CAPCOA

Air Toxics "Hot Spots" Program

Facility Prioritization Guidelines

Prepared by the:

AB 2588 Risk Assessment Committee of the California Air Pollution Control Officers Association (CAPCOA)

July 1990

July 15, 1990

Final

CAPCOA

Air Toxics "Hot Spots" Program

Facility Prioritization Guidelines

Prepared by the:

AB 2588 Risk Assessment Committee of the California Air Pollution Control Officers Association (CAPCOA), in consultation with the,

Air Toxics Unit
Hazard Evaluation Section
Department of Health Services

and

Special Projects Section
Toxic Air Contaminant Identification Branch
Air Resources Board

July 1990

TABLE OF CONTENTS

Page

I. Introduction

A. Who Developed the Guidelines?..... 1
B. What is the Purpose of the Guidelines?..... 1
C. What Are the Requirements for Facility Prioritization?..... 1
D. How Do Districts Use the Guidelines?..... 2

II. The Emissions and Potency Procedure

A. How Do I Use this Procedure?..... 4
B. Score Facilities (Carcinogenic Effects)..... 5
C. Evaluate Facility Scores (Carcinogenic Effects)..... 7
D. Score Facilities (Non-carcinogenic Effects)..... 9
E. Evaluate Facility Scores (Non-carcinogenic Effects)..... 10
F. Prioritize Facilities..... 12

III. The Dispersion Adjustment Procedure

A. How Do I Use this Procedure?..... 13
B. Score Facilities (Carcinogenic Effects)..... 14
C. Evaluate Facility Scores (Carcinogenic Effects)..... 16
D. Score Facilities (Non-carcinogenic Effects)..... 18
E. Evaluate Facility Scores (Non-carcinogenic Effects)..... 19
F. Prioritize Facilities..... 21

Appendices

A - Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588)
B - List of Substances for Emission Quantification
C - Receptor Proximity Adjustment Factors (The Emissions and Potency Procedure)
D - Basis for the Suggested Thresholds
E - Dispersion Adjustment Factors
F - Receptor Proximity Adjustment Factors (The Dispersion Adjustment Procedure)

LIST OF TABLES

Table		Page
Table II-1	Evaluation of Facility Scores (Carcinogenic Effects).....	9
Table II-2	Evaluation of Facility Scores (Non-carcinogenic Effects)..	11
Table III-1	Evaluation of Facility Scores (Carcinogenic Effects).....	18
Table III-2	Evaluation of Facility Scores (Non-carcinogenic Effects)..	20

LIST OF FIGURES

Figure		Page
Figure II-1	The Emissions and Potency Procedure.....	6
Figure III-1	The Dispersion Adjustment Procedure.....	15

I.

INTRODUCTION

A. Who Developed the Guidelines?

The facility prioritization guidelines were developed by the AB 2588 Risk Assessment Committee (Committee) which was formed at the direction of California Air Pollution Control Officers Association (CAPCOA) Board of Directors. The Committee includes representatives of 11 air pollution control districts (districts) and staff of the Air Resources Board and the Department of Health Services.

B. What is the Purpose of the Guidelines?

The purpose of these guidelines is to provide air pollution control districts with suggested procedures for use in prioritizing facilities into high, intermediate, and low priority categories as required by the Air Toxics "Hot Spots" Information and Assessment Act of 1987 (Air Toxics "Hot Spots" Act). This law established a statewide program for inventory of air toxics emissions from individual facilities as well as requirements for risk assessment and public notification. Appendix A contains a copy of the Air Toxics "Hot Spots" Act.

The guidelines are available to those districts who choose to use them. However, there is no requirement that the districts use these guidelines. Furthermore, it should be recognized that any district may develop prioritization procedures other than those presented in these guidelines.

C. What Are the Requirements for Facility Prioritization?

The Air Toxics "Hot Spots" Act requires districts to prioritize and then categorize facilities for the purposes of health risk assessment. This categorization process is to be based on examination of the emissions

inventory data, in consultation with the State Air Resources Board (ARB) and the State Department of Health Services (DHS). The first facilities subject to the Air Toxics "Hot Spots" Act are required to be prioritized by December 1, 1990. These are the facilities which were required to submit emission inventory plans by August 1, 1989.

The districts are required to designate high, intermediate, and low priority categories and include each facility within the appropriate category based on its individual priority. In establishing priorities, the district is to consider the potency, toxicity, quantity, and volume 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 the district finds and determines may indicate that the facility may pose a significant risk to receptors. The district is required to hold a public hearing prior to the final establishment of priorities and categories.

For the first and subsequent rounds of prioritizing, facilities which are not placed in the high priority category one year may be placed in the high priority category in a later year.

Within 150 days of the designation of priorities and categories, the operator of every facility that has been included within the highest priority category must prepare and submit to the district a health risk assessment prepared pursuant to Health and Safety Code Section 44361. The district may at its discretion, grant a 30-day extension for submittal of the health risk assessment. In addition, a district may require any facility to prepare and submit a risk assessment according to the district priorities established for the purposes of the Air Toxics "Hot Spots" Program.

For guidance on the risk assessment procedures, refer to the Air Toxics "Hot Spots" Program Risk Assessment Guidelines as prepared by CAPCOA.

D. How Do Districts Use The Guidelines?

The prioritization guidelines consist of two separate procedures for prioritizing facilities in accordance with the requirements of the Air Toxics "Hot Spots" Act. One is referred to as the emissions and potency procedure and the other is referred to as the dispersion adjustment procedure. Chapter II describes the emissions and potency procedure and Chapter III describes the dispersion adjustment procedure.

There are a number of ways the guidelines may be used by the district for prioritizing facilities. For example, the district may prioritize

facilities by using only the emissions and potency procedure or the dispersion adjustment procedure described in Chapters II and III, respectively. Another option is to use both procedures for prioritization. For example, the emissions and potency procedure may serve as a preliminary approach whereby facilities tentatively identified as high priority are reevaluated using the more comprehensive dispersion adjustment procedure to determine if the high priority designation is appropriate.

The guidelines also provide flexibility in where to set cutpoints or thresholds for high, intermediate, and low priority. Although both procedures include suggested thresholds as examples, the district may select thresholds that are higher or lower than those presented in the procedures.

During the development of the two procedures presented in these guidelines, the Committee recognized that there may be other workable prioritization procedures that the district may choose to develop. The district may use such procedures independently or in conjunction with the procedures presented in the guidelines.

The Committee identified the use of screening models as one other possible approach for prioritizing facilities. However, a detailed discussion of screening models, the necessary inputs, as well as the appropriate default values are beyond the scope of these guidelines.

II.

THE EMISSIONS AND POTENCY PROCEDURE

A. How Do I Use This Procedure?

This prioritization (categorization) procedure was developed for use in conjunction with the emission data collected and reported pursuant to requirements of the ARB Emission Inventory Criteria and Guidelines Regulations (California Code of Regulations, Title 17, Sections 93300-93347). These regulations outline requirements for inventory plans and reports. The plans for collecting the emission data, by source testing or emission estimation, must be approved by the district. Following district approval of the plan, data is collected and the Emission Inventory Report is prepared.

This prioritization procedure primarily relies on three parameters to prioritize facilities; emissions, potency or toxicity, and the proximity of potential receptors. Information regarding the emission of toxic substances from facilities is obtained from the Emissions Inventory Report submitted by the facility to the district in accordance with the Air Toxics "Hot Spots" Act. The emissions reported under this program are routine or predictable and include continuous and intermittent releases and predictable process upsets or leaks. Emissions for unpredictable releases (e.g., accidental catastrophic releases) are not reported under this program.

The district may allow use of more current facility emissions data than submitted in the Emissions Inventory Report. Some districts may require that use of updated emissions information be based on an enforceable condition of the facility's permit to operate. Interested facility operators should consult with the district on this provision of the guidelines. Information concerning the potency and toxicity of substances is provided in the Air Toxics "Hot Spots" Program Risk Assessment Guidelines prepared by CAPCOA. Information on the distance of a facility to potential receptors must be obtained from the facility operator.

Facilities that emit substances identified in Appendix B (list of substances for emission quantification) that have carcinogenic effects

receive a score that is the sum of emissions for each substance, which is required to be quantified and reported on a reporting form, multiplied by the appropriate potency (unit risk number) as well as a receptor proximity adjustment and normalization factor. The purpose of the normalization factor, which serves as a constant, is to put the scores for carcinogenic effects and non-carcinogenic effects on a more convenient scale for evaluation.

The receptor proximity can be determined by adding: 1) the distance (in meters) from the facility property line to the nearest potential receptor; to 2) the distance from the facility's nearest emitting source to the facility's property line. Using the receptor proximity in conjunction with the information provided in Appendix C, the appropriate receptor proximity adjustment factor can be determined for each facility.

Facilities that emit substances identified in Appendix B (list of substances for emission quantification) that have non-carcinogenic effects receive scores that are the sum of emissions for each substance, which is required to be quantified and reported on a reporting form, divided by the appropriate toxicity and multiplied by the receptor proximity and normalization factors.

A facility will receive two scores (one for carcinogenic effects and one for non-carcinogenic effects) if: 1) at least one of the substances emitted results in both carcinogenic and non-carcinogenic effects; or 2) the substances emitted include those that result in carcinogenic effects and others that result in non-carcinogenic effects.

Each facility is designated as either high, intermediate, or low priority based on a review of facility scores. For facilities that are not initially identified as high or low priority, additional factors may be considered for prioritization.

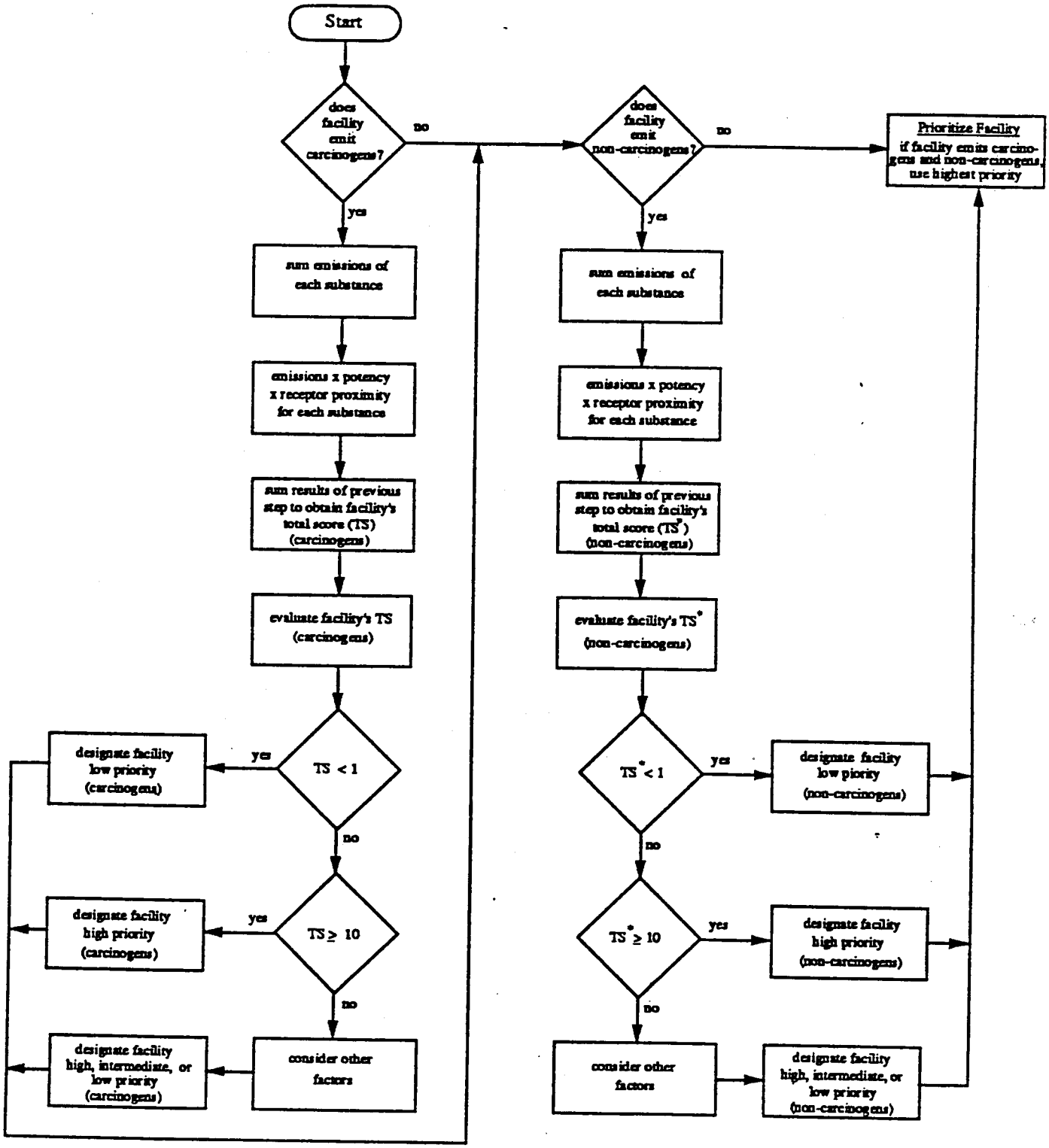
The following numbered steps describe how the procedure including the suggested thresholds can be used to prioritize facilities. In addition, Figure II-1 illustrates the procedure in a flowchart format.

B. Step 1. Score Facilities (Carcinogenic Effects)

If substances, as listed in Appendix B (list of substances for emission quantification), with carcinogenic effects are not emitted from the facility, go to step 3. For each facility, multiply the total emissions in pounds per year (lbs/yr) for each substance by the appropriate unit risk factor, receptor proximity and normalization factors.

Figure II-1

The Emissions and Potency Procedure[a]



a - The thresholds used in this figure are examples. The district may select thresholds that vary from those presented.

For substances with a range of unit risk factors, use the highest of the values for prioritizing the facility. To arrive at a total facility score (TS) for carcinogenic effects, sum the results for each substance emitted. The calculation is expressed by the following equation:

$$TS = \{\sum^{c} (E_c)(P_c)\}(RP)(1.7 \times 10^3) \qquad (1)$$

Where: TS = total facility score, the sum of scores for all substances with carcinogenic effects

c = specific carcinogenic substance

E_c = emissions of c (lbs/year)

P_c = unit risk of c

RP = receptor proximity adjustment factor (see Appendix C)

1.7×10^3 = normalization factor

C. Step 2. Evaluate Facility Scores (Carcinogenic Effects)

Based on the TS for each facility, rank each facility as either high, intermediate or low priority. The primary purposes of the evaluation procedure described below are to: 1) ensure that facilities that may represent a significant concern are designated as high priority; 2) identify facilities that are anticipated to be low priority; and 3) provide for consideration of other factors for facilities not initially designated as high or low priority. This evaluation procedure is conservative because facilities which do not necessarily represent a significant concern may be designated as high priority. Only upon the completion of a comprehensive risk assessment will the risks posed by facilities be accurately characterized.

As part of the evaluation of the facility scores, these procedures suggest a high priority threshold on the order of 10 to 100. However, the district may select a high priority threshold that is lower than 10 or greater than 100. The basis for the suggested thresholds is provided in Appendix D. As an example of how the procedures are to be used, the

priority designation suggestions a, b, and c as well as Table II-1 and Figure II-1 use a low priority threshold of 1 and a high priority threshold of 10.

a. If the facility's TS is equal to or greater than 10, designate the facility as high priority. Because the threshold for high priority is based on a conservative modeling scenario, it is possible that facilities with higher scores than the threshold may not significantly impact receptors.

b. If the facility's TS is below 1, designate the facility as low priority. Because the threshold is based on a conservative modeling scenario, facilities with TSs below 1 are expected to represent the lower end of the spectrum in terms of receptor impacts. However, because the low priority threshold is based on a conservative scenario, it is possible that facilities with higher scores than the threshold may not significantly impact receptors.

c. Evaluate the facilities that have not been designated as high or low priority. Because there may be facilities that: 1) have scores between 1 and 10; and 2) may impact receptors, it is necessary to consider other factors for prioritization. The factors that are provided below, as well as any additional factors identified by the district, may be used to determine if any of the remaining facilities should be designated as high priority. The factors to consider may include:

   - emissions of substances (listed in Appendix B) with carcinogenic effects for which potency estimates are not available
   - population density near the facility
   - proximity of sensitive receptors to the facility
   - receptor proximity less than 50 meters
   - elevated receptors/complex terrain
   - frequency of nuisance violations
   - importance of noninhalation pathway for substance(s) emitted by the facility

   Determine if any factors or combination of factors justify designating the facility as high priority. The basis for designating such facilities as high priority is provided by the district. The remaining facilities are designated as intermediate priority.

Table II-1[a]

Evaluation of Facility Scores (Carcinogenic Effects)

Facility Score	Facility Designation
$TS \geq 10$	High Priority
$TS < 1$	Low Priority
$1 \leq TS < 10$	Consider Other Factors

a - The thresholds in this table are presented as examples. The district may select thresholds that differ from those presented.

D. Step 3. Score Facilities (Non-carcinogenic Effects)

If substances, as listed in Appendix B (list of substances for emission quantification), with non-carcinogenic effects are not emitted from the facility, go to step 5. For each facility, divide total emissions for each substance by the appropriate acceptable exposure level. The result of this calculation is then multiplied by the receptor proximity and normalization factors. Express emissions in maximum pounds per hour (max. lbs/hr) for substances associated with acute toxicity and average pounds per hour (lbs/hr) for substances associated with chronic toxicity. For each substance associated with both acute and chronic toxicity, determine and then use only the highest of the two scores (one for acute toxicity and one for chronic toxicity) to calculate the total facility score (TS^*) for non-carcinogenic effects. To arrive at a TS^*, sum the results for each substance emitted. The calculation is expressed by the following equation:

$$TS^* = \sum^{t} (E_t / P_t)(RP)(150)^a \qquad (2)$$

Where: TS^* = total facility score, the sum of scores for all substances with non-carcinogenic effects

t = toxic substance

E_t = emissions of t (maximum lbs/hr for substances associated with acute toxicity and average lbs/hr for substances associated with chronic toxicity)

P_t = acceptable exposure level of t (ug/m^3)

RP = receptor proximity adjustment factor (see Appendix C)

150 = normalization factor

a - For acute acceptable exposure levels, use a normalization factor of 1.5×10^3.

E. Step 4. Evaluate Facility Scores (Non-carcinogenic Effects)

Based on the TS^* for each facility, rank each facility as either high, intermediate or low priority. The primary purposes of the evaluation procedure described below are to: 1) ensure that facilities that may represent a significant concern are designated as high priority; 2) identify facilities that are anticipated to be low priority; and 3) provide for consideration of other factors for facilities not initially designated as high or low priority. This evaluation procedure is conservative because facilities which do not present a significant concern may be designated as high priority. Only upon the completion of a comprehensive risk assessment will the risks posed by facilities be accurately characterized.

As part of the evaluation of facility scores, these procedures suggest a high priority threshold on the order of 10 to 100. However, the district may select a high priority threshold that is lower than 10 or greater than 100. The basis for the suggested thresholds are provided in Appendix D. As an example of how the procedures are to be used, the priority designation suggestions a, b, and c as well as Table II-2 and Figure II-1 use a low priority threshold of 1 and a high priority threshold of 10.

a. If the facility's TS^* is equal to or greater than 10, designate the facility as high priority. Because the threshold for high priority is based on a conservative modeling scenario, it is possible that facilities with higher scores than the threshold may not significantly impact receptors.

b. If the facility's TS^* is below 1, designate the facility as low priority. Because the threshold is based on a conservative modeling scenario, facilities with TS^*s below 1 are expected to represent the lower end of the spectrum in terms of receptor impacts. However, because the low priority threshold is based on a conservative modeling scenario, facilities with higher scores may not significantly impact receptors.

c. Evaluate the facilities that have not been designated as high or low priority. Because there may be facilities that: 1) have scores between 1 and 10; and 2) may impact receptors, it is necessary to consider other factors for prioritization. The factors that are provided below, as well as any additional factors identified by the district, may be used to determine if any of the remaining facilities should be designated as high priority. The factors to consider may include:

- o total emissions of substances with non-carcinogenic effects that have the same toxicological endpoint (e.g., reproductive toxicity, neurotoxicity, respiratory effects)
- o total emissions of substances (listed in Appendix B) that have non-carcinogenic effects for which acceptable exposure levels are not available
- o population density near the facility
- o proximity of sensitive receptors to the facility
- o receptor proximity less than 50 meters
- o elevated receptors/complex terrain
- o frequency of nuisance violations
- o importance of noninhalation pathway for substance(s) emitted by the facility

Determine if any factors or combination of factors justify designating the facility as high priority. The basis for designating such facilities as high priority is provided by the district. The remaining facilities are designated as intermediate priority.

Table II-2[a]

Evaluation of Facility Scores (Non-carcinogenic Effects)

Facility Score	Facility Designation
$TS^* \geq 10$	High Priority
$TS^* < 1$	Low Priority
$1 \leq TS^* < 10$	Consider Other Factors

a - The thresholds in this table are presented as examples. The district may select thresholds that differ from those presented.

F. Step 5. Prioritize Facilities

Each facility is prioritized as either high, intermediate or low. If a facility emits only substances with carcinogenic or non-carcinogenic effects, the priority of the facility is that determined during step 2 or 4, respectively. If a facility emits a substance(s) with carcinogenic and non-carcinogenic health effects, the facility is prioritized with the highest of the priorities received from steps 2 and 4.

III.

THE DISPERSION ADJUSTMENT PROCEDURE

A. How Do I Use this Procedure?

This prioritization (categorization) procedure was developed for use in conjunction with the emission data collected and reported pursuant to requirements of the ARB Emission Inventory Criteria and Guidelines Regulations (California Code of Regulations, Title 17, Sections 93300-93347). These regulations outline requirements for inventory plans and reports. The plans for collecting the emission data, by source testing or emission estimation, must be approved by the district. Following district approval of the plan, data is collected and the Emission Inventory Report is prepared.

This procedure primarily relies on four parameters to prioritize facilities; emissions, potency or toxicity, dispersion, and receptor proximity. Information regarding the emission of toxic substances and release heights from facilities is obtained from the Emissions Inventory Report submitted by the facility to the district in accordance with the Air Toxics "Hot Spots" Act. The emissions reported under this program are routine and predictable and include continuous and intermittent releases and predictable process upsets or leaks. Emissions for unpredictable releases (e.g., accidental catastrophic releases) are not reported under this program.

The district may use more current facility emissions data than submitted in the Emissions Inventory Report. Some districts may require that use of updated emissions information be based on an enforceable condition of the facility's permit to operate. Interested facility operators should consult with the district on this provision of the guidelines. Information concerning the potency and toxicity of substances is provided in the Air Toxics "Hot Spots" Program Risk Assessment Guidelines prepared by CAPCOA. The appropriate dispersion adjustment factor for each release point can be determined from Appendix E. The distance of a facility to potential receptors must be obtained from the facility operator.

Facilities that emit substances identified in Appendix B (list of substances for emission quantification) that have carcinogenic effects

receive a score that is the sum of emissions for each substance, which is required to be quantified and reported on a reporting form, by release point multiplied by the appropriate potency (unit risk number) and dispersion adjustment as well as a receptor proximity adjustment and normalization factor. The purpose of the normalization factor, which serves as a constant, is to put the scores for carcinogenic effects and non-carcinogenic effects on a more convenient scale for evaluation.

The receptor proximity can be determined by adding: 1) the distance (in meters) from the facility property line to the nearest potential receptor; to 2) the distance from the facility's nearest emitting source to the facility property line. Using the receptor proximity in conjunction with the information provided in Appendix F, the appropriate receptor proximity adjustment factor can be determined for each release height and receptor proximity.

Facilities that emit substances identified in Appendix B (list of substances for emission quantification) that have non-carcinogenic effects receive a score that is the sum of emissions for each substance, which is required to be quantified and reported on a reporting form, by release point divided by the appropriate toxicity (acceptable exposure level) and multiplied by a dispersion adjustment as well a receptor proximity adjustment and normalization factor.

A facility will receive two scores (one for carcinogenic effects and one for non-carcinogenic effects) if: 1) at least one of the substances emitted results in both carcinogenic and non-carcinogenic effects; or 2) the substances emitted include those that result in carcinogenic effects and others that result in non-carcinogenic effects.

Each facility is designated as either high, intermediate, or low priority based on a review of facility scores. For facilities that are not initially identified as high or low priority, additional factors may be considered for prioritization.

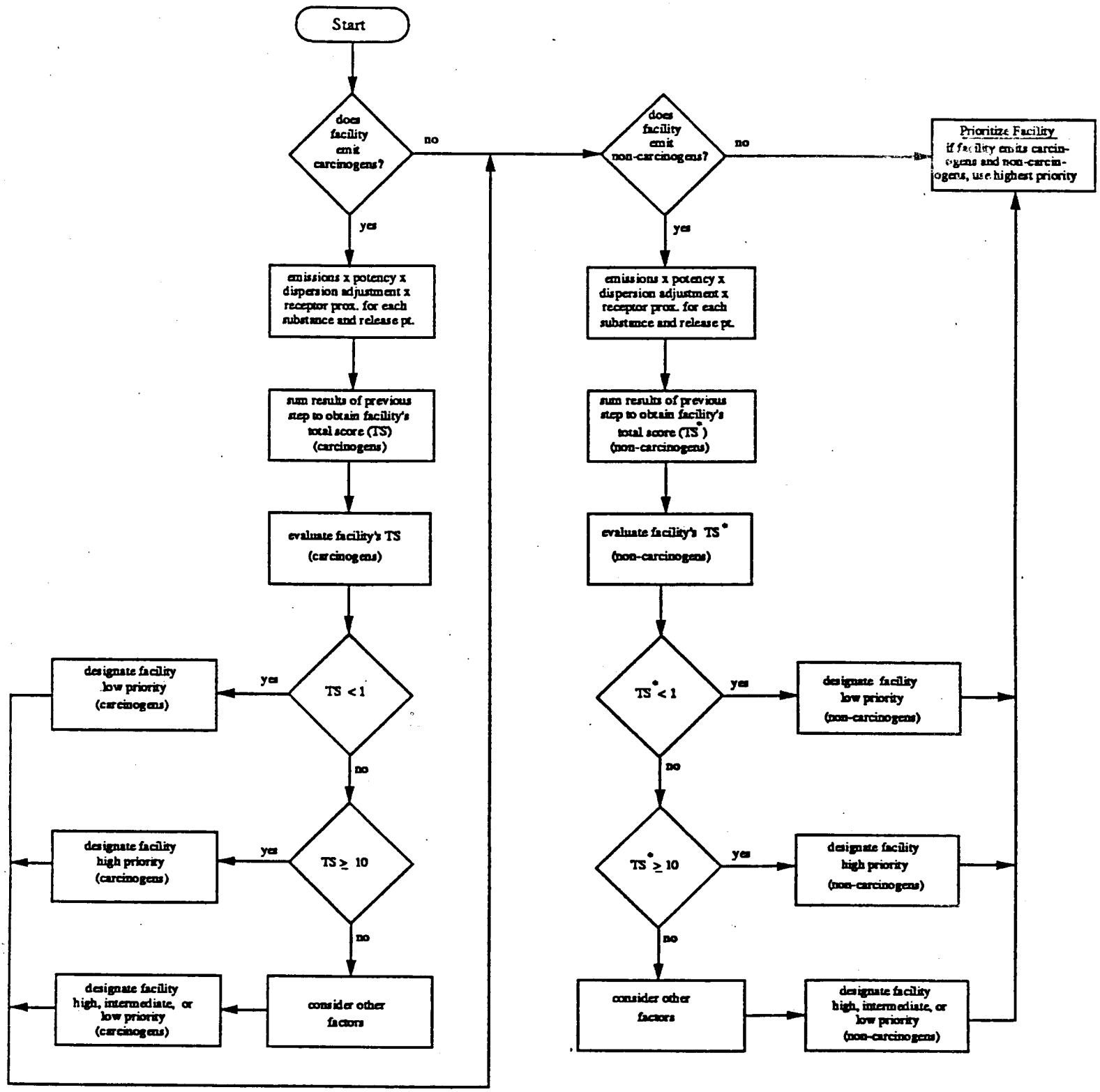
The following numbered steps describe how the procedure including the suggested thresholds can be used to prioritize facilities. In addition, Figure III-1 illustrates the procedure in a flowchart format.

B. Step 1. Score Facilities (Carcinogenic Effects)

If substances, as listed in Appendix B (list of substances for emission quantification), with carcinogenic effects are not emitted from the facility, go to step 3. For each facility, multiply the emissions in pounds per year (lbs/yr) for each substance and release point by the appropriate unit risk factor, dispersion adjustment, as well as a receptor proximity adjustment and normalization factor. For substances with a range of unit risk factors, use the highest of the values for prioritizing the facility. To arrive at a total facility score (TS) for carcinogenic effects, sum the results by release

Figure III-1

The Dispersion Adjustment Procedure[a]



The thresholds used in this figure are examples. The district may select thresholds that vary from those presented.

point for each substance emitted. The calculation is expressed by the following equation:

$$TS = \{\sum^{c} (E_{c,h})(P_c)(D_h)(RP_h)\}(28) \qquad (1)$$

Where: TS = total facility score, the sum of scores for all substances with carcinogenic effects

c = specific carcinogenic substance

$E_{c,h}$ = emissions of c (lbs/year) at h

P_c = unit risk of c

h = release height

D_h = dispersion adjustment factor for h (see Appendix E)

RP_h = receptor proximity adjustment factor for h (see Appendix F)

28 = normalization factor

C. Step 2. Evaluate Facility Scores (Carcinogenic Effects)

Based on the TS for each facility, rank each facility as either high, intermediate or low priority. The primary purposes of the evaluation procedure described below are to: 1) ensure that facilities that may represent a significant concern are designated as high priority; 2) identify facilities that are anticipated to be low priority; and 3) provide for consideration of other factors for facilities not initially designated as high or low priority. This evaluation procedure is conservative because facilities which do not necessarily represent a significant concern may be designated as high priority. Only upon the completion of a comprehensive risk assessment will the risks posed by facilities be accurately characterized.

As part of the evaluation of scores, these procedures suggest a high priority threshold on the order of 10 to 100. However, the district may select a high priority threshold that is lower than 10 or greater than 100. The basis for the suggested thresholds is provided in Appendix D. As an example of how the procedures are to be used, the priority designation suggestions a, b, and c as well as Table III-1 and Figure III-1 use a low priority threshold of 1 and a high priority threshold of 10.

a. If the facility's TS is equal to or greater than 10, designate the facility as high priority. Because the threshold for high priority

is based on a conservative modeling scenario, it is possible that facilities with higher scores than the threshold may not significantly impact receptors.

b. If the facility's TS is below 1, designate the facility as low priority. Because the threshold is based on a conservative modeling scenario, facilities with TSs below 1 are expected to represent the lower end of the spectrum in terms of receptor impacts. However, because the low priority threshold is based on a conservative scenario, it is possible that facilities with higher scores than the threshold may not significantly impact receptors.

c. Evaluate the facilities that have not been designated as high or low priority. Because there may be facilities that: 1) have scores between 1 and 10; and 2) may impact receptors, it is necessary to consider other factors for prioritization. The factors that are provided below, as well as any additional factors identified by the district, may be used to determine if any of the remaining facilities should be designated as high priority. The factors to consider may include:

- emissions of substances (listed in Appendix B) with carcinogenic effects for which potency estimates are not available
- population density near the facility
- receptor proximity less than 50 meters
- elevated receptors/complex terrain
- proximity of sensitive receptors to the facility
- frequency of nuisance violations
- importance of noninhalation pathway for substance(s) emitted by the facility

Determine if any factors or combination of factors justify designating the facility as high priority. The basis for designating such facilities as high priority is provided by the district. The remaining facilities are designated as intermediate priority.

Table III-1[a]

Evaluation of Facility Scores (Carcinogenic Effects)

Facility Score	Facility Designation
$TS \geq 10$	High Priority
$TS < 1$	Low Priority
$1 \leq TS < 10$	Consider Other Factors

a - The thresholds in this table are presented as examples. The district may select thresholds that differ from those presented.

D. Step 3. Score Facilities (Non-carcinogenic Effects)

If substances, as listed in Appendix B (list of substances for emission quantification), with non-carcinogenic effects are not emitted from the facility, go to step 5. For each facility, divide emissions for each substance and release point by the appropriate acceptable exposure level. Multiply the result by the appropriate dispersion adjustment as well as the receptor proximity adjustment and normalization factors. **Express emissions in maximum pounds per hour (max. lbs/hr) for substances associated with acute toxicity and average pounds per hour (lbs/hr) for substances associated with chronic toxicity.** For each substance associated with both acute and chronic toxicity, determine and then use only the highest of the two scores (one for acute toxicity and one for chronic toxicity) to calculate the total facility score (TS^*) for non-carcinogenic effects. To arrive at a TS^*, sum the results by release point for each substance emitted. The calculation is expressed by the following equation:

$$TS^* = \sum^{t} (E_{t,h} / P_t)(D_h)(RP_h)(2.5)^a \qquad (2)$$

Where: TS^* = total facility score, sum of scores for all substances with non-carcinogenic effects

t = specific toxic substance

$E_{t,h}$ = emissions of t at h (maximum lbs/hr for substances associated with acute toxicity and average lbs/hr for substances associated with chronic toxicity)

P_t = acceptable exposure level of t (ug/m^3)

h = release height

D_h = dispersion adjustment factor for h (see Appendix E)

RP_h = receptor proximity adjustment factor for h (see Appendix F)

2.5 = normalization factor

a - For acute acceptable exposure levels, use a normalization factor of 25.

E. Step 4. Evaluate Facility Scores (Non-carcinogenic Effects)

Based on the TS^* for each facility, rank each facility as either high, intermediate or low priority. The primary purposes of the evaluation procedure described below are to: 1) ensure that facilities that may represent a significant concern are designated as high priority; 2) identify facilities that are anticipated to be low priority; and 3) provide for consideration of other factors for facilities not initially designated as high or low priority. This evaluation procedure is conservative because facilities which do not present a significant concern may be designated as high priority. Only upon the completion of a comprehensive risk assessment will the risks posed by facilities be accurately characterized.

As part of the evaluation of facility scores, these procedures suggest a high priority threshold on the order of 10 to 100. However, the district may select a high priority threshold that is lower than 10 or greater than 100. The basis for the suggested thresholds is provided in Appendix D. As an example of how the procedures are to be used, the priority designation suggestions a, b, and c as well as Table III-2 and Figure III-1 use a low priority threshold of 1 and a high priority threshold of 10.

a. If the facility's TS^* is equal to or greater than 10, designate the facility as high priority. Because the threshold for high priority is based on a conservative modeling scenario, it is possible that facilities with higher scores than the threshold may not significantly impact receptors.

b. If the facility's TS^* is below 1, designate the facility as low priority. Because the threshold is based on a conservative modeling scenario, facilities with TS^* below 1 are expected to represent the lower end of the spectrum in terms of receptor impacts. However, because the low priority threshold is based on a

conservative scenario, facilities with higher scores may not significantly impact receptors.

c. Evaluate the facilities that have not been designated as high or low priority. Because there may be facilities that: 1) have scores between 1 and 10; and 2) may impact receptors, it is necessary to consider other factors for prioritization. The factors that are provided below, as well as any additional factors identified by the district, may be used to determine if any of the remaining facilities should be designated as high priority. The factors to consider may include:

- o total emissions of substances with non-carcinogenic effects that have the same toxicological endpoints (e.g., reproductive toxicity, neurotoxicity, respiratory toxicity)
- o total emissions of substances (listed in Appendix B) that have non-carcinogenic effects for which acceptable exposure levels are not available
- o population density near the facility
- o receptor proximity less than 50 meters
- o elevated receptors/complex terrain
- o proximity of sensitive receptors to the facility
- o frequency of nuisance violations
- o importance of noninhalation pathway for substance(s) emitted by the facility

Determine if any factors or combination of factors justify designating the facility as high priority. The basis for designating such facilities as high priority is provided by the district. The remaining facilities are designated as intermediate priority.

Table III-2[a]

Evaluation of Facility Scores (Non-carcinogenic Effects)

Facility Score	Facility Designation
$TS^* \geq 10$	High Priority
$TS^* < 1$	Low Priority
$1 \leq TS^* < 10$	Consider Other Factors

a - The thresholds in this Table are presented as examples. The district may select thresholds that differ from those presented

F. Step 5. Prioritize Facilities

Each facility is prioritized as either high, intermediate or low. If a facility emits only carcinogens or non-carcinogens the priority is that determined during step 2 or 4, respectively. If a facility emits a substance(s) with carcinogenic and non-carcinogenic effects, the facility is prioritized with the highest of the priorities received from steps 2 and 4.

July 15, 1990

APPENDIX A

Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588)

Assembly Bill No. 2588

CHAPTER 1252

An act to add Part 6 (commencing with Section 44300) to Division 26 of the Health and Safety Code, relating to air pollution.

[Approved by Governor September 27, 1987. Filed with Secretary of State September 27, 1987.]

LEGISLATIVE COUNSEL'S DIGEST

AB 2588, Connelly. Air pollution: air toxics emission assessments and plans.

(1) Under existing law, the State Air Resources Board adopts, and air quality management districts and air pollution control districts implement, rules and regulations for the control of air pollutants emitted from stationary sources and issue permits for the operation of facilities which emit air pollutants.

This bill would enact the Air Toxics "Hot Spots" Information and Assessment Act of 1987. The bill would require the state board, by March 1, 1988, to compile a list of substances which present a chronic or acute threat to public health when present in the ambient air, as specified. The bill would require the operator of specified facilities which emit air toxics to prepare and submit to the district, in accordance with a designated schedule, a proposed comprehensive emissions inventory plan in accordance with rules and regulations adopted by the state board for this purpose and to submit the proposed plan to the district for review and approval by August 1, 1989, for certain facilities, and by August 1, 1990, for other facilities, as specified. The bill would, as an alternative, permit a district to prepare an industrywide emissions inventory and health risk assessment for any class of facilities that meet designated conditions.

The bill would require the operator of a facility, within 180 days after approval of the plan for that facility, to implement the plan and report thereon to the district. The bill would require the district to review the report and notify the State Department of Health Services, the Department of Industrial Relations, and the city or county health department of its findings and determinations. The bill would require the operator of a facility to update the emissions inventory biennially. The bill would require the state board, on or before July 1, 1989, to compile and make available to other state and local public agencies all data collected under these provisions and, on or before March 1, 1990, emissions inventory data for mobile sources and area sources not subject to district permit requirements, and data on natural source emissions by district.

The bill would provide a procedure whereby an operator may designate any information required to be submitted to the district as a trade secret not for public disclosure. If the district is requested to

disclose any information so designated, it would be required to notify the operator, who would have 30 days to obtain a court order declaring that the information is a trade secret and not a public record and prohibiting its disclosure. The bill would make the knowing and unauthorized disclosure of trade secret information by a district officer or employee a misdemeanor, thereby imposing a state-mandated local program.

The bill would require the district, within 90 days of completion of the review of emissions inventory data, but not later than December 1, 1990, to prioritize and categorize facilities for purposes of health risk assessment into high, intermediate, and low priority categories, taking specified matters into account. The bill would require the operator of every high priority category facility, within 180 days of categorization, to prepare and submit to the district a health risk assessment utilizing scientific methodologies, as specifed, and would specify what the health risk assessment is to contain and how it is to be prepared. The bill would require the district to approve the health risk assessment. Upon that approval, the bill would require the operator to notify all exposed persons regarding the health risk assessment if, in the judgment of the district, the assessment indicates a significant health risk associated with emissions from the facility. The bill would require the district to prepare and publish an annual report summarizing all health risk assessments.

The bill would direct the state board to utilize the reports and health risk assessments developed pursuant to the bill to identify and control toxic air contaminants pursuant to other provisions.

The bill would direct the state board to adopt fees to be paid by operators of facilities subject to the bill to meet the costs of the state board, the districts, and the department under the bill. The bill would direct the state board, with the participation of the districts on a voluntary basis, to establish a technical review group for purposes of developing a fee schedule. The districts would collect the fees and any applicable administrative civil penalties, deduct their costs, and transmit the balance to the Controller for deposit in the Air Toxics Inventory and Assessment Account in the General Fund, which the bill would create. The money in the account would be available, upon appropriation to the state board and the department, for purposes of the bill.

The bill would require every district to adopt the requirements of the bill in its district permit system.

The bill would provide for specified civil penalties for violations of the bill.

The bill would specify that all provisions of the act would become operative on July 1, 1988, except provisions directing the state board to adopt fees to be paid by operators of facilities subject to the bill.

By imposing these requirements on districts the bill would impose a state-mandated local program.

(2) The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement, including the creation of a State Mandates Claims Fund to pay the costs of mandates which do not exceed $500,000 statewide and other procedures for claims whose statewide costs exceed $500,000.

This bill would provide that no reimbursement is required by this act for a specified reason.

Moreover, the bill would provide that no reimbursement shall be made from the State Mandates Claims Fund for other costs mandated by the state pursuant to this act, but would recognize that local agencies and school districts may pursue any available remedies to seek reimbursement for those other costs.

The people of the State of California do enact as follows:

SECTION 1. Part 6 (commencing with Section 44300) is added to Division 26 of the Health and Safety Code, to read:

PART 6. AIR TOXICS "HOT SPOTS" INFORMATION AND ASSESSMENT

CHAPTER 1. LEGISLATIVE FINDINGS AND DEFINITIONS

44300. This part shall be known and may be cited as the Air Toxics "Hot Spots" Information and Assessment Act of 1987.

44301. The Legislature finds and declares all of the following:

(a) In the wake of recent publicity surrounding planned and unplanned releases of toxic chemicals into the atmosphere, the public has become increasingly concerned about toxics in the air.

(b) The Congressional Research Service of the Library of Congress has concluded that 75 percent of the United States population lives in proximity to at least one facility that manufactures chemicals. An incomplete 1985 survey of large chemical companies conducted by the Congressional Research Service documented that nearly every chemical plant studied routinely releases into the surrounding air significant levels of substances proven to be or potentially hazardous to public health.

(c) Generalized emissions inventories compiled by air pollution control districts and air quality management districts in California confirm the findings of the Congressional Research Service survey as well as reveal that many other facilities and businesses which do not actually manufacture chemicals do use hazardous substances in sufficient quantities to expose, or in a manner that exposes, surrounding populations to toxic air releases.

(d) These releases may create localized concentrations or air toxics "hot spots" where emissions from specific sources may expose

individuals and population groups to elevated risks of adverse health effects, including, but not limited to, cancer and contribute to the cumulative health risks of emissions from other sources in the area. In some cases where large populations may not be significantly affected by adverse health risks, individuals may be exposed to significant risks.

(e) Little data is currently available to accurately assess the amounts, types, and health impacts of routine toxic chemical releases into the air. As a result, there exists significant uncertainty about the amounts of potentially hazardous air pollutants which are released, the location of those releases, and the concentrations to which the public is exposed.

(f) The State of California has begun to implement a long-term program to identify, assess, and control ambient levels of hazardous air pollutants, but additional legislation is needed to provide for the collection and evaluation of information concerning the amounts, exposures, and short- and long-term health effects of hazardous substances regularly released to the surrounding atmosphere from specific sources of hazardous releases.

(g) In order to more effectively implement control strategies for those materials posing an unacceptable risk to the public health, additional information on the sources of potentially hazardous air pollutants is necessary.

(h) It is in the public interest to ascertain and measure the amounts and types of hazardous releases and potentially hazardous releases from specific sources that may be exposing people to those releases, and to assess the health risks to those who are exposed.

44302. The definitions set forth in this chapter govern the construction of this part.

44303. "Air release" or "release" means any activity that may cause the issuance of air contaminants, including the actual or potential spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing of a substance into the ambient air and that results from the routine operation of a facility or that is predictable, including, but not limited to, continuous and intermittent releases and predictable process upsets or leaks.

44304. "Facility" means every structure, appurtenance, installation, and improvement on land which is associated with a source of air releases or potential air releases of a hazardous material.

44306. "Health risk assessment" means a detailed comprehensive analysis prepared pursuant to Section 44361 to evaluate and predict the dispersion of hazardous substances in the environment and the potential for exposure of human populations and to assess and quantify both the individual and populationwide health risks associated with those levels of exposure.

44307. "Operator" means the person who owns or operates a facility or part of a facility.

44308. "Plan" means the emissions inventory plan which meets the conditions specified in Section 44342.

44309. "Report" means the emissions inventory report specified in Section 44341.

Chapter 2. Facilities Subject to this Part

44320. This part applies to the following:

(a) Any facility which manufactures, formulates, uses, or releases any of the substances listed pursuant to Section 44321 or any other substance which reacts to form a substance listed in Section 44321 and which releases or has the potential to release total organic gases, particulates, or oxides of nitrogen or sulfur in the amounts specified in Section 44322.

(b) Except as provided in Section 44323, any facility which is listed in any existing toxics use or toxics air emission survey, inventory, or report released or compiled by a district.

44321. For the purposes of Section 44320, the state board shall compile and maintain a list of substances that contains, but is not limited to, all of the following:

(a) Substances identified by reference in paragraph (1) of subdivision (b) of Section 6382 of the Labor Code and substances placed on the list prepared by the National Toxicology Program issued by the United States Secretary of Health and Human Services pursuant to paragraph (4) of Section 262 of Public Law 95-622 of 1978. For the purposes of this subdivision, the state board may remove from the list any substance which meets both of the following criteria:

(1) No evidence exists that it has been detected in air.

(2) The substance is not manufactured or used in California, or, if manufactured or used in California, because of the physical or chemical characteristics of the substance or the manner in which it is manufactured or used, there is no possibility that it will become airborne.

(b) Carcinogens and reproductive toxins referenced in or compiled pursuant to Section 25249.8, except those which meet both of the criteria identified in subdivision (a).

(c) The candidate list of potential toxic air contaminants and the list of designated toxic air contaminants prepared by the state board pursuant to Article 2 (commencing with Section 39660) of Chapter 3.5 of Part 2, including, but not limited to, all substances currently under review and scheduled or nominated for review and substances identified and listed for which health effects information is limited.

(d) Substances for which an information or hazard alert has been issued by the repository of current data established pursuant to Section 147.2 of the Labor Code.

(e) Substances reviewed, under review, or scheduled for review as air toxics or potential air toxics by the Office of Air Quality

Planning and Standards of the Environmental Protection Agency, including substances evaluated in all of the following categories or their equivalent: preliminary health and source screening, detailed assessment, intent to list, decision not to regulate, listed, standard proposed, and standard promulgated.

(f) Any additional substances recognized by the state board as presenting a chronic or acute threat to public health when present in the ambient air, including, but not limited to, any neurotoxins or chronic respiratory toxins not included within subdivision (a), (b), (c), (d), or (e).

44322. This part applies to facilities specified in Section 44320 in accordance with the following schedule:

(a) For those facilities that release, or have the potential to release, 25 tons per year or greater of total organic gases, particulates, or oxides of nitrogen or sulfur, this part becomes effective on July 1, 1988.

(b) For those facilities that release, or have the potential to release, more than 10 but less than 25 tons per year of total organic gases, particulates, or oxides of nitrogen or sulfur, this part becomes effective July 1, 1989.

(c) For those facilities that release, or have the potential to release, less than 10 tons per year of total organic gases, particulates, or oxides of nitrogen or sulfur, the state board shall, on or before July 1, 1990, prepare and submit a report to the Legislature identifying the classes of those facilities to be included in this part and specifying a timetable for their inclusion.

44323. A district may prepare an industrywide emissions inventory and health risk assessment for facilities specified in subdivisions (a) and (b) of Section 44322, and shall prepare an industrywide emissions inventory for the facilities specified in subdivision (c) of Section 44322, in compliance with this part for any class of facilities that the district finds and determines meets all of the following conditions:

(a) All facilities in the class fall within one four-digit Standard Industrial Classification Code.

(b) Individual compliance with this part would impose severe economic hardships on the majority of the facilities within the class.

(c) The majority of the class is composed of small businesses.

(d) Releases from individual facilities in the class consist primarily of a single hazardous material for which the releases from each facility can easily and generically be characterized and calculated.

44324. This part does not apply to any facility where economic poisons are employed in their pesticidal use, unless that facility was subject to district permit requirements on or before August 1, 1987. As used in this section, "pesticidal use" does not include the manufacture or formulation of pesticides.

44325. Any solid waste disposal facility in compliance with Section 41805.5 is in compliance with the emissions inventory

requirements of this part.

CHAPTER 3. AIR TOXICS EMISSION INVENTORIES

44340. (a) The operator of each facility subject to this part shall prepare and submit to the district a proposed comprehensive emissions inventory plan in accordance with the criteria and guidelines adopted by the state board pursuant to Section 44342.

(b) The proposed plan shall be submitted to the district on or before August 1, 1989, except that, for any facility to which subdivision (b) of Section 44322 applies, the proposed plan shall be submitted to the district on or before August 1, 1990. The district shall approve, modify, and approve as modified, or return for revision and resubmission, the plan within 120 days of receipt.

(c) The district shall not approve a plan unless all of the following conditions are met:

(1) The plan meets the requirements established by the state board pursuant to Section 44342.

(2) The plan is designed to produce, from the list compiled and maintained pursuant to Section 44321, a comprehensive characterization of the full range of hazardous materials that are released, or that may be released, to the surrounding air from the facility. Air release data shall be collected at, or calculated for, the primary locations of actual and potential release for each hazardous material. Data shall be collected or calculated for all continuous, intermittent, and predictable air releases.

(3) The measurement technologies and estimation methods proposed provide state-of-the-art effectiveness and are sufficient to produce a true representation of the types and quantities of air releases from the facility.

(4) Source testing or other measurement techniques are employed wherever necessary to verify emission estimates, as determined by the state board and to the extent technologically feasible. All testing devices shall be appropriately located, as determined by the state board.

(5) Data are collected or calculated for the relevant exposure rate or rates of each hazardous material according to its characteristic toxicity and for the emission rate necessary to ensure a characterization of risk associated with exposure to releases of the hazardous material that meets the requirements of Section 44361. The source of all emissions shall be displayed or described.

44341. Within 180 days after approval of a plan by the district, the operator shall implement the plan and prepare and submit a report to the district in accordance with the plan. The district shall transmit all monitoring data contained in the approved report to the state board.

44342. The state board shall, on or before May 1, 1989, in consultation with the districts, develop criteria and guidelines for

site-specific air toxics emissions inventory plans which shall be designed to comply with the conditions specified in Section 44340 and which shall include at least all of the following:

(a) For each class of facility, a designation of the hazardous materials for which emissions are to be quantified and an identification of the likely source types within that class of facility. The hazardous materials for quantification shall be chosen from among, and may include all or part of, the list specified in Section 44321.

(b) Requirements for a facility diagram identifying each actual or potential discrete emission point and the general locations where fugitive emissions may occur. The facility diagram shall include any nonpermitted and nonprocess sources of emissions and shall provide the necessary data to identify emission characteristics. An existing facility diagram which meets the requirements of this section may be submitted.

(c) Requirements for source testing and measurement. The guidelines may specify appropriate uses of estimation techniques including, but not limited to, emissions factors, modeling, mass balance analysis, and projections, except that source testing shall be required wherever necessary to verify emission estimates to the extent technologically feasible. The guidelines shall specify conditions and locations where source testing, fence-line monitoring, or other measurement techniques are to be required and the frequency of that testing and measurement.

(d) Appropriate testing methods, equipment, and procedures, including quality assurance criteria.

(e) Specifications for acceptable emissions factors, including, but not limited to, those which are acceptable for substantially similar facilities or equipment, and specification of procedures for other estimation techniques and for the appropriate use of available data.

(f) Specification of the reporting period required for each hazardous material for which emissions will be inventoried.

(g) Specifications for the collection of useful data to identify toxic air contaminants pursuant to Article 2 (commencing with Section 39660) of Chapter 3.5 of Part 2.

(h) Standardized format for preparation of reports and presentation of data.

(i) A program to coordinate and eliminate any possible overlap between the requirements of this chapter and the requirements of Section 313 of the Superfund Amendment and Reauthorization Act of 1986 (Public Law 99-499).

The state board shall design the guidelines and criteria to ensure that, in collecting data to be used for emissions inventories, actual measurement is utilized whenever necessary to verify the accuracy of emission estimates, to the extent technologically feasible.

44343. The district shall review the reports submitted pursuant to Section 44341 and shall, within 90 days, review each report, obtain

corrections and clarifications of the data, and notify the State Department of Health Services, the Department of Industrial Relations, and the city or county health department of its findings and determinations as a result of its review of the report.

44344. Emissions inventories developed pursuant to this chapter shall be updated biennially, in accordance with procedures established by the state board. These biennial updates shall take into consideration improvements in measurement techniques and advancing knowledge concerning the types and toxicity of hazardous materials released or potentially released.

44345. (a) On or before July 1, 1989, the state board shall develop a program to compile and make available to other state and local public agencies and the public all data collected pursuant to this chapter.

(b) In addition, the state board, on or before March 1, 1990, shall compile, by district, emissions inventory data for mobile sources and area sources not subject to district permit requirements, and data on natural source emissions, and shall incorporate these data into data compiled and released pursuant to this chapter.

44346. (a) If an operator believes that any information required in the facility diagram specified pursuant to subdivision (b) of Section 44342 involves the release of a trade secret, the operator shall nevertheless make the disclosure to the district, and shall notify the district in writing of that belief in the report.

(b) Subject to this section, the district shall protect from disclosure any trade secret designated as such by the operator, if that trade secret is not a public record.

(c) Upon receipt of a request for the release of information to the public which includes information which the operator has notified the district is a trade secret and which is not a public record, the following procedure applies:

(1) The district shall notify the operator of the request in writing by certified mail, return receipt requested.

(2) The district shall release the information to the public, but not earlier than 30 days after the date of mailing the notice of the request for information, unless, prior to the expiration of the 30-day period, the operator obtains an action in an appropriate court for a declaratory judgment that the information is subject to protection under this section or for a preliminary injunction prohibiting disclosure of the information to the public and promptly notifies the district of that action.

(d) This section does not permit an operator to refuse to disclose the information required pursuant to this part to the district.

(e) Any information determined by a court to be a trade secret, and not a public record pursuant to this section, shall not be disclosed to anyone except an officer or employee of the district, the state, or the United States, in connection with the official duties of that officer or employee under any law for the protection of health, or to

contractors with the district or the state and its employees if, in the opinion of the district or the state, disclosure is necessary and required for the satisfactory performance of a contract, for performance of work, or to protect the health and safety of the employees of the contractor.

(f) Any officer or employee of the district or former officer or employee who, by virtue of that employment or official position, has possession of, or has access to, any trade secret subject to this section, and who, knowing that disclosure of the information to the general public is prohibited by this section, knowingly and willfully discloses the information in any manner to any person not entitled to receive it is guilty of a misdemeanor. Any contractor of the district and any employee of the contractor, who has been furnished information as authorized by this section, shall be considered an employee of the district for purposes of this section.

(g) Information certified by appropriate officials of the United States as necessary to be kept secret for national defense purposes shall be accorded the full protections against disclosure as specified by those officials or in accordance with the laws of the United States

(h) As used in this section, "trade secret" and "public record" have the meanings and protections given to them by Section 6254.7 of the Government Code and Section 1060 of the Evidence Code. All information collected pursuant to this chapter, except for data used to calculate emissions data required in the facility diagram, shall be considered "air pollution emission data," for the purposes of this section.

CHAPTER 4. RISK ASSESSMENT

44360. (a) Within 90 days of completion of the review of all emissions inventory data for facilities specified in subdivision (a) of Section 44322, but not later than December 1, 1990, the district shall, based on examination of the emissions inventory data and in consultation with the state board and the State Department of Health Services, prioritize and then categorize those facilities for the purposes of health risk assessment. The district shall designate high, intermediate, and low priority categories and shall include each facility within the appropriate category based on its individual priority. In establishing priorities pursuant to this section, the district shall consider the potency, toxicity, quantity, and volume 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 the district finds and determines may indicate that the facility may pose a significant risk to receptors. The district shall hold a public hearing prior to the final establishment of priorities and categories pursuant to this section.

(b) Within 150 days of the designation of priorities and categories

pursuant to subdivision (a), the operator of every facility that has been included within the highest priority category shall prepare and submit to the district a health risk assessment pursuant to Section 44361. The district may, at its discretion, grant a 30-day extension for submittal of the health risk assessment.

(c) Upon submission of emissions inventory data for facilities specified in subdivisions (b) and (c) of Section 44322, the district shall designate facilities for inclusion within the highest priority category, as appropriate, and any facility so designated shall be subject to subdivision (b). In addition, the district may require the operator of any facility to prepare and submit health risk assessments, in accordance with the priorities developed pursuant to subdivision (a).

(d) The district shall, except where site specific factors may affect the results, allow the use of a single health risk assessment for two or more substantially identical facilities operated by the same person.

44361. (a) Each health risk assessment shall be submitted to the district. The district shall make the health risk assessment available for public review, upon request. After preliminary review of the emissions impact and modeling data, the district shall submit the health risk assessment to the State Department of Health Services for review and, within 180 days of receiving the health risk assessment, the State Department of Health Services shall submit to the district its comments on the data and findings relating to health effects. The district shall consult with the state board as necessary to adequately evaluate the emissions impact and modeling data contained within the risk assessment.

(b) For the purposes of complying with this section, the State Department of Health Services may select a qualified independent contractor to review the data and findings relating to health effects. The State Department of Health Services shall not select an independent contractor to review a specific health risk assessment who may have a conflict of interest with regard to the review of that health risk assessment. Any review by an independent contractor shall comply with the following requirements:

(1) Be performed in a manner consistent with guidelines provided by the State Department of Health Services.

(2) Be reviewed by the State Department of Health Services for accuracy and completeness.

(3) Be submitted by the State Department of Health Services to the district in accordance with this section.

(c) The district shall reimburse the State Department of Health Services or the qualified independent contractor designated by the State Department of Health Services pursuant to subdivision (b), within 45 days of its request, for its actual costs incurred in reviewing a health risk assessment pursuant to this section.

(d) If a district requests the State Department of Health Services to consult with the district concerning any requirement of this part,

the district shall reimburse the State Department of Health Services, within 45 days of its request, for the costs incurred in the consultation.

(e) Upon designation of the high priority facilities, as specified in subdivision (a) of Section 44360, the State Department of Health Services shall evaluate the staffing requirements of this section and may submit recommendations to the Legislature, as appropriate, concerning the maximum number of health risk assessments to be reviewed each year pursuant to this section.

44362. (a) Taking the comments of the State Department of Health Services into account, the district shall approve or return for revision and resubmission and then approve, the health risk assessment within 180 days of receipt. If the health risk assessment has not been revised and resubmitted within 60 days of the district's request of the operator to do so, the district may modify the health risk assessment and approve it as modified.

(b) Upon approval of the health risk assessment, the operator of the facility shall provide notice to all exposed persons regarding the results of the health risk assessment prepared pursuant to Section 44361 if, in the judgment of the district, the health risk assessment indicates there is a significant health risk associated with emissions from the facility. If notice is required under this subdivision, the notice shall include only information concerning significant health risks attributable to the specific facility for which the notice is required. Any notice shall be made in accordance with procedures specified by the district.

44363. (a) Commencing July 1, 1991, each district shall prepare and publish an annual report which does all of the following:

(1) Describes the priorities and categories designated pursuant to Section 44360 and summarizes the results and progress of the health risk assessment program undertaken pursuant to this part.

(2) Ranks and identifies facilities according to the degree of cancer risk posed both to individuals and to the exposed population.

(3) Identifies facilities which expose individuals or populations to any noncancer health risks.

(4) Describes the status of the development of control measures to reduce emissions of toxic air contaminants, if any.

(b) The district shall disseminate the annual report to county boards of supervisors, city councils, and local health officers and the district board shall hold one or more public hearings to present the report and discuss its content and significance.

44364. The state board shall utilize the reports and assessments developed pursuant to this part for the purposes of identifying, establishing priorities for, and controlling toxic air contaminants pursuant to Chapter 3.5 (commencing with Section 39650) of Part 2.

44365. (a) If the state board finds and determines that a district's actions pursuant to this part do not meet the requirements of this part, the state board may exercise the authority of the district

pursuant to this part to approve emissions inventory plans and require the preparation of health risk assessments.

(b) This part does not prevent any district from establishing more stringent criteria and requirements than are specified in this part for approval of emissions inventories and requiring the preparation and submission of health risk assessments. Nothing in this part limits the authority of a district under any other provision of law to assess and regulate releases of hazardous substances.

44366. (a) In order to verify the accuracy of any information submitted by facilities pursuant to this part, a district or the state board may proceed in accordance with Section 41510.

CHAPTER 5. FEES AND REGULATIONS

44380. (a) On or before August 1, 1988, the state board shall adopt a fee schedule, as specified in Section 44383, which assesses a fee upon the operator of every facility subject to this part. The fees shall be based on the reasonable anticipated cost which will be incurred by the state board, the districts, and the department to implement and administer this part, taking into account variations in costs incurred by individual district, and shall, in addition, provide for the recovery in the 1987–88 fiscal year of all starting costs incurred under this part.

(b) Commencing February 1, 1988, the state board shall establish, with the participation of the districts on a voluntary basis, a technical review group for the purpose of developing the fee schedule specified in subdivision (a). The fee schedule shall not be adopted or implemented prior to the establishment of the technical review group.

(c) The district shall notify each person subject to the fee specified in subdivision (a). If a person fails to pay the fee within 60 days after receipt of this notice, the district shall require the person to pay an additional administrative civil penalty. The district shall fix the penalty at not more than 100 percent of the assessed fee, but in an amount sufficient in its determination, to pay the district's additional expenses incurred by the person's noncompliance.

(d) Each district shall collect the fees pursuant to the schedule adopted under subdivision (a). After deducting the costs to the district to implement and administer this part, the district shall transmit the remainder to the Controller for deposit in the Air Toxics Inventory and Assessment Account, which is hereby created in the General Fund. The money in the account is available, upon appropriation by the Legislature, to the state board and the department for the purposes of administering this part.

44381. (a) Any person who fails to submit any information, reports, or statements required by this part, or who fails to comply with this part or with any permit, rule, regulation, or requirement issued or adopted pursuant to this part, is subject to a civil penalty

of not less than five hundred dollars ($500) or more than ten thousand dollars ($10,000) for each day that the information, report, or statement is not submitted, or that the violation continues.

(b) Any person who knowingly submits any false statement or representation in any application, report, statement, or other document filed, maintained, or used for the purposes of compliance with this part is subject to a civil penalty of not less than one thousand dollars ($1,000) or more than twenty-five thousand dollars ($25,000) per day for each day that the information remains uncorrected.

44382. Every district shall, by regulation, adopt the requirements of this part as a condition of every permit issued pursuant to Chapter 4 (commencing with Section 42300) of Part 4 for all new and modified facilities.

44383. The state board shall adopt rules or regulations to implement Section 44380 as emergency regulations in accordance with Section 11346.1 of the Government Code.

44384. Except for Section 44380 and this section, all provisions of this part shall become operative on July 1, 1988.

SEC. 2. No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution because the local agency or school district has the authority to levy service charges, fees, or assessments sufficient to pay for the program or level of service mandated by this act.

However, notwithstanding Section 17610 of the Government Code, if the Commission on State Mandates determines that this act contains other costs mandated by the state, reimbursement to local agencies and school districts for those costs shall be made pursuant to Part 7 (commencing with Section 17500) of Division 4 of Title 2 of the Government Code. If the statewide cost of the claim for reimbursement does not exceed five hundred thousand dollars ($500,000), reimbursement shall be made from the State Mandates Claims Fund.

O

July 15, 1990

APPENDIX B

List of Substances for Emission Quantification

Appendix B

List of Substances for Emission Quantification

Chemical Abstract Service (CAS) Number	Substance Name
75070	Acetaldehyde
60355	Acetamide
107028	Acrolein
79061	Acrylamide
107131	Acrylonitrile
107051	Allyl chloride
117793	2-Aminoanthraquinone
61825	Amitrole
7664417	Ammonia
7440382	Arsenic
*	Arsenic compounds (inorganic)
7784421	Arsine
1332214	Asbestos
71432	Benzene
92875	Benzidine (and its salts)
-	Benzidine-based dyes
56553	Benz[a]anthracene
205992	Benzo[b]fluoranthene
207089	Benzo[k]fluoranthene
50328	Benzo[a]pyrene
100447	Benzyl chloride
7440417	Beryllium
542881	Bis(chloromethyl)ether
7726956	Bromine
*	Bromine compounds (inorganic)
106990	1,3-Butadiene
7440439	Cadmium
*	Cadmium compounds
-	Carbon black extracts
56235	Carbon tetrachloride
-	Carrageenan (degraded)
76131	Chlorinated fluorocarbon (CFC-113)
7782505	Chlorine
56757	Chloramphenicol
108907	Chlorobenzene
13909096	1-(2-chloroethyl)-3-(4-methylcyclohexyl)-1-nitrosourea (Methyl CCNU)

NOTE: This list consists of the substances on the list Substances for Which Emissions Must Be Quantified (Appendix A-1) of the AB 2588 Inventory Guidelines and Criteria Regulations (CCR, Title 17, 93300-93347).

* Denotes a chemical category

List of Substances For Emissions Quantification (cont.)

CAS Number	Substance Name
67663	Chloroform
*	Chlorophenols
76062	Chloropicrin
126998	Chloroprene
95830	4-chloro-o-phenylenediamine
95692	p-chloro-o-toluidine
18540299	Chromium (hexavalent)
8007452	Coke oven emissions
7440508	Copper
-	Creosotes
120718	p-Cresidine
1319773	Cresols
135206	Cupferron
66819	Cycloheximide
*	Dialkylnitrosamines
615054	2,4-Diaminoanisole
95807	2,4-Diaminotoluene
53703	Dibenz[a,h]anthracene
*	Dibenzofurans (chlorinated)
96128	1,2-Dibromo-3-chloropropane (DBCP)
106467	p-Dichlorobenzene (1,4-Dichlorobenzene)
91941	3,3'-Dichlorobenzidine
117817	Di(2-ethylhexyl) phthalate (DEHP)
124403	Dimethylamine
60117	p-Dimethylaminoazobenzene
57147	1,1-Dimethylhydrazine
77781	Dimethyl sulfate
123911	1,4-Dioxane
-	Dioxins (chlorinated dibenzodioxins)
	Environmental tobacco smoke
106898	Epichlorohydrin
140885	Ethyl acrylate
75003	Ethyl chloride
106934	Ethylene dibromide (1,2-Dibromoethane)
107062	Ethylene dichloride (1,2-Dichloroethane)
75218	Ethylene oxide
96457	Ethylene thiourea
*	Fluorocarbons (chlorinated & brominated)
50000	Formaldehyde
-	Gasoline vapors
111308	Glutaraldehyde
*	Glycol ethers

NOTE: This list consists of the substances on the list Substances for Which Emissions Must Be Quantified (Appendix A-1) of the AB 2588 Inventory Guidelines and Criteria Regulations (CCR, Title 17, 93300-93347).

* Denotes a chemical category

List of Substances for Emission Quantification (cont.)

CAS Number	Substance Name
126078	Griseofulvin
118741	Hexachlorobenzene
*	Hexachlorocyclohexanes
77474	Hexachlorocyclopentadiene
302012	Hydrazine
7647010	Hydrochloric acid
74908	Hydrocyanic acid
7664393	Hydrogen fluoride
7783064	Hydrogen sulfide
193395	Indeno[1,2,2,-cd]pyrene
*	Isocyanates
7439921	Lead
*	Lead compounds (inorganic)
108316	Maleic anhydride
7439965	Manganese
7487947	Mercuric chloride
7439976	Mercury
67561	Methanol
74839	Methyl bromide (Bromomethane)
71556	Methyl chloroform (1,1,1-Trichloroethane)
624839	Methyl isocyanate
80626	Methyl methacrylate
101144	4,4'-Methylene bis(2-chloroaniline) (MOCA)
75092	Methylene chloride Dichloromethane)
101779	4,4'-Methylene dianiline (and its dichloride)
593748	Methyl mercury (Dimethylmercury)
443481	Metronidazole
90948	Michler's ketone
-	Mineral fibers
91203	Naphthalene
7440020	Nickel
13463393	Nickel carbonyl
12035722	Nickel subsulfide
61574	Niridazole
98953	Nitrobenzene
302705	Nitrogen mustard N-oxide
79469	2-Nitropropane
55185	N-Nitrosodiethylamine
62759	N-Nitrosodimethylamine

NOTE: This list consists of the substances on the list Substances for Which Emissions Must Be Quantified (Appendix A-1) of the AB 2588 Inventory Guidelines and Criteria Regulations (CCR, Title 17, 93300-93347).

* Denotes a chemical category

List of Substances for Emission Quantification (cont.)

CAS Number	Substance Name
156105	p-Nitrosodiphenylamine
924163	N-Nitrosodi-n-butylamine
621647	N-Nitrosodi-n-propylamine
10595956	N-Nitrosomethylethylamine
59892	N-Nitrosomorpholine
100754	N-Nitrosopiperidine
930552	N-Nitrosopyrrolidine
434071	Oxymetholone
*	PAHs (Polycyclic aromatic hydrocarbons)
1336363	PCBs (Polychlorinated biphenyls)
127184	Perchloroethylene (Tetrachloroethene)
50066	Phenobarbitol
108952	Phenol
75445	Phosgene
7803512	Phosphine
7723140	Phosphorus
85449	Phthalic anhydride
7758012	Potassium bromate
57830	Progesterone
1120714	1,3-Propane sultone
115071	Propylene
75569	Propylene oxide
-	Radionuclides
7782492	Selenium
*	Selenium compounds
-	Silica, crystalline
1310732	Sodium hydroxide
100425	Styrene
1746016	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)
62555	Thioacetamide
62556	Thiourea
108883	Toluene
584849	Toluene-2,4-diisocyanate
91087	Toluene-2,6-diisocyanate
79016	Trichloroethylene
88062	2,4,6-Trichlorophenol
51796	Urethane
75014	Vinyl chloride
75354	Vinylidene chloride
*	Xylenes
7440666	Zinc
1314132	Zinc oxide

NOTE: This list consists of the substances on the list Substances for Which Emissions Must Be Quantified (Appendix A-1) of the AB 2588 Inventory Guidelines and Criteria Regulations (CCR, Title 17, 93300-93347).

* Denotes a chemical category

APPENDIX C

Receptor Proximity Adjustment Factors
(The Emissions and Potency Procedure)

APPENDIX C

Receptor Proximity Adjustment Factors[a,b]
(The Emissions and Potency Procedure)

Receptor Proximity (R)

0m < R < 100m	100m ≤ R < 250m	250m ≤ R < 500m	500m ≤ R < 1000m	1000m ≤ R < 1500m	1500m ≤ R < 2000m	R ≥ 2000m
1[c]	0.25	0.04	0.011	0.003	0.002	0.001

a - The receptor proximity adjustment factors provided are based on a release height of 5 meters.

b - Receptor proximity is expressed in meters (m) and can be determined by adding: 1) the distance from the facility property line to the nearest potential receptor; to 2) the distance from the facility's nearest emitting source to the facility property line.

c - If a potential receptor is located within approximately 50m of the release point, this receptor proximity adjustment factor may not be conservative.

APPENDIX D

Basis for the Suggested Thresholds

APPENDIX D

Basis for the Suggested Thresholds in the Prioritization Guidelines

The following is an explanation of the basis for the suggested thresholds provided in the draft prioritization guidelines. The explanation pertains to both the emissions and potency and the dispersion adjustment prioritization procedures. In addition to discussing the basis for the suggested thresholds, an explanation of how the receptor proximity adjustment and dispersion adjustment factors were determined is also provided. As stated in the guidelines, the thresholds presented here are suggestions. Thus, the district may select thresholds that differ from those discussed.

The prioritization guidelines describe in detail how to assign scores to facilities using two different prioritization procedures. The guidelines also provide suggestions on how to prioritize facilities based on the scores that they receive. Because facilities vary in terms of several factors including release parameters, <u>it is not possible to determine health risk from a facility's score using either of the procedures discussed in the guidelines</u>. Only upon completion of a comprehensive risk assessment will the risks posed by facilities be adequately characterized. However, it is possible to use a conservative modeling scenario to identify minimum scores associated with given levels of risk. The reality of such an approach is that facilities which do not significantly impact receptors may be designated as high priority. The method used to arrive at the suggested thresholds as well as its basis is provided in the following discussion.

<u>What is the Basis for the Suggested Thresholds?</u>

The suggested thresholds are based on conservative modeling scenarios which use the ISCST and PTPLU dispersion models in conjunction with the following assumptions to first estimate a worst case one-hour concentration: 1) emission rate of 1 lb/hr; 2) stack heights ranging from 1 to 100 meters (m); 3) stack and ambient temperature equal to 293 kelvin; 4) low flow rate (0.03 m^3/sec); 5) conservative meteorology; 6) flat terrain; 7) urban dispersion algorithm; and 8) minimum receptor proximity of 50 m.

Fourty-nine combinations of wind speed and stability from the PTPLU2 model were used as meteorological input to identify the peak one-hour concentration at the maximum impacted receptor for each of several release heights. The overall peak one-hour concentration of 1,459 ug/m^3 occurred approximately 50 m downwind of a release height of 1 m for D stability and a wind speed of 0.5 m/sec.

To develop the thresholds for carcinogens, the peak one-hour concentration of 1,458 ug/m^3 was multiplied by the ARB scaling factor of 0.1 to estimate the peak annual average concentration (this concentration may not actually be located 50 meters downwind, but this approach is expected to be conservative). The result of this exercise is the identification of an annual emission rate (approximately 60 lbs/yr) that corresponds to an annual average concentration of 1 ug/m^3. The suggested thresholds for carcinogens presented in the guidelines rely on this relationship between emission rate and concentration. Under most circumstances we do not expect to see an annual average concentration greater than 1 ug/m^3 resulting from a uniform emission rate of 60 lbs/yr at a distance equal to or greater than 50 m from the release point. For non-carcinogens with chronic health effects, the modeling basis for the determiniation of thresholds is the same as that used for carcinogens. For non-carcinogens with acute health effects, the thresholds are based on the relationship between emission rate and the peak one-hour concentration of 1,458 ug/m^3.

From the relationship between emission rate and concentration, a minimum score (threshold) can be determined for a specified level of risk. That is to say that facilities with lower scores than the threshold are expected to result in lower risks than that from which the threshold was derived. However, because the threshold was determined using a conservative modeling scenario, facilities with higher scores than the threshold do not necessarily result in higher risks. The advantage of this procedure is that a threshold can be established to ensure that facilities that may present significant concerns will be designated as high priority.

As indicated, the method for identifying a threshold for a specified level of risk relies on a conservative relationship between emission rate and concentration. For example, the score that corresponds to a level of carcinogenic risk of one in one million (for the conservative modeling scenario) is obtained by multiplying 60 lbs/yr by the unit risk number that equates to a risk of one in one million for an exposure to 1 ug/m^3 (1×10^{-6} (ug/m^3)$^{-1}$). For noncarcinogens, essentially the same approach can be used based on the relationship between emissions rate and the peak annual average concentration for chronic health effects and peak one-hour concentration for acute health effects to identify the minimum score that corresponds to a given level of risk. To put the suggested thresholds on a scale that is more convenient, the scores are multiplied by a normalization factor.

Why Suggest a High Priority Threshold of 10 to 100?

A score on the order of 10 to 100 as the suggested high priority threshold provides guidance for designating facilities, which may significantly impact receptors, as high priority. However, given the conservative modeling scenario upon which this threshold is based, it should be understood that facilities which do not significantly impact receptors may also be designated as high priority.

For the conservative modeling scenario, a score of 10 approximately translates to a risk of 1×10^{-4} for carcinogens and ten times the acceptable exposure level for non-carcinogens while a score of 100 approximately translates to a risk of 1×10^{-3} for carcinogens and one hundred times the acceptable exposure level for non-carcinogens. However, facilities with considerably lower risks (over two orders of magnitude) may also receive scores of 100 or more and as a result may be designated high priority. Nevertheless, to ensure that the facilities of greatest concern are designated high priority requires that conservative assumptions such as those presented here be used. It is also possible that facilities of concern may receive scores that are less than 10. To address this case, the guidelines include provisions for considering other factors to prioritize facilities not initially designated as high or low priority.

Why Suggest a Low Priority Threshold of 1?

As with the high priority threshold, the low priority threshold is based on a the same conservative modeling scenario. For the low priority threshold, a score of 1 corresponds to a risk of 1×10^{-5} for carcinogens and the acceptable exposure level for non-carcinogens. With this approach, it is possible that facilities with scores considerably higher than 1 (up to two orders of magnitude higher) may actually result in risks that are below the low priority threshold. Because the threshold is based on a conservative modeling scenario, we do not expect facilities with scores less than 1 to result in risks that are above 1×10^{-5} for carcinogens and the acceptable exposure level for non-carcinogens.

How Are Facilities with Scores Between High and Low Priority Treated?

Some facilities with scores between 1 and 10 or 1 and 100 may also significantly impact receptors. Therefore, the guidelines provide for consideration of other factors to determine if such facilities should be designated as high priority.

Receptor Proximity Adjustment Factors

The procedures also include receptor proximity adjustment factors. The factors act to reduce the facility's score if there are not

potential receptors nearby. Because the emissions and potency procedure does not consider release parameters, the receptor proximity adjustment factors are based on the change in concentration with distance for a release height of 5 meters.

The receptor proximity adjustment factors provided in the dispersion adjustment procedure are based on the release height of the emissions. Specifically, the factors were derived by ratioing the maximum concentrations at different distances for a given release height. However, because the effective stack height for an emission source may be considerably greater than the actual release height, the receptor proximity adjustment factors provided in Appendix E may not be conservative for all cases.

Dispersion Adjustment Factors

The dispersion adjustment procedure also considers dispersion based on the release height of the emissions. The factors were determined using information on the concentration at the maximum impacted receptor for a series of release heights. Specifically, the dispersion adjustment factors were determined from the ratio of the concentration at the maximum impacted receptor (at a 50 m minimum) for several release heights divided by the concentration at the maximum impacted receptor for the 5 m release height.

APPENDIX E

Dispersion Adjustment Factors

APPENDIX E

Dispersion Adjustment Factors for the Dispersion Adjustment Procedure[a]

Release Point[b] Description	Dispersion Adjustment Factor
0m ≤ Release Height < 20 m	60
20 m ≤ Release Height < 45 m	9
Release Height ≥ 45 m	1

a - The dispersion adjustment factors were derived by dividing the concentration at the maximum impacted receptor (at a 50 meter minimum) for varying stack heights by the concentration at the maximum impacted receptor for a release height of 5 meters.
b - Release height is expressed in meters (m).

July 15, 1990

APPENDIX F

Receptor Proximity Adjustment Factors
(The Dispersion Adjustment Procedure)

APPENDIX F

Receptor Proximity Adjustment Factors[a,b] (The Dispersion Adjustment Procedure)

Receptor Proximity (R)

Release Height (RH)	0m[c] < R < 100m	100m ≤ R < 250m	250m ≤ R < 500m	500m ≤ R < 1000m	1000m ≤ R < 1500m	1500m ≤ R < 2000m	R ≥ 2000m
0m ≤ RH < 20m	1	0.25	0.04	0.011	0.003	0.002	0.001
20m ≤ RH < 45m	1	0.85	0.22	0.064	0.018	0.009	0.006
RH[d] ≥ 45m	1	1	0.90	0.40	0.13	0.066	0.042

a - Because the receptor proximity adjustment factors are based on actual release height (not taking into account effective plume rise), they are not necessarily conservative for all emission scenarios.
b - Release height and receptor proximity are expressed in meters (m). The receptor proximity can be determined by adding: 1) the distance from the facility property line to the nearest potential receptor; to 2) the distance from the facility's nearest emitting source to the facility property line.
c - If a potential receptor is located within approximately 50m of the release point, these receptor proximity adjustment factors may not be conservative.
d - The receptor proximity adjustment factors provided in this row are based on a release height of 45 meters.