South Coast Air Quality Management District

AB 2588 and Rule 1402 Supplemental Guidelines

(Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act)

October 2020

Preface

This document (Supplemental Guidelines) is a supplementary guide to the State of California Office of Environmental Health Hazard Assessment (OEHHA) document entitled *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (2015 OEHHA Guidance Manual). The 2015 OEHHA Guidance Manual contains several sections that refer users to their local air district for specific or additional requirements and this document describes and clarifies the requirements for the South Coast Air Quality Management District (South Coast AQMD). This version of the Supplemental Guidelines updates the previous September 2018 version.

The Supplemental Guidelines are intended to be a "living" document, which staff will update periodically as needed. The major revisions to this document from the previous September 2018 version include:

- Reorganizing the document to improve readability and more closely follow the paths a facility may take under Assembly Bill 2588 (AB 2588) and South Coast AQMD Rule 1402

- Providing additional guidance on source tests, clarifying requirements for receptor grids, Air Toxics Inventory Reports (ATIR), Risk Reduction Plans (RRP), and Potentially High Risk Level facilities

The major revisions to this document from the previous November 2016 version include:

- Adding a description for the Voluntary Risk Reduction Program (refer to Section 1.5 and Table 2; note that these references are for the current version of this guideline dated October 2020);

- Adding a Health Risk Assessment (HRA) Summary Form (refer to Attachment A to Appendix B);

- Removing tables that are updated frequently and are listed in other South Coast AQMD rules or guidelines and including a reference to the applicable table(s) in the existing South Coast AQMD rule or guidelines instead; and

- Updating terms and acronyms (refer to Appendix G).

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Introduction

In 1987, the California legislature adopted the Air Toxics "Hot Spots" Information and Assessment Act; also known as AB 2588. The goals of the AB 2588 Program are to collect toxic air contaminant (TAC) emissions data, identify facilities having localized impacts, determine health risks, and notify affected individuals. In 1992, the California legislature added a risk reduction component, the Facility Air Toxic Contaminant Risk Audit and Reduction Plan, or Senate Bill 1731 (SB 1731), which requires facilities to develop and implement measures to reduce impacts if risks are found above thresholds specified by air districts. South Coast AQMD Rule 1402 - Control of Toxic Air Contaminants from Existing Sources implements various aspects of AB 2588 and SB 1731 including public notification and risk reduction requirements for facilities with health risks that are above specified thresholds.

Rule 1402 was amended in October 7, 2016 to include a provision to allow facilities to participate in a Voluntary Risk Reduction Program. This program is an alternative to complying with the traditional AB 2588 Program and Rule 1402 approach that provides qualifying facilities an opportunity to reduce health risks below the Notification Risk Level through a Voluntary Risk Reduction Plan (VRRP) and employ a Modified Public Notification approach as specified in Rule 1402. The Voluntary Risk Reduction Program will achieve risk reductions both sooner and beyond what is required in the traditional AB 2588, SB 1731, and Rule 1402 process.

There are five important components to the AB 2588 program as follows:

- *Emissions Reporting* - Facilities subject to the AB 2588 Program submit an air toxics inventory every four years through South Coast AQMD's Annual Emissions Reporting (AER) Program. Facilities are allowed to simplify AER reporting by aggregating common sources.

- *Prioritization* - From the simplified reported toxic emissions submitted through AER, South Coast AQMD staff prioritizes facilities, using a procedure approved by the Governing Board, into three categories: high, intermediate, and low priority. High priority facilities[1] are then asked to prepare an ATIR. In contrast to the simplified reporting allowed under AER, the ATIR requires greater detail which includes process, device, and stack information for each piece of equipment.

- *Health Risk Assessment* - From the detailed reported toxic emissions submitted through the ATIR, high priority facilities must prepare an HRA).

- *Public Notice* - If the health risks reported in the HRA exceed specified public notification thresholds, then the facility is required to provide public notice to the affected community.

[1] A high priority facility has separate meaning from the Potentially High Risk Level Facility definition of Rule 1402 (see Chapter 6).

- *Risk Reduction* - If the health risks reported in the HRA exceed specified action risk levels in Rule 1402, then the facility is required to reduce their health risks below the action risk levels.

Figure 1 below provides an overview of the AB 2588 Program and the different paths a facility may follow under Rule 1402.

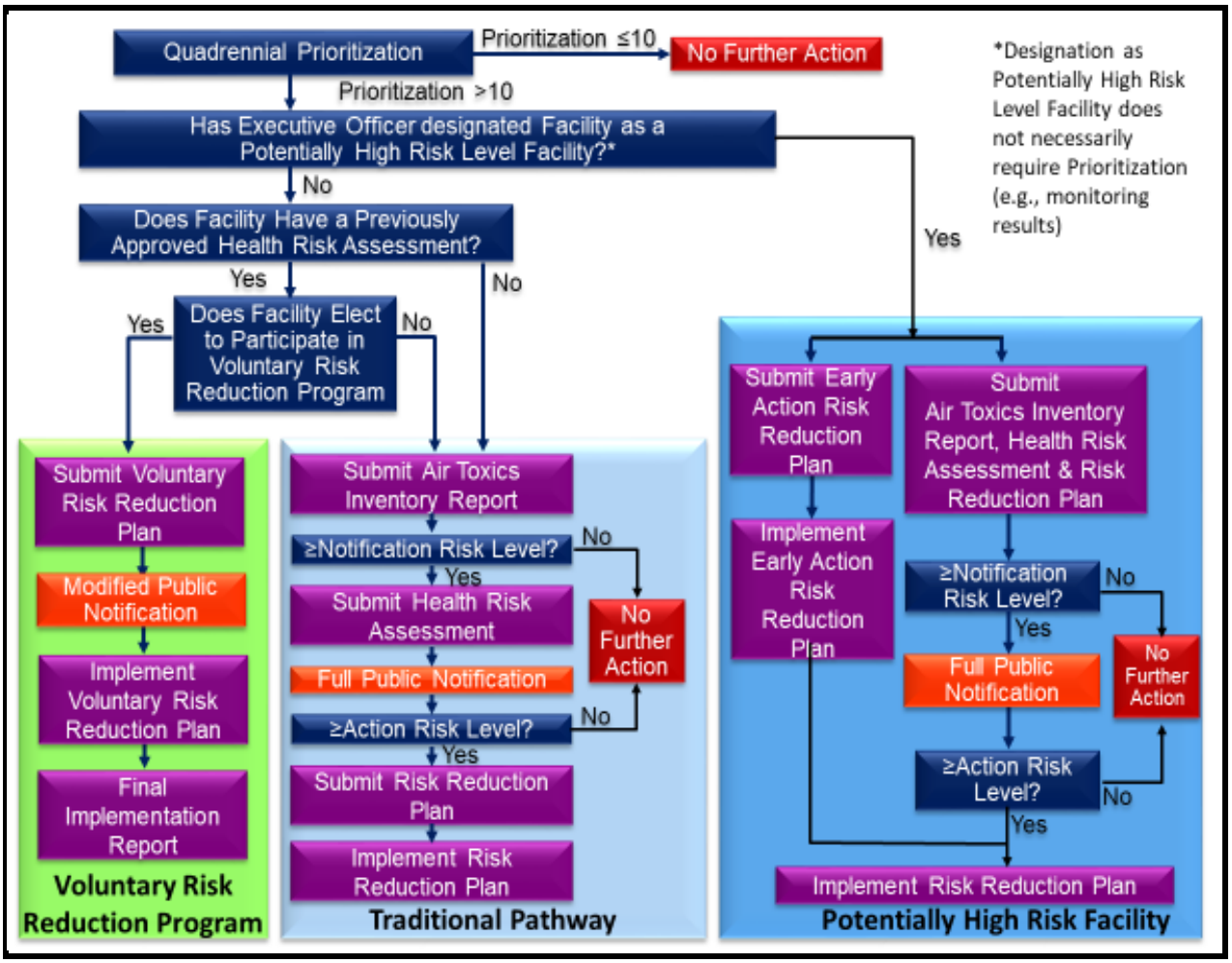

Figure 1 — Overview of the AB 2588 Program and illustration of the paths by which a facility may follow

These Supplemental Guidelines are to be used in conjunction with the 2015 OEHHA Guidance Manual prepared by OEHHA.[2] Facilities required to submit health risk assessments to the South Coast AQMD must follow the 2015 OEHHA Guidance Manual pursuant to Health and Safety Code 44360(b)(2). Since the 2015 OEHHA Guidance Manual defers to the local air district for specific, localized, or additional requirements, these Supplemental Guidelines address those areas

[2] https://oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0

and other issues that have arisen during the implementation of the AB 2588 Program at South Coast AQMD.

A certification form must be submitted to South Coast AQMD with all documents and correspondence relating to health risk assessments.[3]

Please visit South Coast AQMD's AB 2588 Program webpage provided below for additional information, documents, and any questions regarding this document, health risk assessment methodology, and other AB 2588 Program issues.[4] Questions may be emailed to AB2588@aqmd.gov or asked via phone at (909) 396-3610.

[3] https://www.aqmd.gov/docs/default-source/aqmd-forms/AB2588/ab2588-certification-form.pdf
[4] https://www.aqmd.gov/home/rules-compliance/compliance/toxic-hot-spots-ab-2588

1. Emissions Reporting

1.1 Facilities Subject to AB 2588 Reporting Requirements

South Coast AQMD's AER Program is used for:

- All facilities subject to AER, including AB 2588 facilities who report their annual emissions of criteria pollutants and any of the TACs and ozone depleting compounds (ODC) specified in South Coast AQMD's Rule 301(e). The list of compounds can be found in Rule 301, Table IV.[5] The report comprises the annual emissions report for TACs.

- AB 2588 facilities which are subject to quadrennial (once in four years) reporting requirements. These facilities report any one of approximately 177 TACs and ODCs from a detailed list of substances in Table A-1 of *AB 2588 Quadrennial Air Toxics Emissions Inventory Reporting Procedures*.[6] This report comprises the quadrennial emissions report for TACs.

  Facilities subject to the AER Program calculate and report their emissions based on their throughput data (e.g., fuel usage, material usage, etc.), appropriate emission factors, and control efficiency, if applicable. The method for reporting emissions is described on South Coast AQMD's website.[7]

The data collected in the AER Program in addition to information from other sources (i.e. monitoring data, source specific information, etc.) are used to determine potential candidates for the AB 2588 Program. Facilities that meet one of the following AB 2588 Program qualification conditions are required to prepare and submit a quadrennial air toxics inventory if:

- They emit 10 tons per year or more of VOC, NOx, SOx, or PM;

- They emit 25 tons per year or more of a combination of VOC, NOx, SOx, and PM;

- They emit less than 10 tons per year of VOC, NOx, SOx, or PM, but the facility activity is listed in California Air Resources Board's (CARB) Emission Inventory Criteria and Guidelines for the Air Toxics "Hot Spots" Program;[8]

- Their emissions exceed one or more of the reporting thresholds in Table I or II in *Rule 1402 – Control of Toxic Air Contaminants From Existing Sources*;[9] or

5 https://www.aqmd.gov/docs/default-source/rule-book/reg-iii/rule-301-July-2019.pdf
6 https://www.aqmd.gov/docs/default-source/planning/risk-assessment/quadrennial_atir_procedure.pdf
7 https://www.aqmd.gov/home/rules-compliance/compliance/annual-emission-reporting
8 https://www.arb.ca.gov/ab2588/2588guid.htm
9 https://www.aqmd.gov/docs/default-source/rule-book/reg-xiv/rule-1402.pdf

- The Executive Officer of South Coast AQMD determines that emissions levels from the facility have the potential to cause an exceedance of risk reduction thresholds.

1.2 Quadrennial Emissions Reporting and Base Year Emissions Inventory

Facilities subject to the AB 2588 Program must provide a quadrennial emissions report for TACs. These substances are listed in Table A-1 of *AB 2588 Quadrennial Air Toxics Emissions Inventory Reporting Procedures,* which provides the substance names and associated Chemical Abstracts Service (CAS) numbers. The degree of accuracy is also provided for each substance. The degree of accuracy is a de minimis emission level for reporting. As a result, facility-wide emissions of the substance which are greater than one-half of their corresponding degree of accuracy must be inventoried and reported.

As part of the quadrennial emissions report for TACs, facilities must also provide the distances to the nearest residential and commercial receptors, and the facility operating schedule (e.g., operating hours per day, operating days per week, and operating weeks per year). It is critical that facilities estimate their toxic emissions as precisely and accurately as possible. These reported emissions are used to prioritize the facility as discussed in Section 1.4 Prioritization Procedure. A facility's prioritization score determines its fees and whether it is necessary to prepare an ATIR or VRRP (if eligible).

When a facility is notified to prepare an ATIR or VRRP, the quadrennial TACs emissions report is used as the 'base year emissions inventory.' This same base year emissions inventory is also used to prepare an HRA, Public Notice, and RRP.

1.2.1 Toxic Air Contaminants Reporting Requirements

Facilities subject to the submittal of HRAs under the AB 2588 Program must estimate and submit their ATIR using the latest approved version of the Hotspots Analysis and Reporting Program (HARP).[10] This ATIR shall include, at a minimum, the elements outlined in Appendix A of these Supplemental Guidelines. OEHHA has grouped the substances to be reported into three groups as shown in Appendix A of the 2015 OEHHA Guidance Manual. There are distinct reporting requirements for the three groups as follows:

- Appendix A-I Substances – All emissions of these substances must be quantified in the ATIR and HRA including those calculated in the ATIR as below the degree of accuracy or below detection limits.

- Appendix A-II Substances – Emissions of these substances do not need to be quantified in the ATIR and HRA; however, facilities must report whether the substances are used, produced, or otherwise present on-site. These substances can be simply listed in a table in the HRA.

- Appendix A-III Substances – These substances only need to be reported in a table in the ATIR and HRA if they are manufactured by the facility.

[10] https://ww2.arb.ca.gov/our-work/programs/hot-spots-analysis-reporting-program

The intent of the AB 2588 Program is that facilities performing HRAs use the process rates and emissions data submitted in their quadrennial emissions inventory report. South Coast AQMD receives requests from facilities to use process rates and emissions data other than those reported in their quadrennial emissions inventory report. As a general policy, South Coast AQMD will allow emission changes only if (1) the changes conform to one of the situations discussed in the following sections and (2) any emission increases are also included.

1.2.2 Diesel Particulate Matter Emissions

Diesel particulate matter was identified as a TAC by CARB in 1998 and added to the list of compounds in South Coast AQMD *Rule 1401 – New Source Review* on March 7, 2008. Under the current AB 2588 Air Toxics "Hot Spots" Emission Inventory Criteria and Guidelines Regulation, amended on August 27, 2007, facility operators are required to include health risks of any diesel exhaust particulate emissions from stationary emergency and prime compression ignition internal combustion engines, as well as portable diesel engines. Please clearly identify emergency diesel internal combustion engines (DICEs) and their corresponding emissions. This is essential because, on January 5, 2007, the South Coast AQMD Governing Board adopted separate public notification procedures for emergency DICEs.[11]

1.2.3 Control Efficiencies

Control efficiencies shall be included in emissions calculations when applicable. For example, spray booths may include a transfer efficiency and a filter efficiency. Some devices with air pollution control devices may have a capture efficiency and a collection efficiency. Control efficiencies may not apply to every type of TAC from a device, as some air pollution control devices are designed for only specific types of TACs.

Please note that control efficiency is an input to both AER and the Emission Inventory Module (EIM) in HARP. However, unlike the AER software, EIM currently does not use the control efficiency for any calculation purposes (i.e., controlled emissions are entered separately). Emissions calculations that include control efficiencies in the EIM shall be included as part of the supporting documentation for the ATIR.

1.3 Changes to Emissions and Process Data

1.3.1 Computational Errors

Computational errors in the quadrennial emissions inventory report must be reported to South Coast AQMD staff as soon as they are detected. Written requests to correct errors for inclusion in the risk assessment must include documentation of the nature of the error and calculations to show how the original emission value was determined and how correcting the computational error changes this value.

If computational errors or conservative assumptions were made in the quadrennial emissions report for TACs that overestimated emissions and resulted in a High Priority classification, the facility may correct the errors and submit the corrected estimates and supporting documentation to

[11] http://www3.aqmd.gov/hb/2007/January/070128a.html

AB 2588 Program staff. The facility must include in their submission the nature of the error and calculations showing how the original emission estimate was determined and how the correction changes this value.

Please note that South Coast AQMD staff must use process rates and emissions from the quadrennial emissions reporting year to prioritize a facility. Changes in emissions estimates due to changes in process rates in years other than the quadrennial emissions reporting year cannot be used to re- categorize a facility. See Section 4.10 for further details.

1.3.2 Source Test Results

Source test results may be used for quadrennial reporting only if they have been previously approved by South Coast AQMD. The source test must be representative of the current operating conditions of the equipment. Additional documentation may be required to demonstrate that the equipment or process has not changed since the time of the source test.

Facilities may conduct a source test after being notified to submit an ATIR. Under these circumstances, the ATIR must still be submitted by the original deadline for all other devices that are not being source tested. Facilities shall submit a source test protocol to South Coast AQMD for approval. Within 120 days of the source test protocol approval date, the facility shall submit a source test report based on the approved source test protocol. The actual source test must be scheduled as soon as possible since it may take some time to prepare the source test report once the source test is completed. Within 30 days of the source test report approval date, the facility shall submit the portion of the ATIR for the specific device or process for which the source test was conducted. Please refer to South Coast AQMD Rule 1402 (d)(3) for more information on source test requirements.

Data from any new or yet to be completed source tests will not be approved for use in the preparation of the required HRA once an ATIR has already been approved without the use of those source tests. In other words, data from any source tests after the approval of the ATIR cannot be used in the HRA.

If a facility wishes to provide unapproved source test data, it must be presented in an alternate HRA for informational purposes only (i.e., as an appendix to the HRA). See Section 4.11 for information and requirements regarding alternate HRAs. The alternate HRA must be presented with separate findings and discussion of cancer risk and hazard indices. Failure to completely separate the alternate HRA from the required analysis is grounds for rejection of the HRA.

1.3.3 Verifiable Emission Reductions

HRAs in the AB 2588 Program take a 'snapshot' of a base year emissions inventory (or quadrennial emissions inventory report) which is determined by the HRA request letter or notification by the Executive Officer to prepare an ATIR, HRA, or VRRP. This base year is commonly the most recent quadrennial emissions reporting year. Emissions reductions must be verified to be considered as an allowable change. Verified emission reductions are those which are permanent and can be substantiated as occurring during the base year. Verification requirements include specifications in South Coast AQMD's permit issued to the facility, a surrender of the existing South Coast AQMD permit, or reductions as required by South Coast

AQMD rule(s). Letters of intent or internal memos mandating new company policy are not considered verifiable emission reductions.

Examples of verifiable emission reductions include:

- Misreporting of throughput information, inaccurate emission factors, and incorrect emission calculation methodology. In order for this to be considered as a verified emissions reduction, the facility must provide documentation for the corrections, such as copies of the original records for throughput and calculation methodology to substantiate the corrected emissions.

- A previously operating permitted source has been shut down and therefore has no emissions. In order for this to be considered as a verified emissions reduction, the facility must have surrendered the permit to South Coast AQMD. If a facility chooses to retain the permit for possible use of the equipment in the future, that source cannot be considered a permanent verified emissions reduction. Please send a copy of the letter requesting inactivation of the permit and any other supporting documentation to AB 2588 Program staff.

- A listed substance was no longer used and therefore not emitted in a process at the facility. The permit conditions have previously been modified to reflect this change. A copy of the modified permit or, if not yet available, a copy of the 400A application form requesting a change of permit conditions and a copy of the check for filing fee submitted to South Coast AQMD must be sent to AB 2588 Program staff.

- Air pollution control equipment which has been issued a Permit to Construct, has been installed, and was in operation. A copy of the Permit to Construct (and Permit to Operate, if issued) calculations for emission reductions, and references for any emission factors used in the calculations must be provided. If source testing data was used to calculate the emissions, provide a copy of the source test protocol and all documentation relating to the results.

- Requirements of new South Coast AQMD rules that have resulted in permanent and enforceable reductions. Provide documentation on how and when reductions were achieved.

All supporting documentation regarding equipment shutdowns and process modifications must be received by AB 2588 Program staff in order to recalculate the priority score.

1.3.4 Change of Ownership/Operator

If there has been a change in ownership or operator, the new owner/operator must submit the requested reports unless the facility no longer emits any substances required to be reported under AB 2588. In such case, the new facility owner/operator must provide South Coast AQMD staff the necessary documentation to be exempt from reporting requirements of the AB 2588 Program.

1.3.5 Facility Closures

If the entire facility is closed prior to High Priority classification or if a facility is scheduled for complete closure, this information must be reported to AB 2588 Program staff. Upon review, staff will decide whether the facility shall submit an ATIR. Factors that must be considered include the status of permits granted to the facility by South Coast AQMD and the nature of any ongoing activities at the facility. Unless a facility is informed by staff in writing that an ATIR is no longer required, the facility operator must submit an ATIR by the date required.

1.4 Prioritization Procedure

The AB 2588 Program requires South Coast AQMD staff to designate each facility as either high, intermediate, or low priority based on its individual priority score.

Per the requirements of the AB 2588 Program, South Coast AQMD's Prioritization Procedure considers the potency, toxicity, and quantity of hazardous materials released from the facility; the proximity of the facility to potential receptors, including, but not limited to, hospitals, schools, daycare centers, worksites, and residences; and any other factors that South Coast AQMD uses to determine that the facility may pose a significant risk to receptors. South Coast AQMD's Prioritization Procedure also includes adjustment factors for exposure period, averaging times, and the treatment of multipathway pollutants. The Prioritization Procedure is available at South Coast AQMD's website.[12]

A facility receives two scores: one for carcinogenic effects and the other for non-carcinogenic effects. The facility is then ranked using the higher of the two scores. Three categories are used in the ranking: high priority, intermediate priority, and low priority. Facilities designated as high priority are notified by South Coast AQMD staff of their priority score and are required to submit a comprehensive inventory of their air toxic emissions via an ATIR. Facilities ranked as intermediate priority are categorized as "District Tracking" facilities, which are required to submit an air toxics inventory once every four years, using the AER software. Facilities ranked as low priority are exempt from quadrennial emissions reporting. Priority scores are re-calculated each time a facility updates its quadrennial air toxic emissions inventory. Table 2 summarizes the priority score categories and the actions required by each category.

[12] https://www.aqmd.gov/home/rules-compliance/compliance/toxic-hot-spots-ab-2588/prioritization

Table 1 — Priority Score Categories

Category	Facility Priority Score (PS)	Actions
High Priority	PS > 10	Prepare ATIR; update emissions quadrennially through AER
Intermediate Priority	1 < PS ≤ 10	Update emissions quadrennially through AER
Low Priority	PS ≤ 1	Exempt from quadrennial emissions reporting

1.4.1 Meteorological Stations

For prioritization purposes, data from the most representative meteorological station should be used. In most cases, this would be the nearest station by distance. However, an intervening terrain feature may dictate the use of an alternate station.

1.4.2 Receptor Distance

One of the factors considered when prioritizing facilities is the receptor distance. All facilities must report the distances to the nearest residential and commercial receptors as part of their AER submittal. If receptor distances are not provided, then default values (conservative receptor distances) are used by South Coast AQMD staff to prioritize that facility.

1.4.3 Priority Score Calculation

The primary factors that affect the priority score are the emissions inventory and distances to receptors. For more information on how the priority score is calculated, see the Prioritization Procedure at South Coast AQMD's website.12

1.5 Notification for High Priority Score Facilities and Next Steps

Facilities with priority scores considered High Priority will be informed in writing to prepare an ATIR or a VRRP (if eligible). South Coast AQMD staff may allow High Priority facilities to be re-prioritized after any errors or other problems with their quadrennial emissions report are corrected and verified.

Pursuant to South Coast AQMD Rule 1402 (e), South Coast AQMD staff may require the facility to prepare an HRA if emissions levels from the facility have the potential to exceed the Notification Risk Level. If the HRA determines that risks meet or exceed the Notification Risk Level, then public notification will be required. Additional information regarding South Coast AQMD's public notification procedures are available in Section 4.9 and on the AB 2588 website.[13] In addition, if the HRA determines that risks meet or exceed the Action Risk Level, then a RRP will also be required. Both the Notification Risk Level and the Action Risk Level as defined by South Coast AQMD Rule 1402 are summarized in Table 2 below.

[13] https://www.aqmd.gov/nav/about/public-notices/ab-2588-notices

Rule 1402 also includes a provision to allow facilities to participate in the Voluntary Risk Reduction Program. Participating facilities voluntarily reduce their health risk beyond the Action Risk Level to below the Voluntary Risk Threshold (note this is equivalent to the Notification Risk Level; see Table 2) in lieu of the traditional AB 2588 Program process. Facilities also perform a modified public notification that does not require distribution of individual letters and public meetings as in the traditional AB 2588 Program approach. Additional information regarding qualifications and procedures for South Coast AQMD's Voluntary Risk Reduction Program are available on South Coast AQMD's website.[14]

Table 2 — Public Notification, Risk Reduction, and Voluntary Risk Reduction Levels[15]

Risk Level/Threshold	Cancer Risk	Non-cancer Risk	Cancer Burden
Public Notification Level	10 chances in-one-million	Hazard Index of 1	--
Action Risk Level	25 chances in-one-million	Hazard Index of 3	0.5
Significant Risk Level	100 chances in-one-million	Hazard Index of 5	--
Voluntary Risk Threshold	10 chances in-one-million	Hazard Index of 1	--

[14] https://www.aqmd.gov/docs/default-source/planning/risk-assessment/vrrp_guidelines.pdf

[15] See Rule 1402 for complete definitions as lead concentrations also apply for certain risk levels

2. Air Toxics Inventory Reports

2.1 ATIR Format

An ATIR shall be prepared by using the latest approved version of CARB's HARP. In contrast to the simplified reporting allowed under AER, an ATIR requires a larger list of compounds (approximately 450 toxic air contaminants) and greater detail including process, device, and stack information for each piece of equipment.

In general, an ATIR submittal should include a report summary, EIM data, and supporting documentation. See Appendix A for a list of required information for a complete ATIR submittal.

It is critical for a submitted ATIR to be as accurate as possible. The emissions inventory of an approved ATIR determines whether an HRA is required, which in turn determines whether public notification and risk reduction are required. If an HRA is necessary, then the emissions inventory from the approved ATIR will be used to calculate risk. With very few exceptions, once an HRA is required, the emissions inventory from the approved ATIR may not be changed. Source tests that are conducted after approval of the ATIR may not be used as part of the resulting HRA. For more on source tests and their usage in calculating emissions, see Section 1.3.2.

Any information that a facility deems as a trade secret or exempt from the public records act must be clearly marked. The same holds true for processes which can be identified as confidential in the Process Data tab in EIM.

2.1.1 Report Summary

The report summary summarizes the results and methodology of the ATIR. Important information about the facility and its processes is described here. Additionally, any significant changes between the AER and the submitted ATIR shall be described here. Facility plot plans showing emission source locations, property line, and buildings shall be included. Any supporting documentation included in the submittal shall also be listed and described.

2.1.2 Emissions Inventory Module

The EIM is the emissions inventory database tool for HARP. An ATIR submittal must include an associated EIM file that describe facility, device, process, emissions, and stack data.

An EIM file shall provide a complete profile of each itemized emission. A device operates and generates emissions through a process. The emissions are calculated using process data, emission factors, and control efficiencies data. Each device is also connected to a release point in EIM. The database format uses a relational data structure that makes it possible to describe the emissions inventory. Not all source types are currently supported by EIM. For example, EIM does not have an option for circular area sources and polygon area sources. For these situations, the emissions for these sources must be described in the report summary and provided in the supporting documentation in as close a format to the EIM as possible. Please contact AB 2588 Program staff for questions on how to present data in a format that is not currently supported by EIM.

The emissions from each device and process should be clearly itemized instead of combined with other processes when possible. For example, a device that combusts more than one type of fuel should have a separate process for each type of fuel instead of combining all emissions from all types of fuel into one process. There are certain scenarios where entry to EIM may not be feasible. In such instances, a simplified version of the data may be inputted, with the actual calculations provided in the supporting documentation of the ATIR. Facilities shall contact AB 2588 Program staff to discuss these situations prior to doing so.

2.1.3 Supporting Documentation

All documents necessary for reproducing the results of the ATIR shall be included in the ATIR submittal, such as assumptions and information required to substantiate each emissions calculation. For example, source tests approved by South Coast AQMD or material safety data sheets that were used to derive emission factors must be included. Any emissions calculations that were done outside EIM shall also be included.

3. Air Dispersion Modeling

Air dispersion modeling is performed for the exposure assessment component of the HRA. In this chapter, a basic understanding of dispersion modeling is presumed. For a more detailed overview of regulatory modeling procedures, refer to the U.S. EPA's "Guideline on Air Quality Models"[16] and the 2015 OEHHA Guidance Manual.

3.1 Facility Description and Source Information

The HRA must contain a brief description of the facility and its activities as shown in the detailed HRA outline provided in Appendix B. Table 3 lists the information on the facility and its surroundings that must be provided in the modeling analysis. The facility location is used to determine the most representative meteorological data for the analysis. The nearby land use is needed to properly label receptors as residential, commercial, sensitive, etc.

The facility plot plan (including a scale) shall be provided showing all source locations, building dimensions, and the property boundary. The operating schedule, the maximum hourly emission rates, the annual average emission rates, and the source parameters listed in Table 4 are required elements to accurately characterize the source emissions. Please refer to the detailed outline provided in Appendix B for additional information and guidance.

[16] https://www.epa.gov/scram/air-quality-dispersion-modeling-preferred-and-recommended-models

Table 3 — Required Facility Information

Information on the Facility and Its Surroundings
• Location (i.e., address and Universal Transverse Mercator (UTM) coordinates in World Geodetic System 1984 (WGS84)) • Local land use (within 20 km) • Local topography (within 20 km) • Facility plot plan - Property boundaries - Horizontal scale - Building heights (for building downwash calculations) - Source locations including elevations

Table 4 — Required Source Information

Point Source Information (stacks, vents, etc.)
• Maximum and average hourly emission rates • Annual emissions • Stack location (in UTM coordinates in WGS84) on plot plan including elevation • Stack height • Stack gas flow • Stack gas exit temperature • Building dimensions, heights, and location
Fugitive Source Information (area and volume sources)
• Maximum and average hourly emission rates • Annual emissions • Source location (in UTM coordinates in WGS84) on plot plan including elevations • Source height • Area or volume dimensions

3.2 Model Selection and Model Options

All modeling files prepared for the AB 2588 Program shall use the most recent version of AERMOD, U.S. EPA's air quality dispersion model. AERMOD is included in HARP for the exposure assessment. AERMOD can also be obtained from U.S. EPA's website or through third party software programs and be used in its standalone form AERMOD is a Gaussian plume model capable of estimating pollutant concentrations from a wide variety of sources that are typically present in an industrial source complex. AERMOD estimates hourly concentrations for each source/receptor pair and calculates concentrations for user-specified averaging times, including an average concentration for the complete simulation period. AERMOD includes atmospheric dispersion options for both urban and rural environments and can address flat, gently rolling, and complex terrain situations. AERMOD documentation is available on the U.S. EPA website.[17] Table 5 summarizes the default dispersion modeling assumptions recommended by South Coast AQMD.

[17] https://www3.epa.gov/ttn/scram/models/aermod/aermod_userguide.pdf

Table 5 — Summary of South Coast AQMD Dispersion Modeling Guidance

Parameter	Assumption
Model Control Options	
• Use Regulatory Default?	Yes
• Urban or Rural?	Urban
Source Options	
• Include Building Downwash?	Yes
Meteorology Options	
• Meteorological Data	AERMOD-ready data available on South Coast AQMD website. See Section 3.3.

South Coast AQMD policy for all air quality impact analyses in its jurisdiction requires use of urban dispersion coefficient. The U.S. EPA regulatory default options shall be used for all projects. If non-default options are used, a justification shall be included. Please contact AB 2588 Program staff prior to using any non-default options.

3.3 Meteorological Data

South Coast AQMD has AERMOD-ready meteorological data for the South Coast Air Basin available on the South Coast AQMD website including a map showing the locations of meteorological stations with AERMOD-ready data, a table listing the meteorological data for the meteorological stations, and a list of station data including abbreviations, geographical information, and surface characteristics.[18]

The most representative meteorological station should be chosen for modeling which in most cases, is the nearest station; however, an intervening terrain feature may dictate the use of an alternate station. Modelers shall contact AB 2588 Program staff regarding the most representative meteorological station, if necessary.

3.4 Receptor Grid

Air dispersion modeling is required to estimate (a) annual average concentrations and to locate the receptors showing the maximum cancer risks, the maximum non-cancer hazard indices (HI), the zones of impact, and cancer burden and (b) peak hourly concentrations to calculate the health impact from substances with non-cancer acute health effects. All receptors shall be set to the elevation (i.e. no flagpole receptors), so that ground-level concentrations are analyzed.[19] For air dispersion modeling, an initial receptor grid centered on the facility with a maximum receptor spacing of 100 meters shall be used. This initial 100 meter receptor grid shall be placed so that individual grid points are located at UTM coordinates ending in "00" (e.g., grid point UTM East 572300 and UTM North 3731000). This receptor grid shall be of sufficient extent to clearly identify the zone of impact (see Section 4.6 for discussion on zone of impact). Additional receptor grids with finer spacing may be required to identify the points of maximum impacts. If a finer receptor grid is warranted, the coarser grid need not overlap with the finer grid. All receptors shall

[18] https://www.aqmd.gov/home/air-quality/air-quality-data-studies/meteorological-data/data-for-aermod

[19] In instances where elevated receptor heights may be warranted, please consult with AB 2588 Program staff.

be defined in terms of UTM coordinates and a WGS84 spatial reference system.
Receptors on the facility boundary must be placed along the boundary using 20 meters spacing. Sensitive receptors must be identified. Locations of the sensitive receptors shall also be provided by exact UTM coordinates. Elevations must be provided for all receptors using the AERMAP program provided by U.S. EPA in accordance to Section 3.6.

3.5 Source Data

Emission sources are categorized into four basic types: point, area, volume, and open pit sources. Please refer to the AERMOD User Guide and the HARP ADMRT User Manual[20] for the required data for each type of source. Some types of sources may have special situations.

3.5.1 Point Sources

Emission release points with raincaps may be modeled as a capped source using the POINTCAP option in AERMOD. Horizontal releases may be modeled using the POINTHOR option. In general, if there is uncertainty on how to represent sources in a model, AB 2588 Program staff shall be consulted before proceeding with modeling.

3.5.2 Area Sources

According to U.S. EPA guidance for area sources in AERMOD, the aspect ratio (i.e., length/width) for area sources should be less than 10 to 1. If this is exceeded, then the area must be subdivided to achieve a 10 to 1 or less aspect ratio for all sub-areas.

The EIM module currently is not capable of handling polygonal area sources. If use of any polygonal or area sources is needed, these must be addressed outside of EIM. Facilities shall submit all documentation necessary for modeling any such area sources, separately from EIM files.

3.5.3 Volume Sources

Receptor placement is important for volume sources that have "exclusion zones." Concentrations may not be correctly calculated for receptors located within the exclusion zone. The exclusion zone for any volume source is defined as 2.15 times the initial lateral dispersion coefficient (sigma y) + 1 meter from the center of the volume source.

3.6 Elevation Data

The AERMOD modeling system includes AERMAP, which is a terrain data pre-processor. Terrain data, available from the United States Geological Survey (USGS), is used by AERMAP to produce terrain base elevations for each receptor and source and a hill height scale value for each receptor.

The most recent version of AERMAP shall be used to determine elevations for receptors, sources, buildings, and terrain. It is highly recommended that National Elevation Dataset (NED) data in GeoTIFF format be used as input into AERMAP, per the recommendation in the U.S. EPA's

[20] https://ww3.arb.ca.gov/toxics/harp/docs2/harp2admrtuserguide.pdf

AERMOD Implementation Guide. A resolution of 1/3 arc-second (approximately 10 meters) is preferred, although 1 arc-second (approximately 30 meters) is also acceptable.

Although NED data is preferred as an input to AERMAP, Digital Elevation Model (DEM) data may still be used since the Air Dispersion Modeling and Risk Tool (ADMRT) module in HARP currently only supports DEM data. However, DEM data is static and has not been updated by USGS for a number of years. For facilities relying solely on HARP for dispersion modeling, DEM data will be allowed until the time when HARP is updated to support NED data.

4. Health Risk Assessments

4.1 OEHHA Guidance

OEHHA's guidance for preparing HRAs is contained in the 2015 OEHHA Guidance Manual.[21] This guidance manual has undergone public and peer review, was endorsed by the California Scientific Review Panel, and released in final version by OEHHA in March 2015.

The 2015 OEHHA Guidance Manual[2] recognizes four types of evaluations:

- Tier 1: point estimate, using standard assumptions;
- Tier 2: point estimate, using site-specific details;
- Tier 3: stochastic risk, using standard assumptions;
- Tier 4: stochastic risk, using site-specific details

As described in the 2015 OEHHA HRA Guidelines, "Tier 1 is a standard point-estimate approach using the recommended point-estimates […] Tier 1 evaluations are required for all HRAs prepared for the Hot Spots Program To promote consistency across the state for all facility risk assessments and allow comparison across facilities.")[22]

As such, South Coast AQMD requires that all HRAs for the AB 2588 Program include a Tier-1 evaluation. The results of the Tier 1 evaluation are used for comparative and regulatory purposes (i.e., risk status, fee category, public notice, and risk reduction).

The Executive Summary and main body of the HRA shall contain only statements regarding the results of the Tier 1 evaluation. Tier 2, Tier 3, and Tier 4 evaluations shall not be in the Executive Summary or main document; they may be prepared and presented as appendices to the main document. Site specific details for either a Tier 2, Tier 3, or Tier 4 evaluation require review and approval by both South Coast AQMD and OEHHA.

4.1.1 Calculating Risk

All HRAs prepared for the AB 2588 Program in accordance with OEHHA and CARB guidance[2] shall use the latest approved version of HARP at the time of submittal. The OEHHA Guidelines requires at least a Tier-1 evaluation, which allows for Derived Risk Calculations. The Derived method uses high end exposure parameters for the top two exposure pathways and mean exposure parameters for the remaining pathways for cancer risk estimates. For non-cancer chronic assessments, the Derived method uses high end exposures for the top three exposure pathways. CARB has developed an updated Risk Management Policy that includes recommendations for inhalation exposures, which recommends using high end breathing rates (95th percentile) for children from the 3rd trimester through age 2, and 80th percentile breathing rates for all other ages

[21] Information regarding CARB's Risk Management Policy can be located at: https://www.arb.ca.gov/toxics/toxics.htm

[22] See Sections 2.5.3 and 8.1.1 of the 2015 OEHHA Guidance Manual

for residential exposures. In accordance with these guidelines, South Coast AQMD requires use of CARB's Risk Management Policy in an HRA. CARB prepared HARP to facilitate the preparation and transmittal of a compliant ATIR and HRA. The details are provided below.

4.2 HRA Format

The format for the HRA must follow the detailed outline presented in Appendix B of these Supplemental Guidelines. A completed HRA Summary must be included in the Executive Summary of the HRA; a sample of the form can be downloaded from South Coast AQMD's AB 2588 Program website.[23] The detailed HRA outline provided in Appendix B lists the HARP files to be included electronically with the HRA. All copies of electronic file(s) shall be sent to AB 2588 Program staff. The HRA shall also be submitted electronically (i.e., PDF format). Any trade secret or other public records act exempt information must be clearly identified for possible redaction since HRAs and all other documents submitted to the AB 2588 Program staff are subject to public records requests.[24]

Cancer risk values shall be reported to the nearest tenth and rounded up as necessary (e.g., 5.05 chances in-one-million is rounded up to 5.1 chances in-one-million). Non-cancer risk values shall be reported to the nearest hundredth and also rounded up as needed (e.g., an HI of 0.105 is rounded to 0.11).

4.3 HARP

HARP is designed to meet the programmatic requirements of the AB 2588 Program. The ADMRT module is required to be used for all HRAs."

The outline for an HRA is contained in Appendix B. The list of files that must be submitted with an HRA for the AB 2588 Program are included in Table 6. Any emissions factor development, emission rate calculations, or approved source test protocol and reports must be submitted in standard readable electronic file format (e.g., in Microsoft Excel). For any items that have previously been submitted to South Coast AQMD (such as source test reports), please include an appropriate reference in references section of the HRA report (see HRA format in Appendix B).

[23] https://www.aqmd.gov/docs/default-source/aqmd-forms/AB2588/ab2588-hra-summary-form.pdf
[24] http://www.aqmd.gov/docs/default-source/default-document-library/Guidelines/pra-guidelines.pdf

Table 6 — Required Files for HRA Submittals

File Type	Notes
HRA Input HRA Output	All files created by CARB's ADMRT Module
Dispersion Modeling Input Dispersion Modeling Output	All AERMOD and BPIP files used in the HRA including terrain data.
Emission Inventory Module file	The transaction file created by CARB's EIM, only if it is different from the approved ATIR.
Emission Calculations	Provided in standard electronic format (e.g., Excel) and documented references (i.e. sample calculations); applicable only if emissions vary from the approved ATIR.
Air Monitoring Data	South Coast AQMD station name and meteorological version; otherwise, all meteorological data files including any AERMET files if default South Coast AQMD meteorological data is not used.

4.4 South Coast AQMD's Default Assumptions for HRAs

All HRAs prepared for South Coast AQMD must include an OEHHA Tier 1 evaluation. Table 7 and Table 8 summarizes the default assumptions required by South Coast AQMD for preparation of a Tier 1 HRA. Deviations from these defaults must be approved by South Coast AQMD staff prior to their use.

Residential cancer risks assume a 30-year exposure (cancer burden assumes a 70-year exposure) and must include, at a minimum, the following pathways: home grown produce, dermal absorption, soil ingestion, and mother's milk. A deposition velocity of 0.02 m/s shall be used for the non-inhalation pathways, and the dermal pathway shall use a "warm" climate. The other pathways of fish ingestion, dairy milk ingestion, drinking water consumption, and meat (i.e., beef, pork, chicken, and egg) ingestion shall be included if the facility impacts a local fishable body of water, grazing land, dairy, or water reservoir. The "RMP Using the Derived Method" risk calculation option shall be used for estimating cancer risks at residential receptors. To estimate non-cancer chronic risks at residential receptors the "OEHHA Derived Method" risk calculation option shall be used. The non-cancer 8-hour chronic risk shall also be calculated for receptors for any source that operates at least 8 hours per day, 5 days per week.

Population exposure analyses shall be included with the HRA. The number of people who reside within the 1×10^{-6}, 1×10^{-5}, and 1×10^{-4} cancer risk isopleths shall be provided. For non-cancer exposure, the number of people who reside within the 0.5, 1, and 5 HI isopleths shall likewise be reported. Use of HARP software to calculate the population exposure is preferred. Use of

alternative methods must first be discussed and granted approval for use by the AB 2588 Program staff.

Furthermore, a cancer burden analysis shall be provided. The area of impact shall first be delineated from the results of the residential cancer analysis. All census receptors within the 1 x 10^{-6} area of impact[25] shall be identified. A residential cancer risk over a 70 year exposure is then determined for these census receptors. The cancer burden is the sum of the 70 year cancer risk at each census receptor multiplied by the population for each census receptor.

[25] The zone of impact is determined using the 30 year exposure duration.

Table 7 — Summary of South Coast AQMD Tier 1 HRA Scenarios

Analysis Type	Exposure Period	Intake Scenario
Residential cancer	30 year exposure	RMP using derived method
Worker cancer	25 year exposure	OEHHA derived method
Residential non-cancer chronic	N/A (REL only)[26]	OEHHA derived method
Worker non-cancer chronic	N/A (REL only)[26]	OEHHA derived method
Non-cancer chronic 8-hr	N/A (REL only)[26]	OEHHA derived method
Population wide cancer burden	70 year exposure	RMP using derived method

Table 8 — Summary of South Coast AQMD Mandatory Exposure Pathways and Settings

Parameter	Assumptions
Pathway	
Inhalation	Required for all receptors
Dermal	Required for all receptors
Soil	Required for all receptors
Homegrown Produce	Required for residential receptors
Mother's Milk	Required for residential receptors
Beef/Dairy	Site specific
Pigs, Chickens, and/or Eggs	Site specific
Deposition Rate	0.02 meters per second
Exposure Assumptions	Use HARP defaults except for dermal pathway which uses "warm" climate

The concentration to which workers are exposed may be different than the annual average concentration calculated by AERMOD. The annual average estimated by AERMOD is a 24 hours per day, 7 days per week, 365 days per year average, regardless of the actual operating schedule of the emitting facility. However, the off-site worker may be impacted only during work hours. Thus, the model-predicted concentrations must be adjusted by a multiplying factor, the worker adjustment factor (WAF),to reflect the pollutant concentration that the worker breathes. For example, suppose that the off-site worker and the emitting facility have the same operating schedule, perhaps 8 hours per day, 5 days per week, and 52 weeks per year. The annual average concentrations predicted by AERMOD must be adjusted by a factor of 4.2 (i.e., 7/5 x 24/8).[27] These factors are entered into HARP by activating the WAF option in the Inhalation Pathway and entering the appropriate factor from either one of the tables.

The WAF factors shall only be applied when estimating worker cancer risks and non-cancer chronic 8-hour HI for facilities that do not operate continuously. The adjustments are not applicable to

[26] Based on Reference Exposure Levels; see 2015 OEHHA Guidance Manual for detail

[27] See Sections 4.12.2.1, 4.12.3.1, and 5.4.1.2 5.4.1.4 from the 2015 OEHHA Guidance Manual. See also Tables 5.1 and 5.2 of South Coast AQMD *Permit Application Package "N" For Use in Conjunction with the Risk Assessment Procedures for Rules 1401, 1401.1, and 212.* here: https://www.aqmd.gov/docs/default-source/permitting/rule-1401-risk-assessment/attachmentn-v8-1.pdf

residential cancer risks and to residential or worker non-cancer chronic risks.

4.5 Receptors for Maximal Exposure and Point of Maximum Impact

The HRA shall include evaluations to show the following receptors: the Maximally Exposed Individual Resident (MEIR); the Maximally Exposed Individual Worker (MEIW); and the Point of Maximum Impact (PMI). As part of the evaluation, current land use and allowable land use shall be identified (residential, commercial/industrial, or mixed use). The use of block group or census tract centroids as surrogates for the maximum exposed individual does not provide sufficient spatial resolution and will not be approved.

Cancer risk and non-cancer chronic HIs must be provided for both the most exposed residential and the most exposed worker receptors. The non-cancer acute HI must be provided for the offsite PMI. Additionally, cancer risk and HI values at each sensitive receptor located within the zone of impact must be presented in a table. The zone of impact is discussed in Section 4.6.

4.6 Zone of Impact

Using air dispersion modeling and risk analysis, a zone of impact shall be determined for cancer and for non-cancer risks. For cancer risk, the zone of impact shall encompass the entire geographic area subject to an added lifetime cancer risk (all pathways) of one chances in-one-million or greater (i.e. $\geq 1.0 \times 10^{-6}$). Likewise, for non-cancer risks, the analysis must bound the area subject to an HI greater than or equal to one half (≥ 0.5). The air dispersion modeling and risk analysis process may be required to be repeated with a larger receptor grid in order to correctly determine the zone of impacts.

4.7 Land Use Considerations

Risk estimates are sensitive to land uses (e.g. residential, commercial, vacant) since these factors can affect exposure assumptions. If residential or worker risks are not calculated at the PMI because the land is currently vacant, then a discussion of the location, zoning and potential future land uses shall be included in the HRA.

4.8 Maps

Maps showing the location of the facility and sources within the facility in relation to the zone of impact must be submitted. For cancer risk, total risk isopleths for facilities shall be plotted on the street map provided using HARP at cancer risk intervals of 1, 10, 25, and 100 chances in-one-million. Isopleths for non-cancer HI must include levels corresponding to an HI of 0.5, 1.0, 3.0, and 5.0.

Separate maps should be provided for each of the four risk variables: cancer risks, non-cancer acute risks, non-cancer chronic risks, and non-cancer 8-hour chronic risks. The maps must contain an accurate scale for measuring distances and a legend. The map scale that can accommodate the isopleths and show the greatest level of detail must be used. The names of streets and other locations must be presented and be legible.

The location of schools, hospitals, day-care centers, other sensitive receptors, residential areas and work-sites within the zone of impact must be identified on the map. If the area of the zone of impact is very large, then more detail should be devoted to higher concentration/risk areas versus lower risk areas. The land uses in the vicinity of the receptors of maximal exposure and the PMI must be shown in detail. This may require a separate map. If sensitive receptors are located within the zone of impact, then cancer risk and HI values must also be presented in the form of a table including all the sensitive receptors.

4.9 Public Notification

Public notification shall be conducted when risk is found to exceed the Notification Risk Level of Rule 1402. See the *South Coast AQMD Public Notification Procedures for Facilities Under the Air Toxics "Hot Spots" Information and Assessment Act (AB 2588) and Rule 1402*[28] for details on the requirements and the notification process.

4.10 Emissions Differing from the Base Year Inventory

The AB 2588 Program takes a 'snapshot' of a base year emissions inventory, which is typically the most recent quadrennial emissions reporting year. The ATIR is developed for the base year and the HRA is conducted using this ATIR. In some cases, more recent emissions are substantially different than the base year emissions of a facility due to modifications. Facilities may include information about the more recent emission changes and how those affect health risks in a supplemental appendix to their HRA. If a facility includes supplemental information showing that emissions and health risks have been reduced since the base year, then this more recent emissions scenario can be used when comparing residual health risks against Rule 1402(c)(2) Risk Reduction thresholds, provided the new emissions scenario is based on emission reductions that are permanent, enforceable, and verifiable. The health risks from the base year will still be used when comparing against Rule 1402 (c)(12) Public Notification Thresholds. If public notification is required, then the information about reductions in health risk since the base year can be included as supplemental information in the notification materials.

The facility shall contact AB 2588 Program staff to obtain approval and determine if the changes occurring after the base year can be considered as verifiable, enforceable, and permanent emission reductions. Upon approval, the facility must estimate cancer risk, cancer burden, and hazard indices for both the base year and the estimated emissions following reductions. The two risk estimates must be presented separately in the HRA submitted to South Coast AQMD. The risk estimate determined from emissions not derived from the base year inventory shall be shown in a supplemental appendix to the HRA. Note that any emission increases due to process changes and/or new equipment must also be quantified.

4.11 Uncertainty Analyses and Alternate HRA

The 2015 OEHHA Guidance Manual describes uncertainty analyses and HRAs with alternate assumptions (i.e., alternate HRAs). These may be included only at the discretion of South Coast AQMD. Factors for allowing an Alternate HRA include whether the information provides value and if underlying assumptions are acceptable to staff. Alternate HRAs are not approved by South

[28] https://www.aqmd.gov/docs/default-source/planning/risk-assessment/pn_procedures.pdf

Coast AQMD and are not allowable for determining the Rule 1402 Action Risk Level or Notification Risk Level.

Any alternate analysis that South Coast AQMD staff allows shall meet the following requirements:

- All analyses, discussion, and information relating to an alternate analysis (including any unapproved source test data) must appear under a separate title such as "Alternate Analysis" in an appendix to the HRA.
    - If an alternate HRA is integrated together with the HRA Tier-1 analysis and not presented in a separate appendix of the document as required by OEHHA and South Coast AQMD guidelines, the HRA will be considered unacceptable and returned to the facility owner/operator for revision.
- Deviations from the OEHHA Tier-1 point estimate methodology must be described in detail at the beginning of the appendix and the reasons for the alternative assumptions must also be described in detail with supporting documentation.

Failure to comply with these guidelines are grounds for rejection of the primary HRA in accordance with Rule 1402(e).

5. Risk Reduction Plans

5.1 Risk Reduction Measures

An RRP shall propose risk reduction measures that reduce or eliminate risk associated with emissions of TACs that are real, permanent, quantifiable, and enforceable. Letters of intent or internal memos mandating new company policy are not considered verifiable emission reductions.

Risk reduction measures shall be as specific as possible with details on what actions will be taken to reduce or eliminate risk. Examples of risk reduction measures include permit modifications of a device generating a significant portion of the TACs contributing to the risk, installation of additional air pollution control devices, and conducting source tests to demonstrate that the facility's emissions will result in risks below the Action Risk Level.

5.2 Updated ATIR and HRA

The RRP shall include an updated ATIR and HRA that includes the proposed risk reduction measures. The updated ATIR and HRA must demonstrate that the risk reduction measures will reduce or eliminate risk to below the Action Risk Level.

5.3 Progress Reports

Progress reports shall be submitted 12 months after RRP approval. The progress reports shall describe any progress that has been made in implementing the risk reduction measures and provide an updated timeline to full implementation. See Appendix E for a full list of items to be included in a Risk Reduction Progress Report

6. Potentially High Risk Level Facilities

Potentially High Risk Level facilities are those facilities that have been determined to have a likely potential to either exceed or have exceeded the Significant Risk Level as specified in Rule 1402 (g)(1). Facilities are designated as Potentially High Risk Level facilities by South Coast AQMD. Prior to the official designation, staff will meet with the facility representatives to obtain any relevant information. The designation is in written form and will include information substantiating the designation such as findings from the evaluation of relevant ambient monitoring data, source test data, compliance data, emissions data as well as site visits.

Following the designation, a Potentially High Risk Level facility must submit the Initial Information for the ATIR, Early Action Reduction Plan, ATIR, HRA and RRP. With the exception of the Early Action Reduction Plan, facilities that are notified under the traditional path must also submit these documents. However, Potentially High Risk Level facilities are required to submit the HRA and RRP on an expedited timeline of 180 days following designation. The purpose of the expedited timeline is to quickly reduce potential health risk to the public.

The Early Action Reduction Plan shall include the facility name, location address, and South Coast AQMD facility identification number. The devices and processes that account for the estimated risk from the facility shall be identified. The Early Action Reduction Plan shall also identify risk reduction measure(s) to be implemented to quickly reduce emissions that drive risk. Note that these risk reduction measures may also be proposed for the final RRP. Examples of risk reduction measures include housekeeping provisions, process changes, physical modifications, as well as operational curtailments. These measures are not required to be permanent but must remain in place for the duration stated in the approval for the Early Action Reduction Plan. Finally, a schedule for implementing the specified risk reduction measures shall be provided. The schedule may be enforced as part of the approval for the Early Action Reduction Plan.

Appendix A — Elements of an Air Toxics Inventory Report

1. **Report Summary** (hard copy)

- Facility name, Facility ID, and location
- Facility plot plan identifying: emission source location, property line, horizontal scale, and building heights and dimensions
- Report emission control equipment and efficiency by source and by substance.
- Facility total emission rate by substance for all devices including the following information (2015 OEHHA Guidance Manual Appendix A-I Substances must be quantified in the inventory report):
  - substance name and CAS number
  - annual average emission for each substance (lb/yr and g/s)
  - maximum one-hour emissions for each substance (lb/hr and g/s)
- Report annual average and maximum hourly emission rates for each toxic substance for each source
- Report emissions inventory methods indicating whether emissions are measured or estimated
- A list of supporting documentation such as source test reports or material safety data sheets included in the submittal along with a description of each supporting document and which emissions refer to it

2. **EIM**: provide facility, device, process, emissions, and stack data, including but not limited to the following information:

- Source identification numbers used by the facility
- Source names
- South Coast AQMD permit numbers if available
- Source locations using UTM coordinates (in meters) with a WGS84 projection
- Source base elevations (m)
- Source heights (m)
- Source dimensions (e.g., stack diameter, building dimensions, area/volume size, etc.) (m)
- Stack gas volumetric flow rates (ACFM) if applicable
- Stack gas exit temperatures (K)
- Number of operating hours per day

- Number of operating days per week
- Number of operating weeks per year
- Annual process rates for each device and process
- Maximum hourly process rates for each device and process
- Controlled and uncontrolled emission factors for each TAC reported

3. **Supporting Documentation (note these are separate from EIM):** emission calculations and documents used to substantiate emissions calculations. This includes, but is not limited to:

   - Source test reports approved by South Coast AQMD
   - Material safety data sheets
   - Manufacturer specifications
   - Emissions calculations in which a simplified version was inputted into EIM. The full detailed emissions calculations and the basis for calculations shall be included here. Provide the spreadsheet calculations if they were used. Provide separate sample calculation details to substantiate methodology as needed. If spreadsheets were used for emissions calculations, they should be provided
   - Reference sources for emission factors that do not use South Coast AQMD defaults
   - Control efficiencies used in emissions calculations and the references and calculations used to determine the percentage. Clearly indicate control efficiencies used for each specific emissions calculations

Appendix B — Outline for the HRA

I. Table of Contents

- Section headings with page numbers indicated
- Tables and figures with page numbers indicated
- Definitions and abbreviations. Must include a definition of acute, 8-hour chronic, chronic, and cancer health impacts
- Appendices with page numbers indicated

II. Executive Summary

- Name of facility and the location address
- South Coast AQMD Facility ID number
- Description of facility operations and a list identifying emitted substances, including a table of maximum 1-hour and annual emissions in units of lb/hr and lb/yr, respectively
- List the multipathway substances and their pathways
- Text presenting overview of dispersion modeling and exposure assessment
- Text defining dose-response assessment for cancer and non-cancer health impacts and a table showing target organ systems by substance for non-cancer impacts
- Summary of results (See Attachment A to this Appendix). Potential cancer risks for residents must be based on 30-year, Tier 1 analysis and potential cancer risks for workers must be based on 25-year, Tier-1 analysis. Cancer burden results must be based on 70-year, Tier-1 analysis
    - Location (UTM coordinates) and description of the off-site PMI, MEIR, and MEIW. See Attachment A for the required summary form
    - Location (UTM coordinates and location addresses, where available) and description of any sensitive receptors that are above a cancer risk of ten chances in-one-million or above a non-cancer health HI of one
    - Text presenting an overview of the total potential multipathway cancer risk at the PMI, MEIR, MEIW, and sensitive receptors (if applicable). Provide a table of cancer risk by substance for the MEIR and MEIW. Include a statement indicating which of the substances appear to contribute to (i.e., drive) the potential health impacts. In addition, identify the exposure pathways evaluated in the HRA
    - Provide a map of the facility and surroundings and identify the location of the MEIR, MEIW, and PMI

- Provide a map of 30-year lifetime cancer risk zone of impact (i.e., 1 chances in-one-million risk contour), if applicable. Also show the 10, 25, and 100 chances in-one-million risk contours, if applicable. If the cancer burden is greater than 0.5, then a map showing the 1 chances in-one-million risk contour based on a 70-year lifetime shall also be presented

- Text presenting an overview of the acute and chronic non-cancer hazard quotients or the (total) hazard indices for the PMI, MEIR, MEIW, and sensitive receptors.

- Include separate statements (for acute, 8-hour chronic, and annual chronic exposures) indicating which of the substances appear to drive the potential health impacts. In addition, clearly identify the primary target organ(s) that are impacted from acute and chronic exposures

- Identify any subpopulations (e.g., subsistence fishers) of concern

- Table and text presenting an overview of estimates of population exposure

- Version of the Risk Assessment Guidelines and computer program(s) used to prepare the risk assessment

III. Main Body of Report

A. Hazard Identification

- Table and text identifying all substances emitted from the facility. Include the CAS number of substance and the physical form of the substance if possible. The complete list of the substances to be considered is contained in Appendix A of the 2015 OEHHA Guidance Manual[2]

- Table and text identifying all substances that are evaluated for cancer risk and/or non- cancer acute and chronic health impacts. In addition, identify any substances that present a potential cancer risk or non-cancer chronic hazard via non-inhalation routes of exposure

- Describe the types and amounts of continuous or intermittent predictable emissions from the facility that occurred during the reporting year. As required by statute, releases from a facility include spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping (fugitive), leaching, dumping, or disposing of a substance into ambient air. Include the substance(s) released and a description of the processes that resulted in long-term and continuous releases

B. Exposure Assessment

This section describes the information related to the air dispersion modeling process that should be reported in the risk assessment. In addition, doses calculated by pathway of exposure for each

substance should be included in this section. The educated reader should be able to reproduce the risk assessment without the need for clarification. The location of any information that is presented in appendices, on electronic media, or attached documents that supports information presented in this section, must be clearly identified by title and page number in this section's text and in the document's table of contents.

B.1 Facility Description

Report the following information regarding the facility and its surroundings:

- Facility name
- South Coast AQMD Facility ID number
- Facility location address
- Local topography
- Facility plot plan identifying: emission source locations, property line, scale, building dimensions
- Description of the site/route dependent exposure pathways. Provide a summary of the site-specific inputs used for each pathway (e.g., water or grazing intake assumptions). This information shall be clearly presented and cross-referenced to the text in an appendix

B.2 Emissions Inventory

Report the following information regarding the facility's sources and emissions in table format; see Appendix K of the 2015 OEHHA Guidance Manual[2]. Depending on the number of sources and/or pollutants, this information may be placed in the main body of the report or in an appendix:

- Source identification number used by the facility (e.g., EIM release ID)
- Source name
- Source location using UTM coordinates (in meters); with a WGS84 projection
- Source base elevation (m)
- Source height (m)
- Source dimensions (e.g., stack diameter, building dimensions, area/volume size, etc.) (m)
- Stack gas volumetric flow rate (ACFM) if applicable
- Stack gas exit temperature (K)
- Number of operating hours per day and per year
- Number of operating days per week

- Number of operating days or weeks per year
- Report emission control equipment and efficiency by source and by substance. The description should be brief.
- Report emissions inventory methods indicating whether emissions are measured or estimated.

Report emission rates for each toxic substance, grouped by source, in table form including the following information (see Appendix K of the 2015 OEHHA Guidance Manual). Depending on the number of sources and/or pollutants, this information may be placed in the main body of the report or in an appendix:

- Source name
- Source identification number
- Substance name and CAS number
- Annual average emissions for each substance (lb/yr). Radionuclides are reported in curies/yr
- Maximum one-hour emissions for each substance (lb/hr). Radionuclides are reported in millicuries/yr
- Report facility total emission rates by substance for all devices including the following information (see Appendix K of the 2015 OEHHA Guidance Manual). This information should be in the main body of the report
- Substance name and associated CAS number
- Annual average emissions for each substance (lb/yr and g/s). Radionuclides are reported in curies/yr
- Maximum one-hour emissions for each substance (lb/hr and g/s).

B.3 Air Dispersion Modeling

- The HRA shall indicate the source and time period of the meteorological data used. South Coast AQMD has AERMOD-ready meteorological data for available stations in the South Coast Air Basin available for download from South Coast AQMD's website. Submit the meteorological data if it is not provided by South Coast AQMD
- Include proper justification for using the meteorological data. The nearest representative meteorological station shall be used. Usually this is simply the nearest station to the facility; however, an intervening terrain feature may dictate the use of an alternate site
- The latest approved version of AERMOD and HARP shall be used for all HRAs prepared for the AB 2588 Program

- Table and text that specifies the following information:
  - Selected model options and parameters
  - Receptor grid spacing
- For the PMI, MEIR, MEIW, and any sensitive receptors within the zone of impact, include tables that summarize the annual average concentrations calculated for all substances
- For the PMI, MEIR, MEIW, and any sensitive receptors required by South Coast AQMD, include tables that summarize the maximum one-hour; chronic 8-hour; and 90-day rolling average (lead only) concentrations

C. Risk Characterization

The following information shall be presented in this section of the HRA. If not fully presented here, then by topic, clearly identify the section(s) and pages within the HRA where this information is presented.

- Description of receptors
- Identify the exposure pathways (e.g., water ingestion) for the receptor(s), where appropriate (e.g., MEIR). Provide a summary of the site-specific inputs used for each exposure pathway (e.g., water or grazing intake assumptions). In addition, provide reference to the appendix (section and page number) that contains the modeling (i.e., HARP/dispersion modeling) files that show the same information
- Tables and text providing the following information regarding the potential multipathway cancer risks at the PMI, MEIR, MEIW, and any sensitive receptors of concern:
  - Location in UTM coordinates
  - Contribution by substance
  - Contribution by source
- Tables and text providing the following information regarding the non-cancer acute hazard quotient at the PMI, MEIR, MEIW, and any sensitive receptors of concern:
  - Location in UTM coordinates
  - Target organ(s)
  - Contribution by substance
  - Contribution by source
- Tables and text providing the following information regarding the non-cancer chronic (inhalation and oral) hazard quotient at the PMI, MEIR, MEIW, and any

sensitive receptors of concern:

- Location in UTM coordinates
- Target organ(s)
- Contribution by substance
- Contribution by source

- Table and text presenting estimates of population exposure. Tables should indicate the number of persons exposed to a total cancer risk greater than 10^{-6}, 10^{-5}, 10^{-4}, etc. and total hazard quotient or HI greater than 0.5, 1.0, 3.0, and 5.0. Total cancer burden should also be provided

- Provide maps that illustrate the HRA results as noted below. The maps should be an actual street map of the area impacted by the facility with UTM coordinates and facility boundaries clearly labeled. This should be a true map (i.e., one that shows roads, structures, etc.), drawn to scale, and not a schematic drawing. Color aerial photos are usually the most appropriate choice. The following maps are required:

  - Locations of the PMI, MEIR, MEIW, and sensitive receptors for the cancer and non-cancer acute and chronic risks. Also show the facility emission points and property boundary

  - Total cancer risk (including multipathway factors) contours for the following risk levels: 100, 25, 10, and 1 chances in-one-million. Maps should be provided for the minimum exposure pathways (i.e., inhalation, soil ingestion, dermal exposure, and mother's milk) and for all applicable exposure pathways (i.e., minimum exposure pathways plus additional site/route specific pathways). Include the facility location on the maps

  - Non-cancer acute and non-cancer chronic HI contours for the following levels: 5.0, 3.0, 1.0 and 0.5.

- The risk assessor may want to include a discussion of the strengths and weaknesses of the risk analyses and associated uncertainty directly related to the facility HRA

- If appropriate, comment on the possible alternatives for control or remedial measures

- If possible, identify any community concerns that influence public perception of risk

D. References

References to other documents cited within HRA shall be included in this section. References to standard guidance documents are not required.

IV. Appendices

The appendices shall contain all data, sample calculations, assumptions, and all modeling and risk assessment files that are needed to reproduce the HRA results. All data and model input and output files shall be provided electronically (e.g., uploaded to South Coast AQMD's OnBase system or on USB flash drive). All appendices and the information they contain shall be referenced, clearly titled, and paginated. The following are potential appendix topics unless presented elsewhere in the HRA:

- List of all receptors in the zone of impact and their associated risks
- Emissions by source
- Census data
- Maps and facility plot plan
- All calculations used to determine emissions, concentrations, and potential health impacts at the PMI, MEIR, MEIW, and sensitive receptors
- Presentation of alternate risk assessment methods (e.g., alternate exposure durations, or non-Tier 1 evaluations with supporting information)

Computer Files

The list of electronic files that must be submitted for the HRA are found in Table 6 of this document. They must be useable (i.e., unencrypted and can be opened by native applications such as HARP programs). Any supplementary files shall be submitted in formats that will not lose formatting in transfer (i.e. pdf for text documents).

Attachment A to Appendix B HRA Summary Form

This summary form shall accompany all HRAs and be presented at the beginning of the Executive Summary.

South Coast Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4182
(909) 396-2000 • www.aqmd.gov

HEALTH RISK ASSESSMENT SUMMARY FORM

(Required in Executive Summary of HRA)

Facility Name : _____
Facility Address: _____
_____
Type of Business: _____
SCAQMD ID No.: _____

A. Cancer Risk

(One in a million means one chance in a million of getting cancer from being constantly exposed to a certain level of a chemical over a period of time)

1. Inventory Reporting Year : _____
2. Maximum Cancer Risk to Receptors : *(Offsite and residence = 30-year exposure, worker = 25-year exposure)*
   a. Offsite _____ in a million Location: _____
   b. Residence _____ in a million Location: _____
   c. Worker _____ in a million Location: _____
3. Substances Accounting for 90% of Cancer Risk: _____
   Processes Accounting for 90% of Cancer Risk: _____
4. Cancer Burden for a 70-yr exposure: *(Cancer Burden = [cancer risk] x [# of people exposed to specific cancer risk])*
   a. Cancer Burden _____
   b. Number of people exposed to >1 per million cancer risk for a 70-yr exposure _____
   c. Maximum distance to edge of 70-year, 1 x 10^{-6} cancer risk isopleth (meters) _____

B. Hazard Indices

[Long Term Effects (chronic) and Short Term Effects (acute)]
(non-carcinogenic impacts are estimated by comparing calculated concentration to identified Reference Exposure Levels, and expressing this comparison in terms of a "Hazard Index")

1. Maximum Chronic Hazard Indices:
   a. Residence HI: _____ Location: _____ toxicological endpoint: _____
   b. Worker HI : _____ Location: _____ toxicological endpoint: _____
2. Substances Accounting for 90% of Chronic Hazard Index: _____
3. Maximum 8-hour Chronic Hazard Index:
   8-Hour Chronic HI: _____ Location: _____ toxicological endpoint: _____
4. Substances Accounting for 90% of 8-hour Chronic Hazard Index: _____
5. Maximum Acute Hazard Index:
   PMI: _____ Location: _____ toxicological endpoint: _____
6. Substances Accounting for 90% of Acute Hazard Index: _____

C. Public Notification and Risk Reduction

1. Public Notification Required? ____ Yes ____ No
   a. If 'Yes', estimated population exposed to risks > 10 in a million for a 30-year exposure, or an HI >1
   _____
2. Risk Reduction Required? ____ Yes ____ No

Revised 4/30/2015

Appendix C — HRA Review Check List

The check list contained here is used by South Coast AQMD staff to standardize the review of HRAs. It is being provided to assist facilities and consultants in their HRA preparation.

Facility Name:	**Facility ID:**
Street Address:	
City:	**Zip Code:**
HRA Consultant:	**Reviewer:**

Dispersion Modeling

1. Control Pathway
   a. "Regulatory Default Option" checked? **Yes No**
      i) If No, explain why:
   b. Urban Option
      i) "Apply All Sources" checked? **Yes No**
      ii) "Population" from the latest Census data is added for county? **Yes No**
      iii) "Roughness Length" = 1.0 (default value) **Yes No**
2. Source Pathways
   a. Sources
      i) Check if source list is consistent with following documents:
         - Base Year AER source list? **Yes No**
         - District equipment list (permit list)? **Yes No**
      ii) "Source Type" determined properly? **Yes No**
      iii) "Volume/Area source dimensions" are reasonable? **Yes No**
      iv) "UTMs" are consistent with Plot Plan? **Yes No**
      v) Elevation of source(s) are imported from AERMAP output file? **Yes No**
      vi) Adequate "Emission Rates" used? (default 1 g/s) **Yes No**
      vii) "Release Heights" reasonable? Yes No
      viii) Stack parameters are consistent with those provided in the report **Yes No**
      ix) Accurate and sufficient details entered for every source? **Yes No**
   b. Variable Emissions

i) Default emission rate used? (default: 1 g/s, 24 hrs/day, 365 days/yr) **Yes No**

ii) If not, appropriate emission rate factors are used? **Yes No**

c. Buildings

i) All surrounding buildings included? **Yes No**

ii) Tier Heights and corner points reasonable? **Yes No**

3. Receptors

a. Grid receptors

i) Included? (should be "Yes") **Yes No**

ii) Spacing? (should be no greater than 100 meters) **Yes No**

- Assumed spacing_____meters

iii) Elevations included? (should be "Yes") **Yes No**

iv) Is gridded area sufficient to cover acceptable risk levels? **Yes No**

b. Property boundary receptors

i) Included? (should be "Yes") **Yes No**

ii) Spacing? **Yes No**

- Assumed spacing_____meters

iii) Elevations included (should be "Yes") **Yes No**

c. Sensitive receptors

i) Included? (should be "Yes" if cancer risks >1 chances in-one-million) **Yes No**

ii) Elevation included? (should be "Yes") **Yes No**

iii) Verified from review of Google Earth or other source? **Yes No**

d. Census block receptors

i) Included? (should be "Yes" if cancer risks >1 chances in-one-million) **Yes No**

ii) Elevation included? (should be "Yes") **Yes No**

e. Pathway receptors included? (should be "No") **Yes No**

4. Meteorology Pathway (The latest met data files shall be used.)

a. Surface Met Data File: _____.sfc

b. Profile Met Data File:_____.pfl

c. Base Elevation of Met Station (PROFBASE):_____meters

d. Does the Met Station reflect prevailing meteorological conditions (ex., prevailing winds), surrounding land use, and topography that exists at the source? This is not always the closest Met Station **Yes No**

5. Terrain Option
   a. (Step 1) is Anchor location correct? **Yes No**
   b. (Step 2) is appropriate DEM/NED data file linked? **Yes No**
      i) DEM/NED file used: _____
      ii) Is (Are) the DEM/NED file(s) covering sufficient area? **Yes No**
   c. (Step 3) independently ran AERMAP? **Yes No**
6. Building Downwash
7. Independently ran BPIP Prime? **Yes No** Duplication of AERMOD Results
   a. Independently ran AERMOD? **Yes No**
   b. Average χ/Q first high values for each source group reproduced? **Yes No**

(not required; useful if diagnosing discrepancies)

   c. Max 1-hour χ/Q first high values for each source group reproduced? **Yes No**

(not required; useful if diagnosing discrepancies)

8. All plt files are generated successfully? **Yes No**

Site Visit

- Site visit conducted? **Yes No**
  a. If Yes, **Date** **Time**
  b. Facility Contact: _____
  c. South Coast AQMD Staff: ____

Program Used

1. Facility submittal package is processed by the latest version of HARP? **Yes No**
   a. If NOT, name software used: _____
2. This review is performed using the latest version of HARP? **Yes No**
   a. If NOT, name software used: _____

General Comments

Appendix D — Elements of a Risk Reduction Plan

INTRODUCTION

Facilities with an approved HRA with health risks greater than or equal to the Action Risk Levels as identified in South Coast AQMD Rule 1402 are required to submit an RRP within the specified timeframes for each specific category as specified in the Rule. Facilities participating in the Voluntary Risk Reduction Program under Rule 1402 are required to follow the *Guidelines for Participating in the Rule 1402 Voluntary Risk Reduction Program*. The owner or operator is responsible for preparing an RRP that identifies the risk reduction measures to be implemented. Implementation of these measures will reduce the impact of the total facility emissions below the Action Risk Levels.

ELEMENTS OF A RISK REDUCTION PLAN

1. The name, address, and South Coast AQMD facility identification number, and Standard Industrial Code (SIC) and North American Industry Classification System (NAICS) codes of the facility;

2. A facility risk characterization which includes an updated ATIR and HRA, if the risk due to total facility emissions has increased above or decreased below the levels indicated in the previously approved HRA;

3. Identification of each source from which risk needs to be reduced in order to achieve a risk below Rule 1402 Action Risk Levels;

4. For each source identified in subparagraph (3), an evaluation of the risk reduction measures available to the owner or operator, including emission and risk reduction potential, and time necessary for implementation;

5. Specification of the risk reduction measures that shall be implemented by the owner or operator to comply with the requirements of Rule 1402 (i) to achieve the Action Risk Level or the lowest achievable level;

6. A schedule for implementing the specified risk reduction measures as quickly as feasible. The schedule shall include the submittal of all necessary applications for permits to construct or modify within 180 days of approval of the RRP, or in accordance with another schedule subject to approval by the Executive Officer, and specify the dates for other increments of progress associated with implementation of the risk reduction measures;

7. If requesting a time extension, the plan must also include the following information:

    - A description of the risk reduction measure(s) for which a time extension is needed;
    - The reason(s) a time extension is needed;
    - Progress in implementing risk reduction measures in the plan;
    - For RRPs, estimated health risks at the time of the extension request and at the end

of the risk reduction period; and the length of time extension requested.

The Executive Officer will review the request for the time extension and will approve or reject the time extension based on the following criteria:

- The facility-wide health risk is below the Significant Risk Level at the time of submittal of the time extension request;
- The owner or operator provides sufficient details identifying the reason(s) a time extension is needed that demonstrates to the Executive Officer that there are specific circumstances beyond the control of the owner or operator that necessitate additional time to complete implementation of the plan. Such a demonstration may include, but is not limited to, providing detailed schedules, engineering designs, construction plans, permit applications, purchase orders, economic burden, and technical infeasibility; and
- The time extension will not result in an unreasonable risk to public health.

8. An estimation of the residual health risk after implementation of the specified risk reduction measures; and
9. Proof of certification of the RRP as meeting all requirements by an individual who is officially responsible for the processes and operations of the facility. The person who makes this certification must be one of the following:
    - An engineer who is registered as a professional engineer pursuant to Business and Professional Code section 6762.
    - An individual who is responsible for the operations and processes of the facility.
    - An environmental assessor registered pursuant to Health and Safety Code section 25570.3.

Appendix E — Elements of a Risk Reduction Progress Report

INTRODUCTION

Facilities with an approved RRP or VRRP as identified in South Coast AQMD Rule 1402 are required to submit an **Annual Progress Report** every twelve months as long as their total facility risk meets or exceeds the Rule 1402 Action or Significance Risk Levels.

ELEMENTS OF A RISK REDUCTION PROGRESS REPORT

1. A description of any increases or decreases in emissions of TACs that have occurred at the facility, including a description of any associated permits that were subject to Rule 1401, since approval of the RRP or VRRP;

2. The increments of progress (interim facility risks) achieved in implementing the risk reduction measures specified in the RRP or VRRP. The interim facility risk should represent the previous twelve month period;

3. Submittal dates of all applicable permit application(s), the status of the application(s), the name of the regulatory agency, and the corresponding permit number(s);

4. A schedule indicating dates for future increments of progress; and

5. Identification of any increments of progress that will be achieved later than specified in the plan and the reason for achieving the increments late.

Appendix F — Elements of Early Action Reduction Plans for Potentially High Risk Level Facilities

INTRODUCTION

Facilities designated as a Potentially High Risk Level Facility by the Executive Officer, as identified in South Coast AQMD Rule 1402, are required to submit an Early Action Reduction Plan within 90 days of notification of such designation. The purpose of the Early Action Reduction Plan is to expedite risk reduction to mitigate the elevated health risk to protect public health.

ELEMENTS OF AN EARLY ACTION REDUCTION PLANS FOR POTENTIALLY HIGH RISK LEVEL FACILITIES

Within 90 days of the date of notification by the Executive Officer that the facility is a Potentially High Risk Level Facility, an owner or operator shall submit an Early Action Reduction Plan that identifies a list of measures that can be implemented immediately to reduce the facility-wide health risk. The Early Action Reduction Plan shall include:

1. The name, address, and South Coast AQMD Facility ID number;

2. Identification of device(s) or process(es) that are the key health risk driver(s);

3. Risk reduction measure(s) that can be implemented by the owner or operator that includes but are not limited to procedural changes, process changes, physical modifications, and curtailments; and

4. A schedule for implementing the specified risk reduction measures.

Appendix G — List of Acronyms and Abbreviations

List of Acronyms and Abbreviations

Acronym	Description
2015 OEHHA Guidance Manual	Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments
AB 2588	Air Toxics "Hot Spots" Information and Assessment Act
ADMRT	Air Dispersion Modeling and Risk Tool
AER	Annual Emissions Reporting
ATIR	Air Toxics Inventory Report
CARB	California Air Resources Board
CAS	Chemical Abstracts Service
DEM	Digital Elevation Model
DICE	Diesel Internal Combustion Engine
EIM	Emission Inventory Module
HARP	Hotspots Analysis and Reporting Program
HI	Hazard Index
HRA	Health Risk Assessment
MEIR	Maximum Exposed Individual Resident
MEIW	Maximum Exposed Individual Worker
MICR	Maximum Individual Cancer Risk
NAICS	North American Industry Classification System
NED	National Elevation Dataset
ODC	Ozone Depleting Compound
OEHHA	Office of Environmental Health Hazard Assessment
PMI	Point of Maximum Impact
REL	Reference Exposure Level
RRP	Risk Reduction Plan
SB 1731	Facility Air Toxic Contaminant Risk Audit and Reduction Plan
SIC	Standard Industrial Code
South Coast AQMD	South Coast Air Quality Management District
TAC	Toxic Air Contaminant
U.S. EPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
VRRP	Voluntary Risk Reduction Plan
WAF	Worker Adjustment Factor
WGS84	World Geodetic System 1984