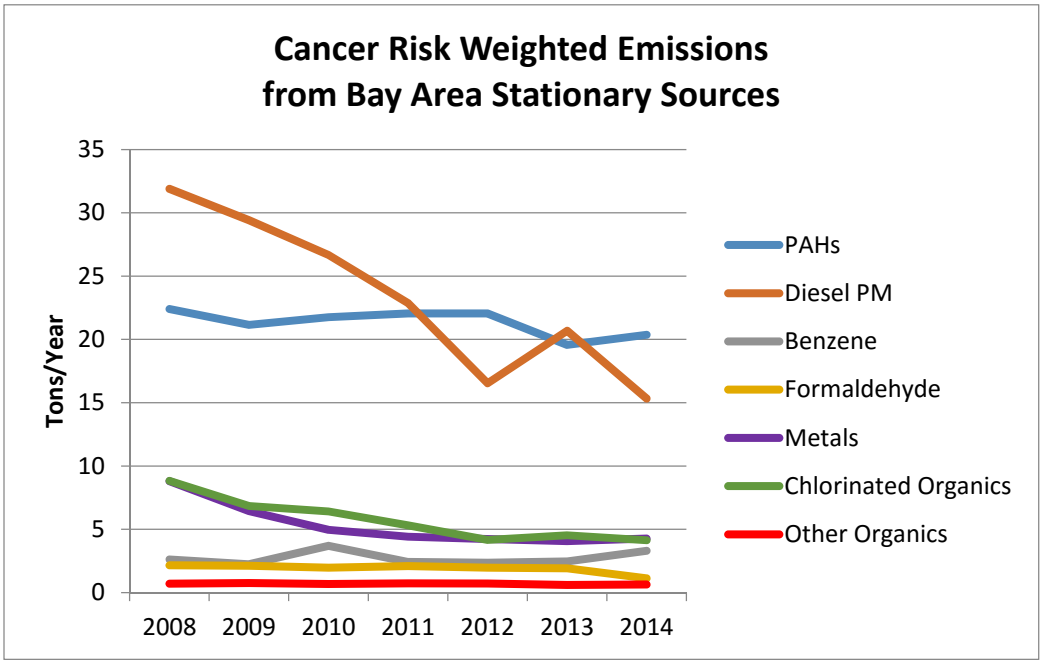

Figure 3. Cancer Risk Weighted Emissions from Bay Area Stationary Sources

The Air District's Air Toxics Program has three main elements that integrate federal and state mandates and local goals:

1) the preconstruction review of new and modified sources of TAC emissions (the Air Toxics NSR 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 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 and conformity with state mandates, the Air District 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 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 Health Risk Assessment Guidelines.

OEHHA periodically updates these HRA Guidelines to reflect advances in science. OEHHA recently adopted a major update to the HRA Guidelines that focused on children's health protection: OEHHA's 2015 HRA Guideline Revisions. 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 HRA procedures for these programs.

This report 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. The primary goal of this rule amendment is to incorporate OEHHA's 2015 HRA Guideline Revisions into this rule.

The revisions to the Air Toxic Hot Spots Program will be discussed at a later date.

III. AIR TOXICS NEW SOURCE REVIEW PROGRAM

The Air Toxics NSR Program was established in 1987 at the direction of the Air District's Board of Directors 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 Bay Area Air Quality Management District (BAAQMD) Health Risk Screening Analysis (HRSA) Guidelines. In the last 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.[1]

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 preconstruction 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, Rule 5 contains health risk based thresholds at which a new or modified source must employ Best Available Control Technology for Toxics (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:

(1) risk assessment, which involves estimating risk for a project using a prescribed methodology, and

(2) 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.

[1] 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 measures OEHHA included in the 2015 HRA Guideline Revisions.

IV. PROPOSED CHANGES TO AIR TOXICS NSR PROGRAM

The Air District is proposing to increase the stringency of the Air Toxics NSR Program by incorporating updated HRA procedures that will result in higher calculated 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 GDFs, 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 health effects values and the Air District's acute and chronic emission rate trigger levels for TACs 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 and procedures 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 HRA for any alteration of a source that results in no increases in toxicity weighted emissions for that source,
- Add an exemption from HRA for internal combustion engines and gas turbines smaller than 50 bhp, and
- Clarify terminology in Regulation 2-5.

The primary goal of these revisions is to ensure that the Air District's Air Toxics NSR Program conforms to the most recent state-wide risk assessment and risk management guidance. In 2015, OEHHA and CARB adopted major changes to the risk assessment and risk management guidance documents. The Air District's HRA Guidelines need to be revised to include these 2015 guidance document revisions. The Air District's proposed revisions to the BAAQMD HRA Guidelines are contained in Appendix C. These Air District HRA Guidelines adopt the 2015 guidance documents by reference and identify various Air District procedural decisions.

The Air District is planning to delay implementation of the 2015 HRA Guidelines for GDFs, because the Air District's analysis of the potential impacts of these guideline changes on GDFs is not complete, and CARB has recently proposed updated emission factors for GDFs. Also, CARB in coordination with CAPCOA is planning to update the Industrywide Guidelines for Gasoline Dispensing Facilities. Industrywide guidelines create uniform procedures and recommendations for efficiently addressing source categories that have

numerous facilities. The Air District will need additional time to evaluate the combined influences of the new emission factors and new HRA guidelines on GDFs and to consider the anticipated updates to the Industrywide Guidelines for GDFs. Therefore, the Air District is proposing to continue using the Air District's current health risk calculation procedures for GDFs, except that GDFs will be subject to the updated health effects values and revised emission calculation procedures for modified sources that are discussed below in Section IV.C. The specific HRA procedures for GDFs are identified in Appendix C.

The Air District's TAC trigger levels in Table 2-5-1 need to be revised to include the 2015 updates to the health risk calculation procedures, which impact the Air District's chronic trigger levels for carcinogens. In addition, OEHHA has updated numerous non-cancer health effects values and identified a new TAC, caprolactam, during 2010-2016. These OEHHA updates need to be included in Table 2-5-1. The columns in Table 2-5-1 have been rearranged to improve functionality for table users. The procedures the Air District used to develop the Table 2-5-1 acute and chronic HRA trigger levels are explained in Appendix B.

The Air District is proposing several rule amendments related to modified sources that will simplify emission calculation procedures, clarify applicability of HRA requirements, and improve transparency of HRA results. In particular, the Air District is proposing to remove a January 1, 1987 emission calculation baseline date for modified sources. HRA's will be based on the total proposed emissions from a project regardless of when a modified source was installed. This change will increase the stringency of the rule for older modified sources. To ensure that this change does not prohibit beneficial projects, the Air District is proposing to clarify an exemption for source alterations and to add net project risk standards and procedures that give the applicant alternative means of complying with this rule's requirements and health risk limits.

Finally, the Air District is proposing revisions to Regulation 2, Rule 5 with the intention of making rule language consistent with other Air District rules and state guidance documents and clarifying text.

A. Proposed HRA Guideline Revisions

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 air toxics 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 Health Risk Assessments to replace the 2003 Air Toxic Hot Spots Guidance Manual. OEHHA's 2015 HRA Guidelines reflect both children's greater

sensitivity to TACs and more refined data related to childhood and adult exposure to air toxics. OEHHA's 2015 HRA Guidelines affect how risk assessments are conducted.

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;
- Age-Specific exposure variables;
- Fraction of Time at Home;
- Exposure Duration; and
- Spatial Averaging of Exposure Concentrations

These five key HRA revisions and the Air District's proposals for incorporating these procedures into the Air District's HRA Guidelines are discussed below.

Age Sensitivity Factors

OEHHA's 2015 HRA Guidelines include adjustment factors that account for children's heightened sensitivity to air toxics. These adjustment factors are referred to as age sensitivity factors (ASFs), which are age-specific weighting factors used to reflect children's special sensitivity to carcinogens. The ASFs include a 10-fold multiplier in sensitivity for infants less than age two, a three-fold increase in sensitivity for children ages two to sixteen years old, and a sensitivity factor of one for ages sixteen and older.

The Air District incorporated ASFs into the Air District's most recent amendment of the BAAQMD Air Toxics NSR Program Health Risk Screening Analysis Guidelines and has been using ASFs in toxic NSR HRAs since January 2010. The Air District is proposing to continue using ASFs in cancer risk calculation procedures, as described in OEHHA's 2015 HRA Guidelines. Since the Air District is already using ASFs in toxic NSR HRAs, Bay Area projects will not be affected by this revision to the OEHHA cancer risk calculation procedures.

Age-Specific Exposure Variables

People can be exposed to TACs in a variety of ways (e.g. by breathing in TACs present in the ambient air, by skin exposure to TACs in ambient air, by ingestion of food or water on which TACs have been deposited, etc.) [2] For each of these possible exposure

[2] While it is possible for people to be exposed to TACs through a number of different exposure pathways,

pathways, a risk assessor needs general population data (such as breathing rates, skin uptake rates, food ingestion rates, etc.) in order to calculate potential health risks. In the 2003 HRA Guidelines, OEHHA recommended exposure variables for three exposure durations and population sets: 9-year exposure duration for students, 40-year exposure duration for workers, and 70-year exposure duration for residents.

For the 2015 HRA Guidelines, OEHHA developed exposure variables for six age groups including the last trimester to birth, birth to < age 2, age 2 < 9, age 2 to < 16, age 16 to < 30, and age 16 to 70 years. These age groups allow for more refined exposure information to be used when estimating exposure and potential health impacts over time.

For cancer risk calculations, OEHHA recommends using the 95th percentile of the daily breathing rates for each of the above age groups when conducting a Tier I point risk estimate of residential cancer risk. However, OEHHA gives the risk assessor flexibility to use more appropriate site-specific data or a stochastic approach as a more refined risk estimate.

When considering appropriate breathing rate assumptions for risk management decisions, CARB recommends using the 95th percentile breathing rate for the most sensitive age groups (less than 2 years old) and using the 80th percentile breathing rates for other age groups (2 years old and up), when calculating the exposure rates for the inhalation pathway. [3] This is referred to as the 95/80 daily breathing rate (DBR) policy. This policy continues the 2003 policy of using at least the 80th percentile DBR for residential locations.

The 95/80 DBR policy is modeled after the OEHHA derived approach for assessing risks for pollutants with multiple exposure pathways. For multi-pathway analyses, OEHHA recommends using high-end exposure parameters for all pathways to determine which pathways are driving the risk. The risk estimate is then refined by using high-end exposure parameters for the two pathways that contribute most to risk and by using average exposure parameters for the remaining pathways. The 95/80 DBR policy is more conservative than the derived approach, because it uses the higher 80th percentile DBR for the non-driving age rate groups instead of an average DBR.

The Air District has evaluated both the OEHHA DBR recommendation (95th percentile for all inhalation age groups) and the CARB 95/80 DBR policy. The CARB 95/80 DBR policy is more consistent with the Air District's current approach (using 80th percentile DBR for residential inhalation exposures, if inhalation is the only cancer risk pathway). The CARB 95/80 DBR is more conservative than the Air District's current approach but less conservative than the OEHHA DBR approach. Based on CARB and CAPCOA analyses of these approaches, the Air District considers the CARB 95/80 DBR policy to be the best

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most TACs only cause adverse health effects when people are exposed via the inhalation pathway. There are only 20-30 "multi-pathway" TACs that have health effects values for non-inhalation pathways in addition to the inhalation pathway. Most of these multi-pathway TACs are metals or heavy long chain hydrocarbons.

[3] CARB/CAPCOA Risk Management Guidance for Stationary Sources of Air Toxics, Appendix D

practice in the implementation of age specific exposure variables. Therefore, the Air District is proposing to use the CARB 95/80 DBR policy for residential exposure calculations, if inhalation is the only cancer risk pathway.

The incorporation of exposure variables for six age groups and the use of the CARB 95/80 DBR policy for inhalation pathways are expected to result in higher cancer risks for the same level of emissions compared to the Air District's current HRA Guidelines and procedures.

Fraction of Time at Home

Under the 2003 Risk Assessment Guidance, residential receptors are assumed to be at their home 24 hours a day, or 100% of the time. In the 2015 Risk Assessment Guidance, OEHHA includes adjustments to exposure duration to account for the fraction of time at home (FAH), which is typically less than 100% of the time, based on updated population and activity statistics. The FAH factors are age-specific and are: 0.85 for third trimester of pregnancy to less than 2 years old, 0.72 for ages 2 to < 16 years, and 0.73 for ages 16 to 70 years. For facilities or projects that have a school nearby, OEHHA recommends that a screening approach first be used to determine the potential health risk near the school. If the school is located in an area where the residential cancer risk is greater than 1 in a million, the risk calculations should use an FAH factor of 1 for the child age groups (3rd Trimester, 0<2 years of age, and 2<16 years of age).

The Air District is planning to incorporate these FAH recommendations into the Air District's HRA calculation procedures. The initial residential cancer risk calculations should use a default FAH of one (1.00) for all child age groups, as shown in the following table. If this initial analysis finds that schools are only located within areas where the residential cancer risk is less than one in a million, the residential cancer risk calculations may be refined by including appropriate FAH factors for each age group.

Table A.1 Air District Fraction of Time at Home Assumptions

Age Group	Default FAH	Refined FAH *
3rd Trimester to < 2 years	1.00	0.85
2 to < 16 years	1.00	0.72
16 to 70 years	0.73	0.73

* These refined FAH assumptions shall only be used if an initial analysis has demonstrated that there are no schools located within areas where the residential cancer risk is one in a million or higher.

The use of FAH factors results in a small reduction in cancer risk for the same level of emissions compared to the Air District's current calculation methodology.

Exposure Duration

Currently, the Air District uses a 70-year lifetime exposure duration for residences and a 40-year exposure duration for workers, in accordance with OEHHA's 2003 Risk Assessment Guidance. Based on updated demographic data, OEHHA is now

recommending exposure durations of 30 years for residents and 25 years for workers. The residency data is in-line with EPA approved assumptions for residents, and the worker assumption more accurately represents the current length of employment time. These shorter exposure duration assumptions for residents and workers result in a small reduction in cancer risk compared to the Air District's current risk calculation procedures.

For short-term projects, such as construction or remediation projects, the Air District's current health risk calculation procedure uses a minimum project duration of 9 years for the cancer risk assessment based on 2003 OEHHA guidelines. In the 2015 guidelines, OEHHA recommends:

- no cancer risk assessment for projects lasting less than 2 months,
- use of a 6-month duration for cancer risk assessments involving projects lasting between 2 and 6 months, and
- use of actual project duration for cancer risk assessments on projects lasting longer than 6 months.

However, OEHHA also recommends that the risk manager consider a lower cancer risk threshold for very short term projects, because a higher exposure over a short period of time may pose a greater risk than the same total exposure spread over a much longer period of time.

To ensure that reducing project duration does not result in unanticipated higher cancer impacts due to short-duration high exposure rates, the Air District is proposing to require a minimum 3-year exposure duration assumption for cancer risk assessments on projects lasting 3 years or less. In other words, for projects lasting three years or less, the Air District will assume that the average daily project emissions continue for a minimum of a 3-year period. This 3-year exposure duration assumption ensures that residents will not be exposed to any greater concentrations of TACs than the TAC concentrations allowed by the Air District's current HRA procedures.

Spatial Averaging of Concentrations

OEHHA's revised guidance provides an option for spatially averaging dispersion modeling results for determining a project's potential health risk. Spatial averaging is intended to reflect a person's typical movement within their home or workspace. Spatial averaging is a technique used to estimate the overall impact on a given receptor by averaging the modeled concentrations over a discrete area, instead of using a single point to determine potential cancer and chronic non-cancer health impacts. The area over which concentrations may be averaged is 400 square meters (20 meter by 20 meter area at 5 meter intervals).

The Air District is proposing to add spatial averaging as a potential HRA refinement option. The impacts of spatial averaging depend on the type of release point and distance to receptors. For projects with tall stacks and distant receptors, spatial averaging has little or no impact on the HRA results. While for fugitive near-ground releases with nearby receptors, spatially averaging can reduce the calculated health impact by up to 20%.

While spatial averaging can result in a reduction in health impacts for some projects, the Air District believes that spatial averaging is appropriate, because it is more reflective of actual TAC exposure.

Overall Impacts of HRA Guideline 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, 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 1.5 to 3 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 DBR policy, fraction of time at home, exposure duration, and spatial averaging) will result in about a 40% 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,[4] 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 3-5 times higher than cancer risks determined using current Air District procedures. Less than 5% of the Air District's NSR risk assessments involve multi-pathway pollutants.

B. Proposed TAC Trigger Level Changes

The Air District uses TAC emission rate trigger levels to determine the need for HRA for projects 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.

[4] TACs with multi-pathway cancer impacts include: arsenic, inorganic arsenic compounds, chromium (hexavalent), inorganic hexavalent chromium compounds, di(2-ethylhexyl) phthalate, hexachloro-cyclohexanes, lead, inorganic lead compounds, 4,4-methylene dianiline and its dichloride, polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), polychlorinated dibenzo-p-dioxins (PCDDs), polychlorinated dibenzofurans (PCDFs), and dioxin like PCBs.

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 TAC 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. Appendix B contains a detailed description of the updated procedures that the Air District is using to calculate the acute and chronic trigger levels. The revised trigger levels, health effects data, and toxicity weighting factors will be reflected in Table 2-5-1. The proposed revisions to Table 2-5-1 are identified in Appendix A. The Air District has also rearranged the order of the columns in Table 2-5-1 to improve functionality for table users.

Target Health Risk Levels

For the proposed TAC trigger levels, the Air District is not proposing any changes to the target health risk levels. For chronic health risk, the Air District uses a cancer risk of 1.0 in a million (1.0×10^{-6}) and a non-cancer hazard index of 0.2 as the target health risk levels; these are the risk thresholds at which TBACT is required (Section 2-5-301). For acute health risk, the Air District uses a hazard index of 1.0 as the target health risk level, which is the same as the acute non-cancer hazard index limit for projects (Section 2-5-302.3).

Health Effects Values and Toxicity Weighting Factors

The Air District's current Table 2-5-1 contains OEHHA health effects values that were adopted by OEHHA prior to January 6, 2010. This table also includes Air District toxicity weighting factors that are used for calculating toxicity weighted emissions for modified sources. These toxicity weighting factors are based on the chronic health effects values for the compound and include: CREL weighting factors and cancer potency (CP) weighting factors. The Air District developed these weighting factors assuming multi-pathway exposure where applicable, and continuously operating sources for residential receptor exposure. The Air District's proposed Table 2-5-1 in Appendix A incorporates

all health effects values adopted by OEHHA as of March 31, 2016 and any updates to the Air District's toxicity weighting factors due to revisions of either OEHHA guidelines or OEHHA health effect values. The specific changes to Table 2-5-1 are discussed in more detail below.

After the Air District's TAC trigger level table was last revised in 2010, OEHHA added a new non-carcinogenic TAC, caprolactam. Caprolactam is used in the manufacture of synthetic fibers; it is a precursor to Nylon 6. Acute exposures may result in irritation or burning of eyes, nose, or throat, headaches, malaise, or confusion. Chronic exposure may result in inflammation of eyes, nose, or throat. Direct skin contact with the solid form of caprolactam can cause dermatitis.

OEHHA also updated acute or chronic RELs for the following compounds: benzene, 1,3-butadiene, methylene diphenyl diisocyanate, nickel, nickel compounds, selenium, selenium sulfide, and toluene diisocyanates. Previously, the acute RELs for some compounds were based on exposure periods longer than 1 hour, and the Air District had identified these compounds in Footnote 3 to the Air District's TAC trigger level table. OEHHA revised these acute RELs such that all acute RELs are now based on a 1-hour exposure period. The Air District is incorporating all of these REL related revisions into the proposed Table 2-5-1 and is updating the related non-carcinogenic toxicity weighting factors and trigger levels.

In addition to the REL revisions above, OEHHA adopted 8-hour RELs for the following compounds: acetaldehyde, acrolein, arsenic, inorganic arsenic compounds, arsine, benzene, 1,3-butadiene, caprolactam, formaldehyde, manganese, manganese compounds, mercury, inorganic mercury compounds, mercuric chloride, methylene diphenyl diisocyanate, nickel, nickel compounds, and toluene diisocyanates. The Air District does not use these 8-hour RELs to calculate risk assessment trigger levels, but these 8-hour RELs are used in worker exposure assessments. The Air District is identifying the new 8-hour RELs in the proposed revisions to Table 2-5-1.

OEHHA has not revised any inhalation cancer potency factors since 2010, but OEHHA added an oral cancer potency factor for hexavalent chromium in 2011. The Air District is updating the associated toxicity weighting factor and chronic trigger level for hexavalent chromium compounds.

For compounds with multi-pathway carcinogenic health effects (any compounds with an oral cancer potency value), the cancer risk calculation procedures are changing due to the new OEHHA guidelines. These cancer risk calculation procedure revisions also affect the Air District's toxicity weighting factors for such compounds. Therefore, the Air District is proposing to revise CP weighting factors for all carcinogens with multi-pathway exposure routes.

OEHHA updated the Toxicity Equivalency Factors (TEF) for a number of chlorinated dioxins and furans and dioxin-like PCBs. These updates are included in Table 2-5-1 (see footnote 7), and the Air District is removing an obsolete sub-category for PCBs.

Air Dispersion and Receptor Response Assumptions

The Air District's TAC trigger levels are calculated using conservative air dispersion and receptor response assumptions. These calculations include several criteria that are impacted by the OEHHA guideline revisions, such as breathing rate and exposure duration assumptions. The revised Air District HRA trigger levels were calculated using the new default data and procedures for residents that are discussed in detail in Section IV.A. (i.e. 95/80 DBR policy for the age-group specific breathing rates, default FAH values for each age-group, and 30-year exposure duration). The current trigger levels already include consideration of age sensitivity factors. The air dispersion calculation and receptor location assumption did not change.

Overall Impacts of Trigger Level and Health Effect Value 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 GDFs. 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 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 HRA 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.

C. 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 rule is organized into six sections as follows: General (section numbers in the 100's), Definitions (200's), Standards (300's), Administrative Requirements (400's), Monitoring and Records (500's), and Manual of Procedures (600's). A copy of the proposed revisions to this rule is provided in Appendix A of this staff report. The proposed revisions to each section of this rule are discussed below.

General Requirements

The General requirements define the applicability of the rule and identify any exemptions from the rule or from specific sections of the rule.

Section 2-5-102: Applicability and Circumvention: The Air District is proposing to move Section 2-5-112 to Section 2-5-102 to align this rule with the organizational structure of other Air District rules. Typically, rule applicability criteria are contained within Section 101-109 of a rule, while Sections 110 and higher contain exemptions. The text of this section has not been modified.

Section 2-5-110: Exemption, Low Emission Levels: The Air District is proposing to clarify that project emissions for a TAC must be less than both the acute and chronic trigger levels for the TAC to qualify for this exemption from this rule. The Air District is adding text to clarify how this exemption should be used in conjunction with Air District permitting criteria and HRA requirements in Regulation 2-1-316.

Section 2-5-112: Applicability and Circumvention: As stated above, The Air District is proposing to move Section 2-5-112 to Section 2-5-102. Section 2-5-112 will be deleted.

Section 2-5-113: Exemption, Small Internal Combustion Engines and Gas Turbines: As discussed in Section IV.B of this report, the emissions from small engines and turbines (less than 50 bhp) may be greater than the proposed trigger levels for certain TACs, such as diesel particulate matter. This could result in many small engines triggering HRA requirements to verify permit exemption applicability. The Air District prefers to focus staff resources on more significant sources of TAC emissions. In addition, these small engines are exempt from state ATCMs and Air District Regulation 9, Rule 8. To ensure consistency with these regulations, the Air District is proposing to exempt small engines from HRA provisions.

Section 2-5-114: Limited Exemption, Modified Source with No Increase in Toxicity Weighted Emissions: The Air District is proposing to add this section to clarify how contemporaneous emission reductions at a modified source are taken into consideration. As described currently in Sections 2-5-216 and 2-5-601.4, the Air District may consider contemporaneous emission reductions at a modified source when calculating emissions for that source or when conducting a risk assessment for a project involving that modified source. The Air District added these provisions for handling contemporaneous emission

reductions at a modified source to encourage modifications that would result in lower toxicity weighted emissions for a source. However, the current language is not clear about the specific procedures to follow when a modified source has lower toxicity weighted emissions after a modification.

Therefore, the Air District is proposing to add Section 2-5-114, which will exempt a source from the requirement to undergo HRA, if the emission changes at that source do not result in any increases in toxicity weighted emissions. In essence, a finding of no increase in toxicity weighted emissions means that the source is not a modified source for the purpose of Regulation 2, Rule 5, and the source does not need to be included in the project if the application includes other new or modified sources. The Air District is clarifying the related emission calculation procedures for the pre-modification and post-modification cases in Section 2-5-601.3.

This exemption is a limited exemption because other sections of Regulation 2, Rule 5 may apply to the source based on earlier permitting activities for that source. For example, if a source was subject to TBACT upon initial permitting, and later undergoes a change that results in a decrease in toxicity weighted emissions, the source would continue to be subject to TBACT, unless the applicant demonstrates that the post-modification source would no longer trigger TBACT pursuant to Regulation 2-5-301.

Section 2-5-115: Limited Exemption, Contemporaneous Health Risk Reduction Projects: This exemption is related to the Air District's proposal to remove the January 1, 1987 emission calculation baseline for modified sources, which is explained in detail below in the discussion for Section 2-5-303. This limited exemption will allow a qualifying contemporaneous health risk reduction project to meet the net health risk limits in Section 2-5-303 instead of the project risk limits in Section 2-5-302. The risk limits are the same in both cases, but a "net project" health risk may include consideration of contemporaneous health risk reductions from shut-downs or alterations of sources that are not included in the determination of "project" health risk.

Definitions

This section of the rule contains definitions for terms used in this rule. These definitions are necessary to clarify the Air District's emissions calculations and risk assessment procedures. The Air District is proposing to modify a number of definitions to ensure conformity with the 2015 risk assessment and risk management guidelines. The Air District is also proposing new and revised definitions to clarify and streamline calculation procedures for modified sources.

Section 2-5-206: Cancer Risk: The Air District is proposing to revise this definition to be more consistent with OEHHA's 2015 risk assessment procedures. Cancer Risk may be determined for a variety of exposure durations, depending on the type of receptor (resident, worker, student, etc.).

Section 2-5-211: Health Risk Screening Analysis: The Air District is proposing to change the term and acronym "Health Risk Screening Analysis (HRSA)" to "Health Risk Assessment (HRA)" for consistency with OEHHA's terminology. The new term and acronym are used throughout the rule in Sections: 212, 217, 218, 221, 401, 402, and 603.

Section 2-5-212: Maximally Exposed Individual, or MEI: The Air District is proposing to change the acronym HRSA to HRA for consistency with OEHHA's terminology.

Section 2-5-216: Project: The Air District is proposing to extend the related permit application look-back period from two years to three years, because projects may take longer than two years to complete. The purpose of this revision is to further discourage circumvention of HRA requirements.

Currently, Section 2-5-216 identifies a January 1, 1987 baseline date for determining emission increases for a modified source that was initially installed prior to January 1, 1987. For these projects, the HRA is based on only a portion of the emissions from the modified source (the post-1987 emission increase) rather than the total proposed emissions from the modified source. For new sources and for all modified sources that were initially installed after January 1, 1987, the HRA is based on the total proposed emissions from the new or modified source. This difference in emission calculation procedure for certain modified sources could result in confusing or misleading HRA results. The Air District is proposing to resolve this issue by eliminating the January 1, 1987 baseline date. The procedures will now require that the project HRA be based on the total proposed emissions from all new or modified sources in the project, regardless of when the source was first installed. This simplifies the emission calculation procedure and ensures that the HRA results are readily understandable.

As discussed above for Section 2-5-114, the Air District is proposing to clarify that HRA requirements do not apply to a source that is undergoing a change that results in no increase in toxicity weighted emissions. This limited exemption is now identified in Section 2-5-114 and the redundant language in Sections 216 has been removed.

Section 2-5-217: Project Risk: The Air District is proposing to change the acronym HRSA to HRA for consistency with OEHHA's terminology. The Air District is also revising text to reflect that the project risk will now represent to total proposed emissions from all sources in the project and not just the post-1987 emission increases for a pre-1987 modified source.

Section 2-5-218: Receptor Location: The Air District is proposing to change the acronym HRSA to HRA for consistency with OEHHA's terminology.

Section 2-5-219: Reference Exposure Level, or REL: The Air District is making editorial revisions.

Section 2-5-221: Source Risk: The Air District is eliminating text related to emission increases for modified sources, because the HRA will now be based on the total proposed

emissions from any modified source due to the elimination of the January 1, 1987 emission calculation baseline. The Air District is also proposing to change the acronym HRSA to HRA for consistency with OEHHA's terminology.

Section 2-5-222: Toxic Air Contaminant, or TAC: The Air District is making editorial revisions.

Section 2-5-223: Trigger Level: The Air District is making editorial revisions.

Section 2-5-228: Contemporaneous Health Risk Reduction Project: The Air District is adding this definition to explain this new term. The discussion for Section 2-5-303 explains the need for this new term.

Section 2-5-229: Net Project Risk: The Air District is adding this definition to explain this new term. The discussion for Section 2-5-303 explains the need for this new term.

Standards

This section of the rule contains the health risk standards that apply to all new sources, all modified sources, and all projects. The standards are summarized below. The Air District is not proposing any revisions to these standards.

Section 2-5-301: Best Available Control Technology for Toxics (TBACT) Requirement: The Air District is making an editorial revision to this section.

This section identifies the source risk thresholds (1.0 in a million cancer risk and 0.2 chronic hazard index) at which TBACT is required. If a source results in a health risk that is greater than either of these TBACT thresholds, the source is required to employ TBACT. The Air District identifies TBACT requirements for common source types in the Air District's BACT/TBACT Workbook, which is available on line at: http://www.baaqmd.gov/permits/permitting-manuals/bact-tbact-workbook.

Section 2-5-302: Project Risk Requirement: The Air District is making an editorial revision to this section.

This section establishes health risk limits for the combined impacts from all new or modified sources in a project. The project health risk limits are: cancer risk of 10.0 in a million, chronic hazard index of 1.0, and acute hazard index of 1.0. As discussed in Section 2-5-216, a project includes all new or modified sources in a single permit application and may also include new or modified sources in previous permit applications, if the projects are related.

Although the Air District is not proposing any revisions to the above standards, the other proposed rule revisions will make this rule more stringent, because the calculated health risk will be higher using the proposed procedures compared to the current procedures.

Section 2-5-115 will allow a limited exemption from Section 2-5-302 for a very small number of projects that involve modified sources installed before January 1, 1987 (pre-1987 sources). These projects will need to meet the applicability and procedural criteria in Section 2-5-406 and the net project risk limits in Section 2-5-303. The project risk limits and net project risk limits are the same, but a net project risk may include consideration of contemporaneous toxic emission reductions.

Section 2-5-303: Net Project Risk Requirement: The Air District is adding this section to allow consideration of contemporaneous risk reductions for a small number of projects that involve pre-1987 modified sources. These projects will need to meet the applicability and procedural criteria in Section 2-5-406.

This section establishes net health risk limits for the combined impacts of new and modified sources and contemporaneous source shut-downs or alterations that result in toxic emission reductions. The net project health risk limits are the same as the Section 2-5-302 project risk limits and are: cancer risk of 10.0 in a million, chronic hazard index of 1.0, and acute hazard index of 1.0.

The Air District receives very few applications involving modifications to pre-1987 sources. Based on a review of the few HRAs for projects involving pre-1987 sources, it is possible that the proposed change in the emission calculation procedure for a pre-1987 source could cause a project to fail to meet the Section 2-5-302 project risk limits. The likelihood of this outcome is not high. For sites other than GDFs, the observed health impacts for such sources have either been very low or the modified source has been required to employ TBACT, which limits the potential health impacts. There have been no GDF HRAs involving a pre-1987 facility in recent years.

As allowed currently, a facility can avoid the HRA requirement for a modified source by demonstrating that the project will result in no increases in toxicity weighted emissions for that source. In addition, the Air District has created another means of meeting the same risk thresholds: the net project risk limits. These net project risk limits provide another way of meeting the NSR thresholds by including contemporaneous risk reduction in the net project. The proposed Section 2-5-406 criteria for using this net project risk provision will ensure that it does not allow backsliding and will only be used under a narrow set of circumstances.

The Air District expects that the impacts of removing the 1987 baseline will be balanced out by the impacts of adding net project risk provisions, such that overall, these proposed rule changes will have no impact on permitting decisions for most facilities.

The one potential exception to this conclusion is GDFs. It is possible that a pre-1987 gas station could have a high pre-baseline throughput rate. If such a site requests a throughput increase under these proposed revisions, it is possible that this GDF's health risk could exceed 10 in a million cancer risk due to the previously grandfathered portion of the throughput limit. Since the gas stations that are most likely to exceed a project health risk limit are already using TBACT, it may not be possible for a gas station to

reduce the current risk below the 10 in a million project cancer risk limit. Also, since gas stations do not usually include any other sources that could generate contemporaneous health risk reductions, these net project risk limits are unlikely to be employed. Therefore, it is possible that the Air District would need to deny a request for a throughput increase in such a case. While this outcome is possible, the Air District feels that this is not a likely or common outcome, because the Air District is currently processing about 10 HRAs per year for new or modified gas stations and was not able to find a pre-1987 gas station among any of the recent applications.

Administrative Requirements

This section of the rule identifies various administrative requirements that are necessary for the Air District to determine compliance with this rule. These administrative requirements include various guidelines and other publications related to this rule that the Air District must periodically update.

Sections 2-5-401: Health Risk Screening Analysis Requirements: The Air District is proposing to change the term "Health Risk Screening Analysis (HRSA)" to "Health Risk Assessment (HRA)" for consistency with OEHHA's terminology.

Sections 2-5-402: Health Risk Screening Analysis Guidelines: The Air District is proposing to change the term "Health Risk Screening Analysis (HRSA)" to "Health Risk Assessment (HRA)" for consistency with OEHHA's terminology.

Sections 2-5-406: Applicability Criteria and Administrative Procedures for Contemporaneous Health Risk Reduction Projects: The Air District is adding this section as a companion to Sections 2-5-115 and 2-5-303.

This section limits the projects that may use net project risk limits to projects involving pre-1987 modified sources. Furthermore, to ensure that this provision does not allow any backsliding of requirements, the applicant must demonstrate that the pre-1987 baseline emissions from the proposed modified source are causing the proposed project to exceed the project risk limits. This will ensure that any new sources associated with this project or the emission increases from the modified source will be limited to the same risk thresholds as they would have been under the current provisions.

The administrative procedures in this section are necessary to ensure that the Air District has sufficient information to calculate contemporaneous TAC emission reductions and to evaluate the pre-project health risks from any source shut-downs or alterations. The key goal of these procedures is to ensure that the health risk reductions achieved by contemporaneous source emission reductions are actually benefitting the receptors that will be impacted the most by the proposed project. Thus, the net health risk for each receptor must meet the net project risk limits.

Monitoring and Records

This section of the rule identifies monitoring and record keeping requirements. The current rule indicates that the Air District may impose any reasonable monitoring or record keeping requirements deemed necessary to ensure compliance with this rule. The Air District is not proposing any changes to this section of the rule.

Manual of Procedures

This section of the rule identifies various procedures that must be followed when demonstrating compliance with the standards in this rule. The Air District is proposing revisions to these sections to streamline and improve emission calculation procedures for modified sources.

Section 2-5-601: Emission Calculation Procedures: As discussed for Section 2-5-216, the Air District is proposing to eliminate the January 1, 1987 baseline for modified source emission calculations. The Air District is revising Section 2-5-601 to reflect this change.

The current procedures for a modified source involve calculating the total post-1987 emission increases for a modified source. Permitted, potential or actual TAC emission levels at the January 1, 1987 baseline date can be difficult to identify and verify. In addition, a modified source may be subject to National Emission Standards for Hazardous Air Pollutants (NESHAPs), ATCMs, or Air District rules that would require an additional assessment of an adjusted baseline TAC emission rate.

In Sections 601.3 and 601.4, the Air District is proposing to streamline emission calculation procedures for modified sources by removing the January 1, 1987 baseline date and assessing the source and project health risks on the total post-modification emission rate from the modified source. TAC emission calculation procedures for modified sources will now be the same as for new sources. These changes will ensure that HRA results for a source and a project are unambiguous and clearly assess the total impacts from all sources in the project, regardless of when a source was initially installed. This will also eliminate the need to calculate pre-modification or baseline TAC emissions for most modified sources, unless the applicant is requesting a Section 114 exemption.

The Air District is also proposing to clarify the toxicity weighted emission calculation procedures related to Sections 2-5-114 and 2-5-604.

Overall, the Air District's health risk based compliance assessments will be more comprehensive and more understandable, when the toxic NSR HRA is based on the total post-modification emission rate for all modified sources.

Section 2-5-603: Health Risk Screening Analysis Procedures: The Air District is proposing to change the term "Health Risk Screening Analysis (HRSA)" to "Health Risk Assessment (HRA)" for consistency with OEHHA's terminology.

Section 2-5-604: Calculation Procedures for Toxicity Weighted Emissions: The Air District is making editorial revisions to this section.

Table 2-5-1 Toxic Air Contaminant Trigger Levels

As discussed in Section IV.B of this report, the Air District will remove the current Table 2-5-1 and replace it with the proposed Table 2-5-1. The new Table 2-5-1 includes updated TAC trigger levels, toxicity weighting factors, and health effects values. The Air District has also rearranged the column locations to improve functionality. For example, most people who use this table are looking for the acute and chronic trigger levels for a particular compound. Therefore, these columns are now presented immediately after the compound description information rather than after all the health effects data.

V. IMPACTS OF AIR TOXICS NSR PROGRAM CHANGES

The Air District's proposals to update the Air Toxics NSR Program will increase the stringency of this program. Although the Air District is not proposing any changes to the toxic NSR risk management thresholds, 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 NSR projects will be subject to HRA 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's proposed changes to the Air Toxics NSR Program will reduce the amount of TAC emissions allowed for new projects and will reduce TAC emissions from existing sources undergoing modification.

The Air District conducts about 300 HRAs per year for a wide variety of new and modified sources. Common source types that require HRAs include: diesel-fired internal combustion engines, other types of combustion operations, and gasoline stations. The Air District also conducts NSR HRAs for remediation operations, cement plants, concrete batch plants, asphalt plants, petroleum refineries, coating and solvent operations, tanks and loading operations, landfills, waste water treatment plants, metal melting plants, coffee roasters, and other types of industrial facilities.

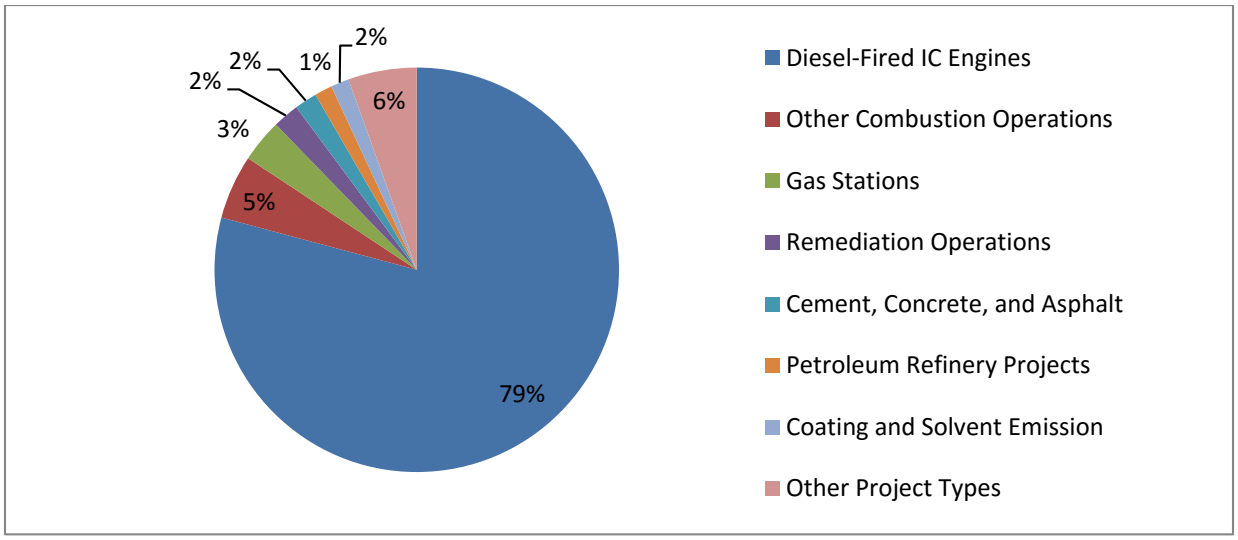

Figure 4. Types of Toxic NSR Projects that Triggered HRAs during 2010-2015.

As shown above, about 80% of the toxic NSR HRAs that the Air District conducted in 2010-2015 involved diesel-fired IC engines. The Air District's HRA trigger level for diesel engine exhaust particulate matter is currently 0.34 pounds per year. At this trigger level, most diesel fired engine projects, including small emergency standby engines, are currently subject to Air District HRA requirements pursuant to Regulation 2, Rule 5.[5] Although the Air District is proposing to reduce the diesel engine exhaust particulate matter threshold to 0.26 pounds per year, this proposed trigger level reduction is not expected to increase the number of diesel engine projects subject to HRA requirements because almost all diesel engine projects are currently subject to HRA requirements and the Air District is proposing to exempt very small engines (less than 50 bhp) from the HRA requirement. In fact, the number of diesel fired IC engine projects subject to HRA requirements may decrease in the future as low emission Tier 4 engine projects become more common.[6]

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. As discussed in Section IV.B. of this report, the Air District is proposing to reduce the HRA trigger levels for most carcinogens by about 30% and to reduce the HRA trigger levels for a few multi-pathway carcinogens by about 90%. These HRA trigger level reductions will increase the number of toxic NSR projects that are subject Air District HRA requirements. The Air District expects that an additional 100 projects per year may require HRAs as a result of the proposed trigger level reductions. The estimated number of HRA increases per year by project type are: 15 per

[5] A 50 bhp diesel-fired emergency standby engine meeting Air District TBACT requirements and operating for no more than 20 hours per year for reliability related testing would trigger Air District HRA requirements under the current HRA trigger level for diesel PM (0.34 pounds per year).

[6] A Tier 4 diesel-fired emergency standby engine (< 150 bhp) and operating for no more than 50 hours per year for reliability related activities would not trigger an HRA at the proposed diesel PM trigger level of 0.26 pounds per year.

year for non-diesel engine combustion operations, 40 per year for gas stations, 10 per year for remediation operations, 10 per year for petroleum refineries, and 25 per year for other project types.

Based on a review of recent Air District HRA results, most projects subject to HRA requirements and using the 2015 risk calculation procedures will comply with project risk limits without any additional project revisions, because most toxic NSR projects have health impacts that are far below the Regulation 2, Rule 5 project risk limits. For example, a diesel-fired engine powering an emergency generator that meets TBACT and has a project cancer risk of 7 in a million using AERMOD dispersion modeling procedures and current Air District risk calculation procedures would have a project cancer risk of 9.8 in a million or less using the proposed risk calculation procedures. Therefore, this engine project would comply with the Regulation 2, Rule 5 project risk limit of 10 in a million cancer risk when using the proposed new cancer risk calculation procedures without any project changes. At least two-thirds of the toxic NSR projects that the Air District has evaluated since 2010 had a cancer risk less than 7 in a million.

The Air District expects that the proposed rule changes will increase the average number of Toxic NSR HRAs from 300 per year to 400 per year. About one third of these HRA projects may need to undergo additional HRA refinements. About 100 projects per year require HRA refinements currently compared to about 130 HRA refinements per year for the new provisions. 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.

Risk reduction measures include methods that reduce toxic emissions from the source as well as methods that reduce receptor exposure to those toxic emissions. The most common and least expensive toxic emission reduction methods include limiting throughput rates and source operating times. Abatement devices and enclosures may also be used to reduce TAC emissions. For example, diesel particulate filters can be added to engines to reduce diesel particulate matter. Carbon adsorbers reduce organic TAC emissions such as benzene and perchloroethylene. Oxidation catalysts may be used on combustion devices to reduce formaldehyde emissions. Enclosures and baghouses may be used to capture and control particulate matter containing toxic metals.

Reducing receptor exposure to emissions can be accomplished in a variety of ways. Relocating a source farther away from a receptor and increasing stack heights will reduce receptor exposure concentrations by allowing more time or distance for dispersion of the pollutants in the atmosphere. Enclosing a fugitive emission source and venting it through a stack or changing stack orientations can also encourage atmospheric dispersion and reduce TAC concentrations at the receptor location. Changing the time of day that a source is operating to avoid receptor exposure (such as prohibiting diesel engine operations near schools during times when children are at school) is another possible exposure reduction measure.

Based on data collected for recent permit applications that triggered HRA, the Air District has estimated the number and types of projects that may trigger risk reduction measures due to the proposed rule revisions. The Air District has also identified the most likely risk reduction measures for each of these project types. The Air District's projections for the types and number of projects that may trigger risk reductions and the types of possible risk reduction measures for these projects are summarized in Figure 5.

Figure 5: Additional Projects Triggering Risk Reduction and Potential Risk Reduction Measures

Types of Projects	Projected Total Number of Projects Per Year (1)	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
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		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				possible	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			2			revise source location
Coating and Solvent	1	possible				possible	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

(1) 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.

GDF applications are included in the Air District projections in Figure 5. 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 HRA 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.

VI. ECONOMIC IMPACTS

The California Health and Safety Code generally requires two different economic analyses for proposed regulations by an air district. The first (H&S Code §40728.5) is a socioeconomic analysis of the adverse impacts of compliance with the proposed regulation on affected industries and business. The second analysis (H&S Code §40920.6) is an incremental cost effectiveness analysis when multiple compliance approaches have been identified by an air district. Figure 6 in Section VI.A of this report lists the estimated costs of compliance with each element of the proposed Toxics NSR Program Revisions that has a significant cost. Section VI.B of this report discusses the required socioeconomic analysis that is based on the costs in Section VI.A. Section VI.C of this report discusses the incremental cost analysis.

A. Cost of Compliance

Figure 6. Compliance Costs for Proposed Revisions to Air Toxics NSR Program

Type of Control	Typical Control Costs	Maximum Control Cost
Limit Throughput or Operating Hours (1)	$ 0/year	Potential for Reduced Profitability
Diesel Particulate Filters (1)	$ 3,500/year – $11,400/year	$63,681/year
Oxidation Catalysts (1)	$14,500/year	$116,400/year
Enclosures and Baghouses (2)	$7,000/year	
Carbon Adsorbers (2)	$40,000/year	
Increased Stack Height (1)	$1481/year	
TAC Testing (1)	$2310/year	

(1) BAAQMD data based on specific projects and draft control measure research (2016)
(2) South Coast Air Quality Management District, Revised Draft Socioeconomic Assessment for Proposed Rules 212, 1401, 1401.1, and 1402 (May 2015)

B. Socioeconomic Analysis

Section 40728.5 of the California Health and Safety Code requires an air district to assess the socioeconomic impacts of the adoption, amendment or repeal of a rule if the rule is one that "will significantly affect air quality or emissions limitations." BAE Urban Economics of San Francisco, California has prepared a socioeconomic analysis of the proposed revisions to the Toxics NSR Program and Regulation 2, Rule 5. This analysis is based on the costs of compliance with the proposed rule discussed in Section VI.A, and is attached to this report as Appendix D.

The socioeconomic analysis concludes that – on average – the proposed Air Toxics NSR Program and Rule 2-5 revisions would not result in significant economic impacts. However, these revisions could potentially result in significant economic impacts for three individual industries. The industry type and the assumed control technology on which this finding was based are presented below in Figure 7. Economic impacts are deemed significant if the compliance costs exceed 10% of the profits for a specific industry type. For this analysis, BAE assumed that projects would use the most expensive compliance option. For each of the industries listed below, less expensive compliance options are available.

Figure 7. Industries with Potentially Significant Economic Impacts

Affected Industry	Potential Control Technology (1)	Compliance Costs as % of Profits
small hotels and motels (excluding casino hotels)	diesel particulate filters on emergency standby engines	16.77%
small electric power generation facilities	oxidation catalysts on gas fired engines	11.93%
metal coating, engraving, and allied services	carbon adsorbers on coating operations	16.91%

(1) Less expensive control technologies are available.

Assuming the business would close rather than implement the above controls or modify the project to use less expensive controls, annual lost sales from these industries would be $34.7 million plus a loss of 156 jobs. Including potential indirect and induced impacts on the region results in a total regional impact of $57.6 million in annual sales losses and 284 job losses. The IMPLAN model estimates that the gross regional product from the nine counties in the Bay Area is approximately $675 billion annually. The total direct, indirect, and induced impacts from these three potentially affected industries is equal to 0.09% of gross regional product for the Bay Area region.

In addition, the following small businesses may have a significant economic impact:

- NAICS 6111, Educational Services
- NAICS 712, Museums, Historical Sites, and Similar Institutions
- NAICS 622, Hospitals
- NAICS 721110, Hotels (except Casino Hotels) and Motels
- NAICS 562910, Remediation Services
- NAICS 3273, Cement and Concrete Product Manufacturing
- NAICS 332812, Metal Coating, Engraving, and Allied Services to Manufacturers
- NAICS 562920, Materials Recovery Facilities

In conclusion, the proposed Toxic NSR Program and Rule 2-5 revisions will not have any significant economic impacts on the region as a whole, but economic impacts may be significant for three industry types and eight small business types. This analysis was based on worst-case assumptions, such as use of the most expensive control technology

and closure of the business in response to rule requirements. The Air District notes that less expensive control options are available and that business will typically choose project modification rather than business closure. While significant socioeconomic impacts are possible for the industry types and small business noted above, significant socioeconomic impacts are not a likely outcome.

C. Incremental Cost Effectiveness

Section 40920.6 of the California Health and Safety Code requires an air district to perform an incremental cost analysis for any proposed Best Available Retrofit Control Technology (BARCT) rule or for a rule that is part of an Alternative Emission Reduction Strategy as described in Section 40914 of the Health and Safety Code. This analysis is omitted here because the proposed rule revisions do not include either of these elements.

VII. REGULATORY IMPACTS

Section 40727.2 of the California Health and Safety Code requires an air district, in adopting, amending, or repealing an air district regulation, to identify existing federal and air district air pollution control requirements for the equipment or source type affected by a proposed change in air district rules. The air district must then note any differences between these existing requirements and the requirements imposed by the proposed change.

There are currently no federal or state NSR regulations specific to TACs. State ATCMs and federal NESHAPS regulate some of the same types of stationary sources (e.g., diesel engines, gasoline stations) as the types of stationary sources that are commonly subject to Air District Toxic NSR. However, the Air District would apply these state and federal standards during the permit evaluation. Regulation 2-5-301 requires TBACT at certain risk levels; TBACT would be at least as stringent as state and federal requirements. Indeed, CARB has often stated that ATCM standards are TBACT and the Air District generally agrees but occasionally establishes TBACT for particular sources that are more stringent than ATCM standards. Regulation 2-5-302 and the proposed Section 2-5-303 establish health risk based limits for NSR projects. There are no federal or state health risk based limits that apply on a project level basis. The Air District has established public notification levels and mandatory risk reduction levels through the California Air Toxics “Hot Spots” Act of 1987, but the risk reduction levels in this program apply on a facility-wide basis. In cases where a project represents the entire facility’s toxic emissions, the Rule 2-5 project risk limits are at least as stringent as the “Hot Spots” requirements.

VIII. ENVIRONMENTAL IMPACTS

Pursuant to the California Environmental Quality Act (CEQA), the Air District has had an initial study prepared by Environmental Audit, Inc. of Placentia, California for the proposed revisions to the Air Toxics NSR Program and Rule 2-5. The initial study concludes that there are no potential significant adverse environmental impacts associated with the proposed program and rule revisions. A negative declaration will be proposed for adoption by the Air District Board of Directors and is included in Appendix E of this report. The initial study and negative declaration will be circulated for public comment prior to the public hearing for this rule.

IX. AIR DISTRICT COST RECOVERY

The Air District has the authority to assess fees to regulated entities for the purpose of recovering the reasonable costs of implementing and enforcing applicable regulatory requirements. On March 7, 2012, the Air District's Board of Directors adopted a Cost Recovery Policy that specifies that newly adopted regulatory measures should include fees that are designed to recover increased regulatory program activity costs associated with the measure (unless the Board of Directors determines that a portion of those costs should be covered by tax revenue).

In accordance with the adopted Cost Recovery Policy, the Air District assesses risk screening fees for new and modified sources that are required to undergo HRAs pursuant to Regulation 2, Rule 5. The risk screening fees in Regulation 3: Fees, Schedules B-K have recently been updated (effective July 1, 2016). The Air District does not anticipate a need to make any additional adjustments to risk screening fees at this time.

X. RULE DEVELOPMENT AND PUBLIC CONSULTATION PROCESS

During development of this rule amendment, the Air District posted a draft version of the proposed revisions to Regulation 2, Rule 5 on the Air District web site on January 13, 2016 and presented the proposed revisions to this rule at a series of Community Open Houses held in Redwood City on January 28, 2016, in San Jose on February 2, 2014, and in Richmond on February 4, 2016. The Air District accepted comments on the proposed rule revisions through March 9, 2016.

The Air District received a number of inquiries regarding the proposed rule revisions and received two written comments. The commenters expressed concerns about the following Air District proposals: (1) removal of the trigger level table from the regulation, (2) elimination of the January 1, 1987 baseline from the emission calculation procedure for modified sources that initially began operating prior to January 1, 1987, and (3) revision of the definition of worker receptor. The commenters also identified concerns about the potential impacts of these proposed rule revisions on GDFs and engines smaller than 50 bhp, and the commenters suggested additional definition revisions to

improve conformance with OEHHA HRA Guidelines and CARB/CAPCOA Risk Management Guidelines.

After considering the comments received on this proposed rule revision and additional staff analysis, the Air District made the following changes to the initial proposed rule revisions:

(1) retained the trigger level table in the rule as Table 2-5-1,

(2) added alternative net health risk limits for pre-1987 modified sources,

(3) removed the proposed revision to the worker receptor definition,

(4) delayed implementation of the 2015 HRA guidelines for GDFs,

(5) added a limited exemption from HRA requirements for engines smaller than 50 bhp,

(6) clarified several exemptions, definitions, and procedures.

Sections IV.B and IV.C of the report explain the Air District's rationale for each of these changes.

One commenter requested clarification about implementation of the revised rule. The proposed rule revisions will become effective upon adoption by the Air District Board of Directors. Permit applications that have been declared complete prior to this adoption date will be handled in accordance with the current rule and procedures. Permit applications that are declared complete after this adoption date will be handled in accordance with the revised rule and procedures.

XI. CONCLUSION

Pursuant to Section 40727 of the California Health and Safety Code, the proposed new rule must meet findings of necessity, authority, clarity, consistency, non-duplication, and reference. The proposed amendments to the Air Toxics NSR Program and Regulation 2, Rule 5 are:

- Necessary to ensure conformance with statewide HRA and risk management guidance and to improve transparency of the Air District's HRA results for individual projects;
- Authorized under Sections 40000, 40001, 40702, 40725 through 40728, and 44391 of the California Health and Safety Code;
- Written or displayed so that their meaning can be easily understood by the persons directly affected by them;
- Consistent with other Air District rules, and not in conflict with state or federal law;

- Non-duplicative of other statutes, rules or regulations. To the extent duplication exists, such duplication is appropriate for execution of powers and duties granted to, and imposed upon, the Air District; and
- Implementing, interpreting or making specific the provisions of the California Health and Safety Code Sections 40000, 40702, and 44391.

The proposed program and rule amendments have met all legal noticing requirements, have been discussed with the regulated community, and reflect consideration of the input and comments of affected and interested parties. Air District staff recommends adoption of the proposed amendments to Regulation 2, Rule 5.

ACRONYM GLOSSARY

APCO – Air Pollution Control Officer

ASF – Age Sensitivity Factor

ATCM – Airborne Toxic Control Measure

BAAQMD – Bay Area Air Quality Management District (or the Air District)

BACT – Best Available Control Technology

BARCT – Best Available Retrofit Control Technology

bhp – brake-horsepower

CAPCOA – California Air Pollution Control Officers Association

CARB – California Air Resources Board

CAS – Chemical Abstract Service

CEQA – California Environmental Quality Act

CP – Cancer Potency

CPF – Cancer Potency Factor

CREL – Chronic Reference Exposure Level

DBR – Daily Breathing Rate

EPA – Environmental Protection Agency

FAH – Fraction of Time at Home

GDF – Gasoline Dispensing Facility

H&S Code – California Health and Safety Code

HI – Hazard Index

HQ – Hazard Quotient

HRA – Health Risk Assessment

HRSA – Health Risk Screening Analysis

MACT – Maximum Achievable Control Technology

MEI – Maximally Exposed Individual

NAICS – North American Industry Classification System

NESHAP – National Emission Standards for Hazardous Air Pollutants

NSR – New Source Review

OEHHA – Office of Environmental Health Hazard Assessment

PAH – Polycyclic Aromatic Hydrocarbons

PCB – Polychlorinated Biphenyls

PCDD – Polychlorinated Dibenzo-p-Dioxins

PCDF – Polychlorinated Dibenzofurans

PEF – Potency Equivalency Factors

PM – Particulate Matter

REL – Reference Exposure Level

TAC – Toxic Air Contaminant

TBACT – Best Available Control Technology for Toxics

TEF – Toxic Equivalency Factor

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

PROPOSED AMENDMENTS TO:

BAAQMD REGULATION 2, RULE 5:
NEW SOURCE REVIEW OF TOXIC AIR CONTAMINANTS

Staff Report
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APPENDIX A

Proposed Rule Revisions

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

PROPOSED AMENDMENTS TO:

BAAQMD REGULATION 2, RULE 5:
NEW SOURCE REVIEW OF TOXIC AIR CONTAMINANTS

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APPENDIX B

Proposed Methodology for Derivation of Toxic Air Contaminant Trigger Levels

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

PROPOSED AMENDMENTS TO:

BAAQMD REGULATION 2, RULE 5:
NEW SOURCE REVIEW OF TOXIC AIR CONTAMINANTS

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APPENDIX C

Proposed Revisions to Air District Health Risk Assessment Guidelines

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

PROPOSED AMENDMENTS TO:

BAAQMD REGULATION 2, RULE 5:
NEW SOURCE REVIEW OF TOXIC AIR CONTAMINANTS

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APPENDIX D

Socioeconomic Impacts Analysis

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

PROPOSED AMENDMENTS TO:

BAAQMD REGULATION 2, RULE 5:
NEW SOURCE REVIEW OF TOXIC AIR CONTAMINANTS

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APPENDIX E

CEQA: Draft Initial Study and Proposed Negative Declaration