

### State of California

California Environmental Protection Agency

### REGIONAL WATER QUALITY CONTROL BOARD CENTRAL VALLEY REGION

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### DISCLAIMER

This publication is a technical report by staff of the California Regional Water Quality Control Board, Central Valley Region. No policy or regulation is either expressed or intended.

# CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY REGIONAL WATER QUALITY CONTROL BOARD CENTRAL VALLEY REGION

# A Compilation of WATER QUALITY GOALS

August 2000

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# PREFACE TO THE AUGUST 2000 EDITION

This edition of the Regional Water Board staff report, *A Compilation of Water Quality Goals*, supersedes all earlier editions and updates. These and earlier editions and updates should be discarded, as they contain outdated information. The new edition contains information that is current as of late August 2000.

Many significant changes have been incorporated into this edition of *Water Quality Goals*. Numerical water quality limits are newly added from the following sources:

- The California Toxics Rule -- Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California -promulgated by the U. S. Environmental Protection Agency (USEPA) on 18 May 2000; and
- Hazard Assessments and Water Quality Criteria for pesticides, from the California Department of Fish and Game.

Updated numerical water quality limits are included from the following sources:

- California Public Health Goals for drinking water from the California Environmental Protection Agency (Cal/EPA), Office of Environmental Health Hazard Assessment (OEHHA);
- California Maximum Contaminant Levels and Action Levels for drinking water from the California Department of Health Services;
- Drinking Water Regulations and Health Advisories from USEPA;
- Reference doses and cancer potency factors from the Integrated Risk Information System (IRIS) database, maintained by USEPA;
- National Recommended Ambient Water Quality Criteria for protection of human health and aquatic life, published by USEPA; and
- Cancer risk estimates from the Cal/EPA Toxicity
   Criteria Database, maintained by OEHHA.

In addition, Chemical Abstracts Service (CAS) Registry Numbers have been added to help clarify the identity of most listed chemicals.

The narrative *Selecting Water Quality Goals* has been updated to better assist the user in proper selec-

tion of numerical limits from the tables to ascertain compliance with California's water quality standards. To use this report correctly, it is necessary to read the enclosed narrative *Selecting Water Quality Goals* carefully before selecting numerical water quality limits from the tables. That narrative includes an example of water quality goal selection.

A Compilation of Water Quality Goals is a technical report by staff of the California Regional Water Quality Control Board, Central Valley Region. It is intended to assist in the appropriate interpretation of narrative water quality objectives. This report does not, nor is it intended to, establish policy or regulation.

The August 2000 edition of *A Compilation of Water Quality Goals* is available on the Central Valley Regional Water Board's internet web site at:

www.swrcb.ca.gov/rwqcb5 Additional hard copies of *Water Quality Goals* are available in person or by mail from the Reception Desk at the Sacramento Office of the California Regional Water Quality Control Board, Central Valley Region, 3443 Routier Road, Suite A, Sacramento, CA 95827-3003. Public agencies may receive copies free of charge, with the allowable number of copies per agency based on current supply and budgetary constraints. Private entities may receive the report for \$38.00 per copy. This charge covers the cost of reproduction, shipping and handling. Payment, if applicable, must accompany all requests. Checks are to be made payable to the Central Valley Regional Water Quality Control Board.

This staff report is not copyrighted. Persons are free to make copies of all or portions of this report. However, the author cautions that copies of the tables of numerical water quality limits without the accompanying narrative *Selecting Water Quality Goals* could result in misuse of the information.

If you have questions regarding this edition of the *Water Quality Goals* staff report, please contact me by telephone at (916) 255-3123 or CalNet 8-494-3123 or by E-mail at marshaj@rb5s.swrcb.ca.gov.

—Jon B. Marshack

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# USING THIS REPORT

To avoid incorrect use of the

numerical water quality limits

contained in this report, the author

strongly recommends that the section

**Selecting Water Quality Goals** 

be carefully reviewed.

The remainder of this report is divided into six sections:

- Selecting Water Quality Goals
- Cross Reference of Chemical Names
- Water Quality Goals for Inorganic Constituents
- Water Quality Goals for Organic Constituents
- Footnotes
- References

Selecting Water Quality Goals — This section describes the process by which numerical limits for water quality parameters and constituents may be selected to protect beneficial uses of groundwater and surface

waters. A glossary of commonly used terms is included at the end of this section.

Cross Reference of Chemical Names — This section provides an alphabetical listing of synonyms for the chemical constituents and parameters covered by this report. Many chemical constituents and pa-

rameters are commonly referred to by more than one name. Look here first to find your chemical constituent or parameter of interest. This section indicates whether the constituent or parameter is listed under Organic Constituents or Inorganic Constituents. It also shows under which name the constituent or parameter is listed in the tables of Water Quality Goals. Chemical Abstracts Service (CAS) Registry Numbers are also provided to help clarify the identity of most constituents.

*Water Quality Goals* — These two sections contain tables of numerical water quality limits divided into: *Organic Constituents* (those chemicals whose chemistry is dominated by the chemistry of the carbon

atom) and *Inorganic Constituents* (all other chemicals and parameters). Within these sections, numerical water quality limits for a single constituent or parameter are presented on groups of five consecutive pages. This makes comparison of limits easier for a single chemical. It takes this many pages to present the wide range of water quality numerical limits covered by this report. Therefore, for any constituent or parameter of interest, be sure to review all five pages containing listings for that constituent or parameter before selecting numerical limits. The sixth page of each group lists CAS Numbers, common synonyms

and abbreviations for the chemicals.

The numerical value of some water quality limits varies with the hardness, temperature, pH, or other characteristics of the waters to which they are applied. The variable limits for the protection of aquatic life from ammonia, heavy metals, and penta-

chlorophenol are presented in special tables and graphs at the end of the two *Water Quality Goals* sections. Where a numerical limit varies in this manner, the number of the page which presents the variable limit is cited in the tables.

**Footnotes** — Many listings in the tables contain footnotes within parentheses. These footnotes, listed near the end of this report, explain limitations on how the numerical water quality limits apply and provide other useful information.

*References* — Literature sources, from which the numerical water quality limits were obtained, are provided at the end of this report.

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# SELECTING WATER QUALITY GOALS

California is significantly limited in the quantity and quality of its water resources. Recurring periods of drought have clearly demonstrated the magnitude and severity of these limits. At the same time, improper waste management practices and contaminated sites pose significant threats to the quality of California's usable groundwater and surface water resources. The state population is expected to increase by fifty percent over the next quarter century, while the population of the Central Valley is expected to double over the next twenty years. At the same time, there is a growing realization that additional water is also needed for instream fisheries management. Therefore, it is imperative that California restore and maintain the quality of its water resources so as to be available to serve the growing needs of agriculture, cities, and industries without impairing in-stream beneficial uses.

The purpose of this staff report of the California Regional Water Quality Control Board, Central Valley Region is to introduce California's water quality standards and to outline a system for selecting numerical water quality limits, consistent with these standards. The resulting numerical limits may be used to assess impacts from waste management activities and constituent releases on the quality of waters of the state and the beneficial uses of these waters.

To determine whether a particular waste management activity or constituent release has caused or threatens to cause adverse water quality impacts, it is necessary to apply California's water quality standards. These standards are found in the *Water Quality Control Plans.* At concentrations equal to or greater than these standards, constituents are considered to have unreasonably impaired the beneficial uses of the state's waters; that is, pollution has occurred. In many cases, water quality standards include narrative, as opposed to numerical, water quality objectives. In such cases, numerical water quality limits from the literature may be used to ascertain compliance with these standards.

### CALIFORNIA'S WATER QUALITY CONTROL SYSTEM

Because of its water limitations, California possesses a unique system for the protection and control of the quality of its most valuable resource. Our present system of water quality control was established in 1969, with the adoption, by the state legislature, of the Porter-Cologne Water Quality Control Act. Found in Division 7 of the California Water Code, the Porter-Cologne Act (http://www.swrcb.ca.gov/water\_laws) provides for ten water quality control agencies, the State Water Resources Control Board and nine Regional Water Quality Control Boards. The Act instructs the boards to preserve and enhance the quality of California's water resources for the benefit of present and future generations.

The State Water Board carries out its water quality protection authority through the adoption of specific *Water Quality Control Plans*. These plans establish water quality standards for particular bodies of water. <u>California water quality standards are composed of</u> three parts: the designation of beneficial uses of water, water quality objectives to protect those uses, and implementation programs designed to achieve and maintain compliance with the water quality objectives. *Water Quality Control Plans* adopted by the State Water Resources Control Board include:

- The Ocean Plan
- The Thermal Plan (temperature control in coastal and interstate waters and enclosed bays and estuaries)
- The Delta Plan (Sacramento-San Joaquin Delta and Suisun Marsh)

• The Lake Tahoe Basin Water Quality Plan The State Water Board recently adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California.* This policy provides implementation measures for numerical criteria contained in the *California Toxics Rule,* promulgated in May 2000 by the U.S. Environmental Protection Agency (USEPA). When combined with the beneficial use designations in the *Water Quality Control Plans* adopted by the Regional Water Boards (*Basin Plans*; see below), these documents establish state-wide water quality standards for toxic constituents in surface waters that are not covered by the *Ocean Plan.* This combined Water Board/USEPA action is the first phase in the development of new

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Water Quality Control Plans for California's inland surface waters and enclosed bays and estuaries.

The State Water Board also adopts regulations and other policies for water quality control, which have the enforceability of regulation, to protect water quality from discharges of waste to water or to land where water quality could be adversely affected.

To account for the great diversity in California's waterscape, the Porter-Cologne Act separates the state, along major drainage divides, into nine Water Quality Control Regions (see the map on the inside back cover of this report). Nine Regional Water Quality Control Boards act to protect water quality within these regions through the adoption of region-specific *Water Quality Control Plans*, also called *Basin Plans*. The *Basin Plans* contain water quality standards that are specific to surface waters and groundwaters within a particular region or a portion thereof. As with the State Water Board's *Water Quality Control Plans*, the *Basin Plans* contain beneficial use designations, water quality objectives, and implementation programs.

Through the issuance of waste discharge requirements (permits), water quality monitoring and reporting programs, and other enforceable orders, the State and Regional Water Boards implement the statewide and regional *Water Quality Control Plans*, policies for water quality control, and water quality regulations. The State and Regional Water Boards also administer most of the federal clean water laws in California.

The focus of State and Regional Water Boards' water quality control programs are to prevent and correct conditions of pollution of water and nuisance. The Porter-Cologne Act defines "pollution" as "an alteration of the quality of the waters of the state by waste to a degree which unreasonably affects:

1) such waters for beneficial uses, or

2) facilities which serve such beneficial uses."

"Nuisance" is defined as "anything which:

- is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property so as to interfere with the comfortable enjoyment of life or property, and
- affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal, and

 occurs during or as the result of the treatment or disposal of wastes."

### WATER QUALITY STANDARDS

The term "water quality standards" is defined in regulations that implement the federal Clean Water Act. That definition reads:

"Water quality standards are provisions of state or federal law which consist of a designated use or uses for the waters of the United States and water quality criteria for such waters based upon such uses. Water quality standards are to protect the public health or welfare, enhance the quality of water and serve the purposes of the Act." [40 Code of Federal Regulations (CFR) Section 130.2(c) and 131.3(I)]

So, federal water quality standards must contain at least two critical components:

- 1) the designation of beneficial uses of water, and
- the establishment of water quality criteria designed to protect those uses.

In California, the Water Quality Control Plans designate the beneficial uses of waters of the state and water quality objectives (the "criteria" under the Clean Water Act) to protect those uses. The Water Ouality Control Plans are adopted by the State and Regional Water Boards through a formal administrative rulemaking process and, thereby, have the force of regulation. As mentioned above, the California Toxics Rule criteria, adopted by USEPA, when combined with existing beneficial use designations in the Water Quality Control Plans, are also water quality standards. One critical difference between the state and federal programs is that while the Clean Water Act focuses on surface water resources, the term "waters of the state" under the Porter-Cologne Act includes both surface waters and groundwaters. Therefore, California has water quality standards applicable to groundwaters as well as to surface waters. Another difference is that California's Water Quality Control Plans include implementation programs to achieve and maintain compliance with water quality objectives.

California's water quality standards are enforceable by the State and Regional Water Boards. They apply throughout the bodies of surface water and groundwater for which they were established.

### BENEFICIAL USES

Section 13050(f) of the Porter-Cologne Act defines beneficial uses as follows:

"Beneficial uses' of waters of the state that may be protected against quality degradation include, but are not necessarily limited to, domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves."

The State and Regional Water Boards' *Water Quality Control Plans* list the specific beneficial uses established for each of California's surface water and groundwater bodies. For example, the Central Valley Region's *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins* lists the following beneficial uses of surface waters and groundwaters:

- Municipal and Domestic Supply
- ♦ Agricultural Supply
- Industrial Supply (both Service and Process)
- Groundwater Recharge
- Freshwater Replenishment
- Navigation
- Hydropower Generation
- Recreation (both Water Contact and Non-Water Contact)
- Commercial & Sport Fishing
- ♦ Aquaculture
- Freshwater Habitat (both Warm and Cold)
- Estuarine Habitat
- Wildlife Habitat
- Preservation of Biological Habitats of Special Significance
- Preservation of Rare, Threatened, or Endangered Species
- Migration of Aquatic Organisms
- Spawning, Reproduction, and/or Early Development
- Shellfish Harvesting

The Water Quality Control Plans specify which beneficial uses apply to each body of water within each region of the state. Under the Porter-Cologne Act, the discharge of waste is not a right, but a privilege, subject to specific permit conditions. The discharge of waste is also not a beneficial use of water. The Water Boards' mission is to protect water quality from discharges of waste that could cause impairment of designated beneficial uses.

### Sources of Drinking Water Policy

Also included within California's system of water quality standards are the "policies for water quality control" adopted by the State Water Board and incorporated into each of the Basin Plans. One such policy is critical to the designation of beneficial uses.

In 1988, the State Water Board adopted Resolution No. 88-63, the "Sources of Drinking Water" policy. This policy specifies that, except under specifically defined circumstances, all surface water and groundwater of the state are to be protected as existing or potential sources of municipal and domestic supply, unless this beneficial use is explicitly de-designated in a *Water Quality Control Plan*. The policy lists specific circumstances under which waters may be excluded from this beneficial use, including:

- waters with existing high total dissolved solids concentrations (greater than 3000 mg/l);
- waters having low sustainable yield (less than 200 gallons per day for a single well);
- water with contamination, unrelated to a specific pollution incident, that cannot reasonably be treated for domestic use;
- waters within particular wastewater conveyance and holding facilities; and
- regulated geothermal groundwaters.

These exemptions to the general municipal and domestic supply beneficial use designation are applied to specific water bodies through formal Basin Plan amendments by the appropriate Regional Water Board.

### WATER QUALITY OBJECTIVES

The second component of California's water quality standards is water quality objectives. The Porter-Cologne Act defines "water quality objectives" as "the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area." Since pollution is defined as an alteration of water quality to a degree which unreasonably affects beneficial uses, pollution occurs whenever water quality objectives are exceeded.

Water quality objectives designed to protect beneficial uses and prevent nuisance are also found in the

Water Quality Control Plans. As with beneficial uses, water quality objectives are established either for specific bodies of water, such as the Sacramento River between Shasta Dam and the Colusa Basin Drain, or for protection of particular beneficial uses of surface waters or groundwaters throughout a specific basin or region. In addition, the water quality criteria for toxic pollutants in the *California Toxics Rule* apply to nearly all of the state's surface waters which are not covered by the *Ocean Plan*, i.e., to inland surface waters, enclosed bays and estuaries. These limits are called "criteria" (rather than "objectives") because they were promulgated by USEPA pursuant to the federal Clean Water Act.

Water quality objectives may be stated in either numerical or narrative form. Where numerical objectives are listed in the *Water Quality Control Plans*, their values are applicable numerical water quality limits for the indicated constituent(s) or parameter(s). If not exceeded, they will provide reasonable protection for beneficial uses of the specified body of water. However in many cases, water quality objectives are stated in narrative form. Narrative objectives describe a requirement or a prohibition. Examples of narrative objectives, established in the Central Valley Region's *Water Quality Control Plan for the Sacramento River* and San Joaquin River Basins, include:

- Chemical Constituents
  - "Waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses.

"At a minimum, water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs) specified in ... Title 22 of the California Code of Regulations [California's drinking water standards] ...

"To protect all beneficial uses, the Regional Water Board may apply limits more stringent than MCLs."

Tastes and Odors —

"Water shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses." Toxicity —

"... waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life associated with designated beneficial use(s). This objective applies regardless of whether the toxicity is caused by a single substance or the interactive effects of multiple substances."

The Central Valley Region's Basin Plans also contain water quality objectives for the following constituents and parameters:

- ♦ Bacteria
- Biostimulatory Substances
- Color
- Dissolved Oxygen
- ♦ Floating Material
- Oil and Grease
- Pesticides
- ♦ pH
- Radioactivity
- ♦ Salinity
- Sediment
- Settleable Material
- Suspended Material
- Temperature
- ♦ Turbidity

Some are expressed as numerical objectives, while others are in narrative form. Narrative water quality objectives must be interpreted through the selection of numerical limits, as further described below.

### **ANTIDEGRADATION POLICY**

Water is a multiple-use resource. That is, the same water may be used many times between where it falls as rain or snow in the mountains and where it eventually flows into the ocean. Each use of water causes some change or degradation in its quality. Water quality can also be degraded by discharges of waste and other human activities. Multiple water uses and waste discharges and the combined effect on water quality must be considered. If the Board allows a single use or discharge to degrade water quality to a level just sufficient to protect beneficial uses, then no capacity exists for further degradation by other water uses or other human activities. The ability to beneficially use the water has been impaired.

In addition, our understanding of the health and

environmental effects of chemicals and combinations of chemicals is constantly evolving. What is considered safe at 10 ug/L today may be found to be harmful at 1 ug/L tomorrow. For these reasons, it is often desirable to minimize the degradation of water quality and to preserve a higher water quality than that which will just support beneficial uses, that is, better than applicable water quality objectives.

Realizing this need, the State Water Resources Control Board in 1968 adopted Resolution No. 68-16, *Statement of Policy With Respect to Maintaining High Quality of Waters in California*. This established an *Antidegradation Policy* for the protection of water quality in California. Under this policy, whenever the existing quality of water is better than that needed to protect all present and probable future beneficial uses, such existing high quality is to be maintained until or unless it has been demonstrated to the state that any change in water quality:

- will be consistent with the maximum benefit to the people of the state;
- will not unreasonably affect present or probable future beneficial uses of such water; and
- will not result in water quality less than prescribed in state policies.

Unless these three conditions are met, background water quality—the concentrations of substances in natural waters that are unaffected by waste management practices or contamination incidents—is to be maintained.

If the State or Regional Water Board determines that some water quality degradation is in the best interest of the people of California, some incremental increase in constituent concentrations above background levels may be permitted under the Policy. However, in no case may such degradation cause unreasonable impairment of beneficial uses that have been designated for a water of the state.

The effect of this policy is to define a range of water quality—between natural background levels and the water quality objectives—that must be maintained. Within this range, the Water Boards must balance the need to protect existing high quality water with the benefit to California as a whole of allowing some degradation to occur from the discharge of waste.

The policy also specifies that discharges of waste to existing high quality waters are required to use "best practicable treatment or control," thereby imposing a

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technology-based limit on such discharges.

In more recent actions, the State Water Board further delineated implementation of the Antidegradation Policy. These include the adoption of monitoring and corrective action regulations and a cleanup policy.

### **CHAPTER 15, ARTICLE 5 REGULATIONS**

In July 1991, the State Water Board adopted revised regulations for water quality monitoring and corrective action for waste management units—facilities where wastes are discharged to land for treatment, storage or disposal. These regulations, contained in Title 23 of the California Code of Regulations, Division 3, Chapter 15, Article 5, contain the only interpretation of the state's Antidegradation Policy that has been promulgated in regulations. Article 5 requires the Regional Water Board to establish water quality protection standards for all waste management units. Water quality protection standards include concentration limits for constituents of concern, which must be met in groundwater and surface water that could be affected by a release from the waste management unit.

Section 2550.4 of these regulations requires that, in most cases, concentration limits be established at background levels. However, in a corrective action program for a leaking waste management unit where the discharger of waste has demonstrated that it is technologically or economically infeasible to achieve background levels, the Regional Water Board may adopt concentration limits greater than background (CLGBs). These limits must be set:

- at the lowest concentrations for the individual constituents which are technologically and economically achievable;
- so as not to exceed the maximum concentrations allowable under applicable statutes and regulations for individual constituents [including water quality objectives];
- so as not to result in excessive exposure to a sensitive biological receptor [as shown, for example, through health and ecological risk assessments]; and
- so that theoretical risks from chemicals associated with the release shall be considered additive across all media of exposure and shall be considered additive for those constituents that cause similar toxicologic effects or have carcinogenic effects.

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### **CLEANUP POLICY**

In June 1992, the State Water Board adopted Resolution No. 92-49, Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304. This policy for water quality control, which was modified in April 1994 and October 1996, states that the Antidegradation Policy of Resolution No. 68-16 is applicable to the cleanup of contaminated sites, and that criteria in Section 2550.4 of the Chapter 15 regulations are to be used to set cleanup levels for such sites. [For cleanup of leaking underground tank sites, Section 2550.4 criteria are to be considered in setting cleanup levels under Chapter 16 of Title 23, Division 3 of the California Code of Regulations.] In determining cleanup levels for water and for contaminated soils which threaten water quality, background constituent concentrations in water are the initial goal. If attainment of background concentrations is not achievable, cleanup levels must be set as close to background as technologically and economically feasible. They must, at a minimum, restore and protect all applicable beneficial uses of waters of the state, as measured by the water quality objectives, and must not present significant health or environmental risks.

### NUMERICAL WATER QUALITY LIMITS

To determine whether a particular waste management activity or constituent release has caused or threatens to cause pollution—a degradation in water quality severe enough to impair present or probable future beneficial uses—one must refer to California's water quality standards. As described earlier, the standards consist of a beneficial use or uses of water and water quality objectives to protect those uses. Any narrative objective must be interpreted and a numerical limit selected which meets the narrative objective. Once all beneficial uses, water quality objectives and numerical limits have been identified, those water quality limits that protect all beneficial uses are selected for comparison with measured or projected constituent concentrations in the water body of interest.

The first step in selecting beneficial use protective water quality limits is to identify the bodies of groundwater and/or surface water that have been or have the potential to be affected by the particular waste management activity or constituent release. Under California's *Antidegradation Policy*, water quality limits are initially set equal to true background levels in the body of water. Constituent concentrations in excess of background levels in the water body, caused or threatened to be caused by a discharge of waste, indicate that water quality *degradation* has occurred or is threatened.

If degradation has already occurred, water quality limits should also be selected to determine whether *pollution* has occurred or is threatened. In that case, water quality limits are selected so as to ascertain compliance with all applicable water quality objectives for the protection of the beneficial uses which have been designated for the water body in question. Designated beneficial uses and applicable water quality objectives to protect those uses are contained in the appropriate *Water Quality Control Plan(s)*. The process of selecting beneficial use protective water quality limits to interpret these standards is shown in Figure 1.

Some water quality objectives are numerical. These numerical objectives are a subset of the applicable beneficial use protective water quality limits. If narrative water quality objectives also apply to the constituent or parameter of interest in the water body, compliance with those objectives may be determined through measurement (e.g., toxicity testing) or other direct evidence of beneficial use impacts. Alternatively, relevant numerical water quality limits may be selected from the literature and used to interpret the narrative objectives. Water quality limits from the literature, called water quality goals in this report, include drinking water standards, ambient water quality criteria, cancer risk estimates, health advisories, and other numerical values that represent concentrations of chemicals that would limit specific uses of water. An example of a water quality goal is the taste and odor threshold for ethylbenzene of 29 ug/L, published by USEPA. This water quality goal could be used to interpret compliance with the narrative water guality objective for tastes and odors, discussed above.

For each constituent, all applicable numerical objectives along with water quality goals selected to interpret each applicable narrative objectives are collected and the most limiting (most stringent) of these values is selected. Below this most limiting value, compliance with all applicable water quality objectives is assured and the most sensitive beneficial use should be protected. This most limiting value be-

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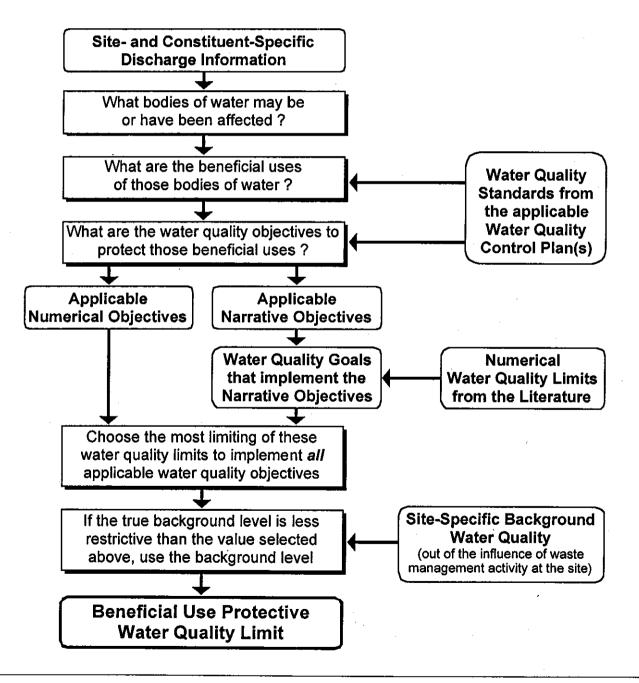
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comes the beneficial use protective water quality limit for the constituent of interest in the water body. If the concentration of the constituent exceeds the beneficial use protective water quality limit, one or more water quality objectives have been violated and pollution has occurred.

The one exception to this is where the site-specific natural background condition in water is a higher con-

centration than the beneficial use protective water quality limit. The State and Regional Water Boards authority for protection of water quality from waste discharges is limited to the regulation of "controllable water quality factors"—those actions, conditions, or circumstances resulting from human activities that may influence the quality of waters of the state and that may be reasonably controlled. Where the natural

### FIGURE 1. SELECTING BENEFICIAL USE PROTECTIVE NUMERICAL LIMITS IN WATER



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background level is higher than the beneficial use protective water quality limit, the natural background level is considered to comply with the water quality objective. In such cases, other controllable factors are not allowed to cause any further degradation of water quality.

### TYPES OF WATER QUALITY GOALS

The literature contains many useful water quality limits designed to protect specific beneficial uses of water. These water quality goals can be used to interpret narrative water quality objectives. The following is a summary of available types of water quality goals that are presented in this document. The Reference section at the end of this report lists the sources of these limits, including internet addresses where available.

#### Maximum Contaminant Levels (MCLs)

MCLs are part of the drinking water standards adopted by the California Department of Health Services (DHS) pursuant to the California Safe Drinking Water Act. California MCLs may be found in Title 22 of the California Code of Regulations (CCR), Division 4, Chapter 15, *Domestic Water Quality and Monitoring*. USEPA also adopts MCLs under the federal Safe Drinking Water Act. DHS's drinking water standards are required to be at least as stringent as those adopted by the USEPA. Some California MCLs are more stringent than USEPA MCLs.

Primary MCLs are derived from health-based criteria (by USEPA from MCL Goals; by DHS from Publich Health Goals or from one-in-a-million [10<sup>-6</sup>] incremental cancer risk estimates for carcinogens and threshold toxicity levels for non-carcinogens). MCLs also include technologic and economic considerations relating to the feasibility of achieving and monitoring for these concentrations in drinking water supply systems and at the tap. It should be noted that the balancing of health effects with technologic and economic considerations in the derivation of MCLs may not be appropriate for protection of the quality of a raw surface water or groundwater resource, as will be discussed below. Secondary MCLs are derived from human welfare considerations (e.g., taste, odor, laundry staining) in the same manner as Primary MCLs.

Drinking water MCLs are directly applicable to and enforceable by DHS and local health departments on water supply systems and at the tap. MCLs, both Primary and Secondary, are directly applicable to groundwater and surface water resources when they are specifically referenced as water quality objectives in the pertinent *Water Quality Control Plan*. Where fully health protective, MCLs may also be used to interpret narrative objectives prohibiting toxicity to humans in water designated as a source of drinking water (municipal and domestic supply) in the *Water Quality Control Plan*.

# Maximum Contaminant Level Goals (MCL Goals or MCLGs)

MCLGs are promulgated by USEPA as part of the National Primary Drinking Water Regulations. MCLGs represent the first step in establishing Primary MCLs and are required by federal statute to be set at levels that represent no adverse health risks. They are set at "zero" for known and probable human carcinogens, since theoretically a single molecule of such a chemical could present some degree of cancer risk. Threshold levels posing no risk of health effects (other than cancer) are used for non-carcinogens and for possible human carcinogens. Because they are purely health-based, non-zero MCLGs may be useful in interpreting narrative water quality objectives which prohibit toxicity to human consumers.

### **Public Health Goals (PHGs)**

The California Safe Drinking Water Act of 1996 requires the Office of Environmental Health Hazard Assessment (OEHHA) to perform risk assessments and adopt Public Health Goals for contaminants in drinking water based exclusively on public health considerations. PHGs represent levels of contaminants in drinking water that would pose no significant health risk to individuals consuming the water on a daily basis over a lifetime. They are based on a 10<sup>-6</sup> incremental cancer risk estimate for carcinogens and a threshold toxicity limit for other contaminants, with a margin of safety. OEHHA and DHS consider the 10<sup>-6</sup> risk level to represent a *de minimis* level of cancer risk from involuntary exposures.

PHGs adopted by OEHHA are for use by the DHS in establishing primary drinking water MCLs. Where PHGs are to be based solely on scientific and public health considerations without regard to economic considerations, drinking water MCLs are to consider eco-

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nomic factors and technical feasibility. Each MCL adopted by DHS is to be set at a level that is as close as feasible to the corresponding PHG, placing emphasis on the protection of public health. Being purely health-based, PHGs are also appropriate to use in interpreting narrative toxicity objectives with respect to human exposures from constituents in waters that have been designated as existing or potential sources of municipal and domestic supply. In addition, where water quality objectives require compliance with drinking water MCLs, the PHGs may provide an indication as to whether MCLs are likely to be revised upward or downward in the future. This information is important because the State and Regional Water Boards must ensure the usability of water for the foreseeable future.

### State Action Levels

Action levels, published by DHS, are based mainly on health effects. An incremental cancer risk estimate of 10<sup>-6</sup> is used for carcinogens and a threshold toxicity limit is used for other constituents. As with MCLs, the ability to quantify the amount of the constituent in a water sample using readily available analytical methods may cause action levels to be set at somewhat higher concentrations than purely healthbased values. Organoleptic (taste- and odor-based) values are also included as action levels for some chemicals. Action levels are advisory to water suppliers. If exceeded, DHS urges the supplier to correct the problem or to find an alternative raw water source. When they are purely health-based, action levels may also be used to interpret narrative objectives that prohibit toxicity to humans that may drink the water.

### **Cal/EPA Cancer Potency Factors**

The Office of Environmental Health Hazard Assessment has lead responsibility within Cal/EPA for the assessment of human health risks associated with exposures to toxic substances in environmental media. OEHHA also performs health risk assessments for California state agencies outside Cal/EPA, such as the development of PHGs for the Department of Health Services. OEHHA maintains a database of health risk information for chemicals called the Toxicity Criteria Database. The health based criteria presented in this database have been used as a basis for California state regulatory actions. The majority has undergone peer review and in many cases rigorous regulatory review. The database includes cancer potency factors for inhalation and oral exposures to many chemicals. These Cal/EPA cancer potency factors may be used to calculate concentrations in drinking water associated with specific cancer risk levels, using standard exposure assumptions (see *Threshold Risk Characterization*, below.).

#### Integrated Risk Information System (IRIS)

The USEPA Office of Research and Development, National Center for Environmental Assessment maintain a chemical database called the Integrated Risk Information System. IRIS contains USEPA's most current information on human health effects that may result from exposure to various substances found in the environment. Two types of criteria are presented in IRIS. Reference doses (RfDs) are calculated as safe exposure levels with respect to non-cancer health effects. They are presented in units of milligrams of chemical per kilogram body weight per day of exposure (mg/kg-day). RfDs may be converted into concentrations in drinking water (mg/L or ug/L) using standard exposure assumptions (see Threshold Risk Characterization, below.). IRIS also presents concentrations of chemicals in drinking water that would be associated with specific levels of cancer risk.

# Drinking Water Health Advisories and Water Quality Advisories

Health Advisories are published by USEPA for short-term (1-day exposure or less or 10-day exposure or less), long-term (7-year exposure or less), and lifetime human exposures through drinking water. Health advisories for non-carcinogens and for possible human carcinogens are calculated for chemicals where sufficient toxicologic data exist. Incremental cancer risk estimates for known and probable human carcinogens are also presented.

Water Quality Advisories contain human health related criteria that assume exposure through both drinking water and consumption of contaminated fish and shellfish from the same water. Some Water Quality Advisories also contain criteria that are intended to be protective of aquatic life.

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# Suggested No-Adverse-Response Levels (SNARLs)

These human health-based criteria were published by the National Academy of Sciences (NAS) in the nine volumes of *Drinking Water and Health* (1977 to 1989). USEPA's health advisories were also formerly published as "SNARLs." SNARLs do not reflect the cancer risk that may be posed by these chemicals. Incremental cancer risk estimates for carcinogens are presented separately in these NAS and USEPA documents. NAS criteria from *Drinking Water and Health* may not contain the most recent toxicologic information. They should only be used to interpret narrative water quality objectives where more recent healthbased criteria are absent.

### **Proposition 65 Regulatory Levels**

Proposition 65 levels are established under the California Safe Drinking Water and Toxic Enforcement Act of 1986 for known human carcinogens and reproductive toxins. Proposition 65, an initiative statute, made it illegal to expose persons to significant amounts of these chemicals without prior notification or to discharge significant amounts of these chemicals to sources of drinking water. These "significant amounts" are adopted by OEHHA in regulations contained in Title 22 of CCR, Division 2, Chapter 3.

For carcinogens, no-significant-risk levels (NSRLs) are set at concentrations associated with a one-in-100,000 ( $10^{-5}$ ) incremental risk of cancer. These are the only California health based limits derived from risk levels greater than  $10^{-6}$ . As such, they are not as protective of human health as many other published criteria (see *Which Cancer Risk Level?*, below).  $\frac{1}{1000}$  of the no-observable-effect level (NOEL) is adopted for reproductive toxicants.

Proposition 65 levels are doses, expressed in units of micrograms per day of exposure (ug/d). These levels may be converted into concentrations in water by assuming 2 liters per day water consumption and 100 percent exposure to the chemical through drinking water, under regulations contained in Title 22 of CCR, Sections 12721 and 12821.

### **National Ambient Water Quality Criteria**

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These criteria, also called the National Recommended Water Quality Criteria, are developed by USEPA under Section 304(a) of the Clean Water Act to provide guidance to the states in adopting water quality standards under Section 304(c) of the Act and to interpret narrative toxicity standards (water quality objectives in California). These criteria are designed to protect human health and welfare and aquatic life from pollutants in freshwater and marine surface waters.

The human health protective criteria differ significantly from those discussed above. They assume two different exposure scenarios. For waters that are sources of drinking water, exposure is assumed both from drinking the water and consuming aquatic organisms (fish and shellfish) that live in the water. For waters that are not sources of drinking water, exposure is assumed to be from the consumption of aquatic organisms only. Aquatic organisms are known to bioaccumulate certain toxic pollutants in their tissues, so as to magnify human exposures. Because these human health based criteria assume exposure through fish and shellfish consumption, they should not be used to interpret water quality objectives for groundwater where human exposure will only occur from municipal or domestic supply uses. The criteria also include threshold health protective criteria for non-carcinogens. Incremental cancer risk estimates for carcinogens are presented at a variety of risk levels. Organoleptic (taste- and odor-based) levels are also provided for some chemicals to protect human welfare.

National Ambient Water Quality Criteria also include criteria that are intended to protect freshwater and/or saltwater aquatic life. Normally, two types of limits are presented. Criteria Maximum Concentrations (CMCs) protect aquatic organisms from acute exposures (expressed as 1-hour average or instantaneous maximum concentrations) to pollutants. Criteria Continuous Concentrations (CCCs) protect aquatic organisms from chronic exposures (expressed as 4-day or 24-hour average concentrations). To be able to derive these criteria, the USEPA method requires toxicity data for species representing a minimum of eight families of organisms, including coverage of both vertebrate and invertebrate species. Important aquatic plant species are also considered. Fundamental to the method is protection of all species, even at sensitive life stages, for which there are reliable measurements in the data set. Criteria derived by this method are also intended to protect species for which those in the data set serve as surrogates. Toxicity information, in the

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form of lowest observed effect levels, is often presented in the USEPA criteria documents where there is insufficient toxicologic information with which to develop recommended criteria.

The National Ambient Water Quality Criteria are found in a number of USEPA documents:

- Quality Criteria for Water, 1986, with updates in 1986 and 1987, also known as the "Gold Book";
- the Ambient Water Quality Criteria volumes on specific pollutants or classes of pollutants (1980, 1984, 1985, 1986, 1987, 1988, 1989, 1991, 1993, and 1995);
- Quality Criteria for Water (1976), also known as the "Red Book";
- Water Quality Criteria, 1972, also known as the "Blue Book."

In December 1992, USEPA promulgated the *National Toxics Rule*, which updated many of these criteria and made them directly applicable standards for surface waters in many states, including some California waters. These regulations, found in 40 CFR Section 131.36, specify that "[t]he human health criteria shall be applied at the State-adopted 10<sup>-6</sup> risk level" for California. To ascertain compliance with the aquatic life protective criteria for metallic constituents, water quality samples were to be analyzed for "total recoverable" concentrations. In May 1995, USEPA amended these regulations to convert most of these aquatic life criteria to dissolved concentrations. In April 1999, USEPA published the most recent summary of *National Recommended Water Quality Criteria*.

### California Toxics Rule (CTR) Criteria

The federal Clean Water Act requires all states to have enforceable numerical water quality criteria applicable to priority toxic pollutants in surface waters. California lacked many of these standards, in part due to the State Water Board's repeal of the *Inland Surface Waters Plan* and *Enclosed Bays and Estuaries Plan*, resulting from a legal challenge. In May 2000, USEPA promulgated water quality criteria for priority toxic pollutants for California's inland surface waters and enclosed bays and estuaries. Included are both human health and aquatic life protective criteria, similar to those published in the *National Recommended Water Quality Criteria*.

The CTR criteria, along with the beneficial use designations in the *Basin Plans*, are directly applicable

water quality standards for these toxic pollutants in these waters. Implementation provisions for these standards have been provided in the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (SWRCB Resolution No. 2000-015), adopted by the State Water Board in March of this year. The policy includes time schedules for compliance, provisions for mixing zones, analytical methods and reporting levels.

### **Other Numerical Limits**

Other sources of numerical water quality limits include:

- Water Quality for Agriculture, published by the Food and Agriculture Organization of the United Nations in 1985, which contains criteria protective of agricultural uses of water.
- Hazard Assessments and Water Quality Criteria, published by the California Department of Fish and Game, which contain criteria that are protective of aquatic life from exposure to several pesticides. USEPA methods are used to derive these criteria.
- Water Quality Criteria, Second Edition, written by McKee and Wolf and published by the State Water Resources Control Board in 1963 and 1978, which contains criteria for human health and welfare, aquatic life, agricultural use, industrial use, and various other beneficial uses of water. This document is available from the National Technical Information Service (NTIS) as Publication No. PB 8218824.
- Taste and odor thresholds are published in several documents, including USEPA Drinking Water Contaminant Fact Sheets and an extensive collection by J.E. Amoore and E. Hautala in their paper, Odor as an Aid to Chemical Safety: Odor Thresholds Compared with Threshold Limit Values and Volatilities for 214 Industrial Chemicals in Air and Water Dilution, published in Journal of Applied Toxicology (1983).

The numerical water quality limits discussed above as well as the numerical water quality objectives from the State Water Board's *Water Quality Control Plan for Ocean Waters of California* (the Ocean Plan) are summarized in the tables and graphs that make up the remainder of this report.

### RISK CHARACTERIZATION METHODS FOR DRINKING WATER

The methods by which the USEPA and other agencies establish lifetime health advisories and concentration-based cancer risk estimates for constituents in drinking water may be used to calculate water quality goals from other published toxicologic criteria. These methods are based on the following toxicologic principles.

#### **Threshold Toxins vs. Non-Threshold Toxins**

The toxic effects of chemicals may be roughly divided into two categories, threshold and non-threshold. It is important to recognize that it is not the chemical itself, but the dose (the concentration of the chemical multiplied by the duration of exposure), which is responsible for the toxic effect. Below a particular threshold dose, many chemicals cause no toxicity. These chemicals are called threshold toxins. Cyanide, mercury, and the pesticide malathion fall into this category. Some threshold chemicals, like Vitamin A, are beneficial to human health at low doses, but toxic at high doses.

On the other hand, some chemicals have no toxicity threshold; they may pose a quantifiable health risk at any concentration. Most carcinogens are thought to fall into this non-threshold category. Essentially, one molecule is considered to have the potential to cause some finite risk of getting cancer. Health risks for nonthreshold toxins are characterized by probabilities. The higher the dose, the higher the probability of experiencing the toxic effect. For example, according to Cal/EPA, OEHHA, 0.35 microgram of benzene per liter of drinking water is associated with the probability of causing one additional cancer case in a million persons who are exposed at a 2 liters of water per day over their lifetimes. The value of 0.35 ug/L is the estimated drinking water concentration associated with a 1-in-a-million (10<sup>-6</sup>) cancer risk, also known as the 10<sup>-6</sup> cancer risk estimate for benzene. Because cancer risk is a probabilistic event, the cancer risk level is directly proportional to the dose, or the concentration in water if all other factors are held constant. Therefore, the 10 <sup>5</sup> cancer risk level (1 extra case of cancer in 100,000 exposed persons) for benzene would be 3.5 ug/L.

Chemicals are currently assigned by USEPA into five categories, by considering the weight of cancer

risk evidence that exists in the toxicologic record:

- Class A chemicals are known human carcinogens (sufficient human exposure data exists);
- *Class B* chemicals are probable human carcinogens (limited human data, but sufficient animal exposure data exist);
- Class C chemicals are possible human carcinogens (no human data and limited animal data exist);
- Class D chemicals have insufficient cancer risk data to assign them to another category; and
- *Class E* chemicals have sufficient evidence to indicate that they are not carcinogens.

USEPA does not publish threshold health advisories for lifetime exposure for Class A or Class B chemicals. USEPA publishes cancer risk estimates for Class A, Class B, and sometimes for Class C chemicals.

Because of the different ways in which chemicals are believed to cause adverse health impacts, the characterization of health risks for non-threshold toxins is different from that for threshold toxins.

#### Non-Threshold Risk Characterization

For non-threshold constituents, the risk of a toxic effect is considered to be proportional to the amount or dose of the chemical to which a population is exposed. For each carcinogen, risk and dose are related by a cancer potency factor (often abbreviated q1\*) which is equal to the risk of getting cancer per unit dose of the chemical. The factor is expressed in units of inverse milligrams of chemical per kilogram body weight per day of exposure (mg/kg/day)<sup>-1</sup>. The cancer risk level, dose, and cancer potency factor are related by equation [1] in Figure 2. Potency factors for carcinogens are calculated by extrapolation from dose-response relationships developed in laboratory animal exposure studies. They may be found in the Cal/EPA Toxicity Criteria Database, the USEPA Integrated Risk Information System (IRIS) database and USEPA health advisory documents.

If we assume a drinking water consumption rate of 2 liters per day and an average human body weight of 70 kg, dose and concentration in drinking water may be related by equation [2]. These are standard assumptions used by federal and state drinking water regulatory and advisory programs and by OEHHA in regulations that implement Proposition 65. By combining equations [1] and [2] and rearranging, we obtain equation [3]. This equation allows calculation of a

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concentration in drinking water associated with a given cancer risk level, if the potency factor is known. For example, the Cal/EPA cancer potency factor for the pesticide 1,2-dibromo-3chloropropane or DBCP is 7 (mg/kg/day)<sup>-1</sup>. Using equation [3], the concentration in drinking water associated with a 1-in-a-million (10<sup>-6</sup>) lifetime cancer risk level may be calculated as 0.000005 mg/l or 0.005 ug/L. This  $10^{-6}$  cancer risk estimate along with other similarly calculated cancer risk estimates may be found in the tables of this report.

### Which Cancer Risk Level?

There is often confusion as to which cancer risk level should be used in selecting human health-based criteria to interpret the narrative water quality objectives. The one-in-a-million  $(10^{-6})$  cancer risk level has historically formed the basis of human health protective numerical water quality limits in California. It is generally recognized by California and federal agencies as the *de minimis* level of risk associated with involuntary exposure to toxic chemicals in environmental media. Therefore the  $10^{-6}$  risk level should govern the selection of human health-based criteria to interpret narrative toxicity objectives.

Regulations implementing Proposition 65 cite the one-in-a-hundred-thousand  $(10^{-5})$  risk level for carcinogens. However, the intent of this initiative statute is public notice prior to exposure to certain chemicals and the prohibition of specific discharges of these chemicals. It is not the intent of Proposition 65 to establish levels of involuntary environmental exposure that are considered "safe." Therefore, Proposition 65 does not provide a relevant precedent for determining the level of cancer risk for compliance with the narrative toxicity objectives.

The 10<sup>-6</sup> risk level has long formed the basis of water-related health-protective regulatory decision-making in California. The following are some of the

#### FIGURE 2. CALCULATION OF HEALTH BASED LIMITS

- [1] Risk Level = Dose × Potency Factor
- [2] Dose (mg/kg/day) = Concentration (mg/l) × 2 liters/day + 70 kg
- [3] Concentration (mg/l) =  $\frac{\text{Risk Level x 70 kg}}{\text{Potency Factor x 2 liters/day}}$ [4] RfD =  $\frac{\text{NOAEL}}{\text{Uncertainty Factor}}$ [5] DWEL =  $\frac{\text{RfD x 70 kg}}{2 \text{ liters/day}}$ [6] Lifetime Health Advisory (mg/l) =  $\frac{\text{DWEL x 20\% RSC}}{\text{Additional Uncertainty Factor}}$

more significant instances:

- DHS Statement of Reasons documents that justify Primary MCLs for carcinogenic substances all use the 10<sup>-6</sup> risk level for lifetime exposure as the basis from which the MCLs were derived. In these documents DHS describes the 10<sup>-6</sup> risk level as "the *de minimis* excess cancer risk value" which is "typically assumed by federal and state regulatory agencies for involuntary exposures to environmental pollutants." MCLs for carcinogens deviate from the 10<sup>-6</sup> risk level only where technologic or economic factors prevent the use of this level.
- DHS action levels for drinking water are also set at the 10<sup>-6</sup> risk level unless technologic or economic factors prevent using that level, as with the Primary MCLs.
- The Preliminary Endangerment Assessment Guidance Manual published by the Department of Toxic Substances Control (DTSC) [page 2-26] states that "[i]n general, a risk estimation greater that [sic] 10<sup>-6</sup> or a hazard index greater than 1 indicate the presence of contamination which may pose a significant threat to human health."
- USEPA National Ambient Water Quality Criteria, recommended to protect human health from carcinogenic chemicals in surface waters, historically have presented 10<sup>-5</sup>, 10<sup>-6</sup>, and 10<sup>-7</sup> risk estimates (with a geometric mean of 10<sup>-6</sup>) in water.

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- Clean Water Act water quality criteria promulgated on California waters by USEPA in the National Toxics Rule and the California Toxics Rule state that "[t]he human health criteria shall be applied at the State-adopted 10<sup>-6</sup> risk level." These criteria are water quality standards for surface waters in California.
- Functional Equivalent Documents adopted by the State Water Board that provide background and justification for the California Ocean Plan and the former California Inland Surface Waters and Enclosed Bays and Estuaries Plans all cite the 10<sup>-6</sup> risk level as the basis of human health protective water quality objectives for carcinogens.
- Public Health Goals for drinking water, adopted by OEHHA, are based on the 10<sup>-6</sup> risk level for carcinogens, "a level that has been considered negligible or *de minimis*," and a 70 year exposure period.
- Recent enforcement decisions regarding an off-site chlorinated solvent plume from Mather Air Force Base, the Central Valley Regional Water Quality Control Board required that replacement water supply be provided when the level of carcinogenic chemicals is detected and confirmed at or above concentrations that represent 10<sup>-6</sup> lifetime cancer risk levels in individual wells. This decision implements the narrative toxicity objective for groundwater from the Water Quality Control Plan (Basin Plan) for the Sacramento River and San Joaquin River Basins.
- Cleanup and Abatement Order No. 92-707 adopted by the Central Valley Regional Water Quality Control Board established cleanup levels for groundwater at the Southern Pacific Transportation Company, Tracy Yard, San Joaquin County at the 10<sup>-6</sup> lifetime cancer risk levels for carcinogens, based on the narrative toxicity objective for groundwater from the Basin Plan for the Sacramento River and San Joaquin River Basins.

### **Threshold Risk Characterization**

To determine the concentration of a threshold toxin that is safe for humans to consume in drinking water, toxic and safe dose information is first derived from animal studies. In these studies, laboratory animals are exposed to a chemical at specific dose levels. USEPA and other agencies choose one of two dose level results from these studies from which to calculate safe levels in drinking water. The no observed adverse effect level (NOAEL) is the highest dose that caused no toxic effect to animals in the study. The lowest observed adverse effect level (LOAEL) is the lowest dose that did cause a measurable toxic effect in the study. The LOAEL is a higher dose than the NOAEL. Because the toxic dose of a chemical is usually related to the body weight of the animal studied, doses are often reported in units of milligrams of chemical per kilogram of body weight per day of exposure (mg/kgday). Both NOAELs and LOAELs are expressed in these units.

USEPA and other agencies use the NOAEL or LOAEL to calculate a reference dose or RfD for a toxic chemical, using equation [4] in Figure 2. The uncertainty factor in the equation accounts for unknowns in the derivation of human risk levels from animal data. The minimum uncertainty factor is 10, which accounts for the fact that some people (e.g., children and the elderly) are more sensitive to toxic chemical exposures than is the average person. The minimum uncertainty factor is normally multiplied by additional factors of 10 for each of the following conditions, if they apply:

- Extrapolation from animal toxicity studies to human toxicity (not used with human exposure data);
- Using a LOAEL in place of a NOAEL in equation
   [4], above;
- Using a dose (NOAEL or LOAEL) from a study which examined a less appropriate route of exposure to the chemical (the route of exposure most relevant to drinking water is ingestion);
- Using a dose from a study which exposed test animals for a period of time which is not a significant fraction of the animals' lifetime (subchronic exposure);
- Potential synergism among chemicals (the toxicity of two or more chemicals is greater than additive —the sum of their individual toxicities); and
- ♦ Any other toxicologic data gaps.

RfDs have the same units as the NOAELs and LOAELs from which they are derived, mg/kg/day. The USEPA IRIS database contains reference doses for many threshold toxins.

The next step, equation [5], is the calculation of a drinking water equivalent level (DWEL) from the reference dose. This step is derived from equation [2] by

assuming an average human body weight of 70 kilograms and an average drinking water consumption rate of two liters per day. As with the calculation of cancer risk criteria in water, these are standard assumptions used by federal and state drinking water regulatory and advisory programs.

One last step, equation [6] in Figure 2, is required to turn the DWEL into the equivalent of a lifetime health advisory concentration. Two additional factors are used. The first is the relative source contribution or RSC. It accounts for the fact that we are usually exposed to chemicals from sources other than drinking water (e.g., in foods and in the air we breathe). The combined exposure from all sources forms the overall dose that may cause toxicity. The relative source contribution normally used by USEPA in deriving lifetime health advisories for threshold constituents is 20%. This means that 20% of the exposure is assumed to come from drinking water and 80% from all other sources combined. The second factor is an additional uncertainty factor, used to provide an extra margin of safety for those chemicals for which limited evidence of cancer risk exists (Class C carcinogens). This uncertainty factor is equal to 10 for Class C carcinogens, and 1 for chemicals in Classes D and E. As stated above, lifetime health advisories are usually not calculated for chemicals in cancer Classes A and B.

With equations [5] and [6], one can calculate health protective water quality goals for threshold toxins from RfD values published in the IRIS database and elsewhere in the literature. For example, acetone is a Class D chemical (no evidence of cancer risk) and has an RfD of 0.10 mg/kg/day. From equation [5], a DWEL of 3.5 mg/l may be calculated. By equation [6], this DWEL may be converted into an expected lifetime-exposure safe limit in drinking water of 0.7 mg/l or 700 ug/L. This and other similarly calculated limits are presented in the tables of this report.

### SELECTING A WATER QUALITY GOAL FROM AMONG AVAILABLE NUMERICAL LIMITS

To protect all applicable beneficial uses, the most protective (lowest), appropriate (per the beneficial use designations and water quality objectives in the *Water Quality Control Plans*) numerical water quality limit should be selected as the beneficial use protective water quality limit for a particular water body and constituent. Due to the rapid evolution of data on the health and environmental effects of chemicals, caution should be observed in selecting from among the various water quality goals to be sure that the most current limits are used. The original literature should be consulted whenever possible to determine the appropriateness and limitations of the water quality limits being considered. Other government agencies, such as the California Department of Health Services, the California Department of Fish and Game, the Office of Environmental Health Hazard Assessment, and the U.S. Environmental Protection Agency may be consulted for up-to-date information.

In some cases, multiple human health-protective numerical limits are available for a particular chemical. A decision must be made as to which of these limits is the most appropriate. In May of 1994, representatives of the State and Regional Water Boards met with toxicologists and other representatives of the DTSC and OEHHA to discuss the use of toxicologic criteria in contaminated site assessment and cleanup. The group agreed to use guidance parallel to that given on page 2-20 of DTSC's Preliminary Endangerment Assessment Guidance Manual (January 1994). When selecting numerical limits from the literature to interpret health based narrative water quality objectives or when selecting criteria for use in health risk assessments, limits should be used in the following hierarchy:

- 1) Cancer potency slope factors and reference doses promulgated into California regulations.
- 2) Cancer potency slope factors and reference doses used to develop environmental criteria promulgated into California regulations. The entirely health-based dose criteria should be used, and not necessarily the resulting risk management environmental concentration criteria (e.g., the RfD rather than the MCL).
- Cancer potency slope factors and reference doses from USEPA's Integrated Risk Information System (IRIS).
- Cancer potency slope factors or reference doses from USEPA's Health Effects Assessment Summary Tables (Health Advisories), the most current edition.

Criteria in the first two categories may be found in the Cal/EPA Toxicity Criteria Database maintained by OEHHA.

It has been common practice to rely on Primary

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MCLs as "enforceable standards" for human health protection from chemicals in water. However, MCLs are designed to apply to water within a drinking water distribution system and at the tap. Care should be taken when relying on Primary MCLs to protect sources of drinking water (groundwater or surface water resources).

A common example of incorrect MCL application is the use of the total trihalomethane (THM) MCL for the protection of groundwater quality from chloroform, bromoform, bromodichloromethane and dibromochloromethane, the four chemicals covered by the term "trihalomethanes." These probable and possible human carcinogens are formed in drinking water by the action of chlorine, used for disinfection, on organic matter present in the raw source water. The total THM Primary MCL of 100 ug/L is 17 to 370 times higher than the one-in-a-million incremental cancer risk estimates for the individual chemicals published by OEHHA and USEPA. USEPA has stated that the MCL for total THMs was based mainly on technologic and economic considerations. Therefore, this drinking water standard is not fully health protective, and does not clearly protect the beneficial use of municipal and domestic supply.

The MCL for total THMs was derived by balancing the benefit provided by the chlorination process—elimination of pathogens in drinking water—with the health threat posed by the trihalomethane byproducts of this process and the cost associated with conversion to non-chlorine disinfection methods. In the case of groundwater protection, this type of cost/benefit balancing—accepting some cancer risk from chloroform and other THMs in order to eliminate the health risk from pathogens and avoid disinfection process conversion costs—is not germane. This water has not been and may not need to be chlorinated for domestic consumption. Therefore, the total THM MCL is not sufficiently protective of the ambient quality of domestic water supply sources.

To ensure that compliance can be ascertained, MCLs are required to be set at or above commonly achievable analytical quantitation limits. In several cases, DHS and USEPA have established MCLs at concentrations higher than health protective levels, where the health-based levels are below readily available analytical quantitation limits. It is clear from the *Statement of Reasons* documents that the intent of

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DHS was to adopt one-in-a-milion cancer risk values for several chlorinated solvents as MCLs if analytical quantitation limits had been lower. Since the adoption of these MCLs, analytical quantitation limits have improved, such that their respective health-based levels can be reliably measured at reasonable cost. The technologic constraint posed by analytical quantitation limits is no longer germane. Therefore, it is no longer reasonable to rely on outdated analytical quantitation limits as substitutes for truly health-based criteria when interpreting the narrative water quality objective for toxicity.

In several cases, Public Health Goals adopted by OEHHA are more stringent than existing Primary MCLs. The intent of the legislation that mandated the adoption of PHGs is to inform DHS when their MCLs are less than fully health-protective. DHS must periodically review their MCLs and revise them to be as close to PHG values as is technologically and economically achievable. Compliance with health-based PHGs, which indicate the probable levels of future MCLs, may be appropriate for protection of water resources for municipal and domestic supply uses.

MCLs are only a subset of the water quality objectives applicable to sources of municipal and domestic supply under most *Basin Plans*. Narrative objectives related to toxicity and general beneficial use protection from chemical constituents are also applicable to these waters under most *Basin Plans*. Due to the constraints discussed above, MCLs that are not fully health protective are not appropriate water quality goals to interpret these objectives. Published health-based limits, such as one-in-a-million incremental cancer risk estimates, are appropriate to interpret these narrative objectives. They are more accurate measures of potential impairment by toxic chemicals of the beneficial use of groundwater and surface water for municipal and domestic supply.

Virtually all Primary MCLs are derived by balancing health effects information with the technologic and economic considerations that are directly related to providing that water to customers through conventional drinking water supply systems. Thus, Primary MCLs are not always reliable indicators of the protection of beneficial uses of ambient groundwaters or surface waters. They may not be appropriate water quality goals to interpret narrative water quality objectives that prevent human toxicity or generally protect bene-

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ficial uses from chemical constituents.

There are additional instances where water quality limits more stringent than MCLs are applied to protect all of the beneficial uses of a water resource. For example, the Regional Water Boards require surface waters to comply with aquatic life protective criteria for metals where these criteria are more stringent than MCLs. Agricultural use protective limits for several constituents, including chloride, are more stringent than MCLs, indicating that agricultural use may be impaired at lower concentrations. Several chemicals cause water to taste or smell bad at concentrations far lower than MCLs. The following are taste and odor thresholds and MCLs (in ug/L) for three common gasoline constituents:

	Taste & Odor	Primary	
·	Threshold	MCL	
Ethylbenzene	29	700	
Toluene	42	150	
Xylene(s)	17	1750	

Water will be rendered unpalatable and beneficial uses will be impaired at concentrations that are significantly below MCLs.

Again, even though the MCL may be an applicable water quality objective for these waters, it may not be the most relevant numerical water quality limit with which to ascertain compliance with all applicable water quality objectives. As such, MCLs may not be sufficiently protective of the most sensitive beneficial use.

As discussed above, the state's Antidegradation Policy requires water quality limits to be set below beneficial use protective concentrations, toward or equal to background levels, when feasible.

### An Example of Beneficial Use Protective Water Quality Limit Selection

Suppose that you are investigating a site where a waste oil tank has leaked into the surrounding soils. Groundwater sampling results indicate that zinc, trichloroethylene (TCE), benzene, and xylene have entered groundwater. You wish to know whether the levels of constituents detected in water samples are of significant concern.

The first step would be to look at the *Water Quality Control Plan* (Basin Plan) for the particular Region in which your site is located. Upon examination of that document, you determine that the beneficial uses designated for groundwater beneath this site are municipal and domestic supply and agricultural supply. No numerical groundwater quality objectives are listed in the Basin Plan for the constituents of concern. However, there are three narrative objectives that appear to be applicable:

Chemical Constituents

Groundwaters shall not contain chemical constituents in concentrations that adversely affect beneficial uses.

At a minimum, groundwaters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs) specified in Title 22 of the California Code of Regulations.

• Tastes and Odors

Groundwaters shall not contain taste- or odorproducing substances in concentrations that cause nuisance or adversely affect beneficial uses.

Toxicity

Groundwaters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life associated with designated beneficial use(s). This objective applies regardless of whether the toxicity is caused by a singled substance or the interactive effect of multiple substances.

Together, these beneficial uses and water quality objectives constitute the *water quality standards* for the chemical constituents in groundwater at the site of your investigation. The next step is to select water quality goals to interpret these narrative objectives. The tables of this *Water Quality Goals* staff report contain an extensive list of such numerical limits.

The chemical constituents objective from the *Basin Plan*, stated above, incorporates by reference California's maximum contaminant levels (MCLs). The Basin Plans do not differentiate between Primary and Secondary MCLs, so both types of limits are applicable. These drinking water standards are:

Zinc	5000 ug/L
TCE	5 ug/L
Benzene	1 ug/L
Xylene	1750 ug/L

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[Note that federal MCLs for benzene (5 ug/L) and xylene (10,000 ug/L) are less stringent than California MCLs.]

This objective also prohibits chemical constituents in concentrations that adversely affect beneficial uses. One of the constituents of concern for our site could adversely affect the use of groundwater for agricultural supply. A numerical limit to protect agricultural water use from zinc is 2000 ug/L. Agricultural use protective numerical limits are not available for the organic solvents. Note that this zinc limit is more stringent than the MCL. Agricultural use of water is not necessarily protected by compliance with MCLs alone.

The second water quality objective stated above requires that water not contain substances that could impart objectionable tastes or odors. Taste- and odorbased (organoleptic) levels include:

- California and federal Secondary MCLs;
- California State Action Levels based on taste and odor;
- USEPA National Ambient Water Quality Criteria based on taste & odor or welfare; and
- Other taste and odor thresholds from the scientific and regulatory literature.

For the constituents of concern, taste- and odor- based numerical limits are:

Zinc	5000 ug/L
TCE	310 ug/L
Benzene	170 ug/L
Xylene	17 ug/L

Note that xylene can make water taste or smell bad at a concentration that is over 100-fold lower than the health-based MCL. [The proposed USEPA Secondary MCL for xylene, at 20 ug/L, was rounded from and is slightly higher than the taste and odor threshold. However, it is only a proposed value.]

The toxicity objective, stated above, prohibits toxic chemicals in water in toxic amounts. Human health-based limits that are derived for drinking water exposures are relevant to the waste oil tank leak situation because humans could experience toxic effects if the chemicals of concern were present in groundwater used for municipal and domestic supply. Health-based National Ambient Water Quality Criteria from USEPA are not relevant, because those limits assume that exposure also occurs through ingestion of contaminated fish and shellfish, not present in groundwater. Relevant health-based limits for zinc include:

USEPA IRIS Reference Dose	2100 ug/L
USEPA Health Advisory	2000 ug/L

IRIS values are usually preferred over health advisories, because they are intended to reflect USEPA's most recent health risk information. In this case, the health advisory was derived from the IRIS reference dose by rounding to one significant figure.

Health-based limits for TCE include:

Primary MCL	5	ug/L
California Public Health Goal	0.8	ug/L
Cal/EPA Cancer Potency Factor	2.3	ug/L
USEPA Health Advisory - cancer	3	ug/L
NAS cancer risk level	1.5	ug/L
Proposition 65 regulatory level	25	ug/L

The MCL is not purely health protective because it was based on quantitation limits using older analytical methods. The Proposition 65 regulatory level is based on the less-appropriate  $10^{-5}$  cancer risk level. All of the remaining limits are based on a  $10^{-6}$  cancer risk level. According to the hierarchy of health-based criteria agreed upon by staff of the Water Boards, DTSC and OEHHA, discussed above, the California-derived limits (the PHG and the Cal/EPA cancer potency factor) are preferred over federal limits for use in California. Both California limits assume exposure through inhalation caused by in-home water use in addition to direct ingestion of water. Both of these limits are from OEHHA, but the PHG is a more recent criterion. If the two California limits were not available, the NAS criterion, from Drinking Water and Health, is far older than the USEPA Health Advisory, and was "based on limited evidence" (as indicated in the footnote in the Water Quality Goals tables).

Relevant health-based values for benzene include:

California Primary MCL	1	ug/L
USEPA Primary MCL	5	ug/L
Draft Calif. Public Health Goal	0.14	ug/L
10-day USEPA Health Advisory	200	ug/L
Cal/EPA Cancer Potency Factor	0.35	ug/L
IRIS Cancer Potency Factor	1	ug/L
USEPA Health Advisory - cancer	1	ug/L
Proposition 65 regulatory level	3.5	ug/L

The USEPA MCL is not purely health protective because it was based on quantitation limits using older

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analytical methods. The Proposition 65 regulatory level is based on the less-appropriate 10<sup>-5</sup> cancer risk level. The 10-day health advisory does not protect against cancer and other health effects associated with potential long-term water use and is, therefore, not relevant to protecting a groundwater resource for existing and future beneficial use. The California MCL may not be purely health protective by comparison to the remaining health-based limits. Of the remaining limits, the PHG is the most recent California-derived value; however, it has not yet been adopted in final form. The Cal/EPA cancer potency factor is the only other California agency derived limit that is based entirely on health effects.

Health-based limits for xylene include:

California Primary MCL	1750 ug/L
USEPA Primary MCL	10,000 ug/L
USEPA MCL Goal	10,000 ug/L
California Public Health Goal	1800 ug/L
USEPA IRIS Reference Dose	14,000 ug/L
USEPA Health Advisory	10,000 ug/L

The California derived limits (MCL and PHG) are virtually identical and are significantly more stringent than any of the USEPA criteria. It is plausible that the reference dose was rounded to one significant figure to derive the remaining USEPA limits.

In summary, appropriate health-based numerical water quality limits for use in interpreting the toxicity objective for the constituents of concern at our site are:

Zinc	2100	ug/L	USEPA IRIS RfD
TCE	0.8	ug/L	Calif. Public Health Goal
Benzene	0.35	ug/L	Cal/EPA Cancer Potency
Xylene	1750	ug/L	California Primary MCL

So far, we have selected water quality goals to interpret each of the applicable narrative water quality objectives for each constituent of concern (in ug/L).

CoC	Water Quality Objective	Goal
Zinc	Chemical Constituents (MCL)	5000
	Chemical Constituents (Ag use)	2000
	Taste and Odor	5000
	Toxicity	2100
TCE	Chemical Constituents (MCL)	5
	Taste and Odor	310
	Toxicity	0.8

Benzene	Chemical Constituents (MCL)	1
	Taste and Odor	170
	Toxicity	0.35
Xylene	Chemical Constituents (MCL)	1750
	Taste and Odor	17
	Toxicity	1750

The most limiting of these goals for each constituent would ensure compliance with all water quality objectives and should protect all beneficial uses. Therefore, the beneficial use protective water quality limits for the constituents of concern at our leaking waste oil tank site are:

Zinc	2000	ug/L	Agricultural Use Limit
TCE	0.8	ug/L	Calif. Public Health Goal
Benzene	0.35	ug/L	Cal/EPA Cancer Potency
Xylene(s)	17	ug/L	Taste & Odor Threshold

Measured concentrations in groundwater which exceed these limits would be considered to violate applicable water quality standards.

The reader is cautioned that these values would apply to groundwater at the hypothetical site in this example, and not necessarily to water bodies in other locations. Water resources at other sites may have different beneficial use designations and water quality objectives.

In the above example, the solvents are not normally found in groundwater. So aquifer-specific background levels are not relevant to beneficial use protection. Where background concentrations (out of the influence of waste management activities at the site) are higher than the limits selected to ascertain compliance with all applicable water quality objectives, the Regional Water Board would not normally require the site owner or operator to improve upon such background conditions. In such cases, the background concentrations are considered to comply with the applicable water quality numerical limits.

In addition, strict application of California's Antidegradation Policy would require that background levels of chemicals in groundwater ("zero" for anthropogenic substances, such as solvents, at most sites) be selected as appropriate water quality limits if some water quality degradation is not found to be consistent with the requirements of that policy, as discussed above. Cleanup of groundwater to meet background levels would be required unless attaining such levels is

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determined to be infeasible. If cleanup levels higher than background are selected, those levels may not exceed applicable water quality standards, i.e., they should not exceed the beneficial use protective water quality limits, as selected above.

### Additive Toxicity Criterion for Multiple Constituents

When multiple constituents have been found in groundwater or surface waters, their combined toxicity should be evaluated. In the absence of scientifically valid data to the contrary, Section 2550.4(g) of the Chapter 15, Article 5 regulations, which is referenced in the State Water Board's Site Investigation and Cleanup Policy, requires that theoretical risks from chemicals found together in a water body "shall be considered additive for all chemicals having similar toxicologic effects or having carcinogenic effects." Some Water Quality Control Plans also require that combined toxicological effects be considered in this manner. This requirement is also found in the California hazardous waste management regulations [Title 22 of CCR, Section 66264.94(f)], and in the USEPA Risk Assessment Guidance for Superfund (RAGS).

The commonly used toxicologic formula for assessing additive risk is:

 $\sum_{i=1}^{n} \frac{[\text{Concentration of Constituent}]_{i}}{[\text{Toxicologic Limit in Water}]_{i}} < 1.0$ 

The concentration of each constituent is divided by its toxicologic limit. The resulting ratios are added for constituents having similar toxicologic effects and, separately, for carcinogens. If such a sum of ratios is less than one, no additive toxicity problem is assumed to exist. If the summation is equal to or greater than one, the combination of chemicals is assumed to present an unacceptable level of health risk.

For our leaking waste oil tank example discussed above, monitoring shows that groundwater quality beneath the site has been degraded by four constituents of concern in the following concentrations:

Zinc	1300	ug/L
TCE	0.6	ug/L
Benzene	0.3	ug/L
Xylene	9	ug/L

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None of these concentrations exceeds beneficial use protective water quality limits.

However, two of these constituents, TCE and benzene, are associated with cancer risk. The Public Health Goal for TCE was established at the one-in-amillion incremental cancer risk level. A one-in-amillion incremental cancer risk level may also be calculated from the Cal/EPA cancer potency factor. These cancer-based health limits are:

TCE	0.8	ug/L
Benzene	0.35	ug/L

Individually, no chemical exceeds its toxicologic limit. However, an additive cancer risk calculation shows:

$$\frac{0.6}{0.8} + \frac{0.3}{0.35} = 1.6$$

The sum of the ratios is greater than unity (>1.0); therefore, the additive toxicity criterion has been violated. The chemicals together present an unacceptable level of toxicity—in this case, cancer risk.

### CLEANUP LEVELS IN WATER

If contaminants are found to impair or threaten the beneficial uses of groundwater or surface water resources, cleanup levels in water must be chosen. To satisfy State Water Board Resolution No. 92-49, *Policies and Procedures for Investigation and Cleanup* and Abatement of Discharges Under Water Code Section 13304, the Antidegradation Policy, and Section 2550.4 of Title 23 of CCR, cleanup levels for constituents in water are to be chosen at or below applicable water quality standards. Water quality numerical limits, selected using the procedures discussed above, may be used to determine that remaining constituents do not exceed these standards. In addition, such cleanup levels must also:

- not result in excessive exposure to sensitive biological receptors;
- not pose a substantial present or potential hazard to human health or the environment;
- not exceed the maximum concentration allowable under applicable statutes or regulations; and
- be the lowest concentration for each individual constituent that is technologically and economically achievable, toward background levels.
   Conventional health and ecological risk assessment

procedures can be used to satisfy the first and second

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of these additional requirements. Feasibility studies provide information that can be used to satisfy the last requirement.

### **CONCLUSION AND STATUS**

This staff report has been developed to provide a uniform method and a convenient source of numerical limits for consistently determining compliance with California's water quality standards. It is referenced for this use in both *Water Quality Control Plans* for the Central Valley Region. This report has been used by the State Water Board and the other Regional Water Boards as a reference for selecting numerical water quality limits. This report has also been referenced in the *Water Quality Control Plan* for the San Francisco Bay Region.

A Compilation of Water Quality Goals will be updated and expanded to account for newly developed numerical water quality information, as needed and as Regional Board staff resources are made available for that effort.

### GLOSSARY

Beneficial Use Protective Water Quality Limit — The most limiting relevant numerical water quality limit for a constituent or parameter of concern in a specific body of groundwater or surface water at a specific site. This limit is chosen to determine compliance with all applicable water quality objectives for the protection of designated beneficial uses. The beneficial use protective water quality limit is selected from among applicable numerical water quality objectives and water quality goals used to interpret narrative water quality objectives. In no case is this limit more stringent than the true background concentration of the constituent of concern.

Beneficial Uses — Uses of surface water and groundwater that must be protected against water quality degradation. Beneficial uses are established in the Water Quality Control Plans. See Water Quality Standards.

Water Quality Criteria — Numerical or narrative limits for constituents or characteristics of water designed to protect specific designated uses of the water under the authority of the federal Clean Water Act. California's water quality criteria are called "water quality objectives." See Water Quality Standards. Water Quality Goal — A numerical water quality limit from the literature used to interpret an applicable narrative water quality objective from a Water Quality Control Plan.

Water Quality Objectives — Numerical or narrative limits for constituents or characteristics of water designed to protect specific designated uses of the water under the authority of the California Porter-Cologne Water Quality Control Act. Water quality objectives are established by the State Water Resources Control Board and the nine Regional Water Quality Control Boards in Water Quality Control Plans. See Water Quality Standards.

Water Quality Standards — Pursuant to the federal Clean Water Act, a combination of the designated beneficial uses of water and criteria (or water quality objectives) to protect those uses. In California, beneficial uses and water quality objectives are adopted by the State Water Resources Control Board and nine Regional Water Quality Control Boards in Water Quality Control Plans. Water Quality Control Plans adopted by the Regional Water Boards are also called Basin Plans. These Plans establish enforceable limits for bodies of surface water and groundwater.

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CONSTITUENT		See Listing(s) Under:	
2-AAF		2-Acetylaminofluorene	53-96-3
A-alpha-C		A-alpha-C	26148-68-5
atrex		Atrazine	1912-24-9
Abamectin		Avermectin B1	65195-55-3
Acenaphthene		Acenaphthene	83-32-9
Acenaphthylene		Acenaphthylene	208-98-8
Acephate	Organic	Acephate	30560-19-1
Acetaldehyde	Organic	Acetaldehyde	75-07-0
Acetaldehyde methylformylhydrazone		Gyromitrin	16568-02-8
Acetamide		Acetamide	60-35-5
2-Acetaminofluorene	Organic	2-Acetylaminofluorene	53-96-3
Acetic acid		Acetic acid	64-19-7
Acetic acid amide		Acetamide	60-35-5
Acetochior	Organic	Acetochlor	34256-82-1
Cetone		Acetone	67-64-1
Acetonitrile		Acetonitrile	75-05-8
Acetophenone		Acetophenone	98-86-2
2-Acetylaminofluorene		2-Acetylaminofluorene	53-96-3
Acetylene		Acetylene	74-86-2
Acifluorfen	Organic	Acifluorfen	62476-59-9
Acrolein	Organic	Acrolein	107-02-8
Acrylamide	Organic	Acrylamide	79-06-1
Acrylic acid	Omanic	Acrylic acid	79-10-7
Acrylonitrile	Organic	Acrylonitrile	107-13-1
ctinomycln D	Organic	Actinomycin D	50-76-0
Advantage		Carbosulian	55285-14-8
NF-2	Organic	AF-2	3688-53-7
ifiatoxins	Oroanic	Aflatoxins	1402-68-2
	Inorganic		7440-22-4
\ <u>\</u>		Aluminum	7429-90-5
Machlor		Alachior	15972-60-8
Alanex		Alachior	15972-60-8
lanine nitrogen mustard		Melphalan Daminozide	148-82-3
Jar			1596-84-5
Ndicarb		Aldicarb	116-06-3
Aldicarb sulfone		Aldicarb sulfone	1646-88-4
Idicarb sulfoxide		Aldicarb sulfoxide	
	Organic		309-00-2
ldrosal	Organic		309-00-2
liette		Fosetyl-al	39148-24-8
likelinity		Alkalinity	
Alkeran		Melphalan	148-82-3
lly	Organic		74223-64-6
Niyi alcohol		Allyl alcohol	107-18-6
Allyl chloride	Organic	3-Chioropropene	107-05-1
-Allyt-1,2-methylenedioxybenzene	Organic		94-59-7
Ilyl trichtoride	Organic	1,2,3-Trichloropropane	96-18-4
liochior	Organic	Alachlor	15972-60-8
litrad	Organic	Estradiol 17B	50-28-2
luminum	Inorganic	Aluminum	7429-90-5
luminum phosphide		Aluminum phosphide	20859-73-8
mber	Orpanic	Triasulturon	82097-50-5
mdro	Organic		67485-29-4
metrex		Ametryn	834-12-8
metryn		Ametryn	834-12-8
metycine		Mitomycin C	50-07-7
mileyane		Chloramben	133-90-4
-Aminoanisole hydrochloride		o-Anisidine hydrochloride	133-90-4
-Amino-anisole river or non-de		o-Anisidine	90-04-0
-Amino-ansole -Aminoanthraquinone			117-79-3
-Aminoanthaquinone		2-Aminoanthraquinone	
		o-Aminoazotoluene	97-56-3
minobenzene	Organic Organic		62-53-3
-Aminobiphenyl		4-Aminobiphenyl	92-67-1
-Aminobutane		n-Butylamine	109-73-9
Amino-alpha-carboline		A-alpha-C	26148-58-5
-Amino-4-chlorobenzene		p-Chloroanlline	106-47-8
minocyclohexane		Cyclohexylamine	108-91-8
-Amino-2,3-dimethylazobenzene		o-Aminoazotoluene	97-56-3
mino-2,4-dimethylbenzene	Organić	2,4-Xylidine	1300-73-8
mino-2,6-dimethylbenzene	Organic	2,6-Xylidine	87-62-7
-Aminodiphenyl		4-Aminobiphenyl	92-67-1
minoethane		Ethylamine	75-04-7
Aminoethanol		Ethanolamine	141-43-5
Amino-9-ethylcarbazole hydrochloride		3-Amino-9-ethylcarbazole hydrochloride	6109-97-3
minomethane		Methylamine	74-89-5
Amino-2-methylanthraquinone		1-Amino-2-methylanthraquinone	82-28-0
Amino-6-methyldipyrido[1,2-a:3',2'-d]-imidazole	Organic		67730-11-4
Amino-3-methylimidazo[4,5-f]quinoline	Organic		76180-96-6
Amino-3-methyl-9H-pyrido-{2,3-b]indole		Me-A-alpha-C	68006-83-7
-Aminonaphthalene	Omenia	2-Methyl-1-nitroanthraquinone	129-15-7

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CONSTITUENT		See Listing(s) Under:	CAS N
-Aminopropane		Isopropylamine	75-31-0
-Aminopyrido[1,2-a:3',2'-d]-Imidazole		Glu-P-2	67730-10-3
-Amino-9H-pyrido(2,3-b)indole		A-elpha-C	26148-68-5
2-Aminotoluene		o-Toluidine	95-53-4
-Aminotoluene hydrochloride		o-Toluidine hydrochloride	636-21-5
-Amino-1,2,4-triazole		Amitrole	61-82-5
mitraz	Organic	Amitraz	33089-61-
	Organic	Amitrole	61-82-5
Ammonia	Inorganic	Ammonia	7664-41-7
Ammonium (NH4*)		Ammonia	7664-41-7
mmonium nitroso-beta-phenylhydroxytamine		Cupterron	135-20-8
Ammonium sulfamate		Ammonium sulfamate	7773-06-0
-Amyl acetate		n-Amyl acetate	
			628-63-7
myl aldehyde		n-Valeraldehyde	110-62-3
niline	Organic		62-53-3
Anisidine		o-Anisidine	90-04-0
-Anisidine hydrochloride	Organic	o-Anisidine hydrochloride	134-29-2
ntergon	Organic	Malelc hydrazide	123-33-1
Inthracene	Organic	Anthracene	120-12-7
ntimony		Antimony	7440-36-0
Intioxyne B		Butylated hydroxyanisole	25013-16-5
polio	Organic		
			74115-24-5
quacide	Organic		85-00-7
racide	Organic		140-57-8
ramite	Organic		140-57-8
rilate		Benomyl	17804-35-2
rsenic	Inorganic		7440-38-2
ursine	Inorganic	Arsine	7784-42-1
	Inorganic		7440-38-2
sbestos		Asbestos	1332-21-4
sH <sub>3</sub>	Inorganic		7784-42-1
ssure	Organic		76578-14-6
sulam	Organic		3337-71-1
tranex	Organic		1912-24-9
trazine		Atrazine	1912-24-9
uramine	Organic	Auramine	492-80-8
venge	Organic	Difenzoquat	43222-48-6
vermectin B1	Organic	Avermectin B1	65195-55-3
zaserine	Organic	Azaserine	115-02-8
zathioprine		Azathioprine	446-86-6
zide, sodium		Sodium azide	26628-22-8
zimethiphos		Cyromazine	
			66215-27-8
		Norflurazon	27314-13-2
zinphos-methyl		Azinphos-methyl	86-50-0
zindine		Ethyleneimine	151-56-4
zoamine scarlet		5-Nitro-o-anisidine	99-59-2
zobenzéne	Organic	Azobenzene	103-33-3
	Inorganic	Boron	7440-42-8
a	Inorganic		7440-39-3
alan	Organic		1861-40-1
anner		Propiconazole	60207-90-1
anvel		Dicamba	
			1918-00-9
aP		Benzo(a)pyrene	50-32-8
aridol		Estradiol 17B	50-28-2
arium	Inorganic		7440-39-3
asagran		Bentazon	25057-89-0
asic lead acetate		Lead subacetate	1335-32-6
asic parafuchsine		C. I. Basic Red 9 monohydrochloride	569-61-9
35(8)		Glufosinate-ammonium	77182-82-2
	Organic		333-41-5
	Organic		114-26-1
ayleton			the second se
	Organic		43121-43-3
aythroid		Baythroid	68359-37-5
		Bis(2-chloroethyl) ether	111-44-4
ЖЕ		Bis(2-chlorolsopropyl) ether	39638-32-9
	Organic	Bis(chloromethyl) ether	542-88-1
	Organic	Bromodichloromethane	75-27-4
	Inorganic		7440-41-7
anefin	Organic		1861-40-1
nfuralin	Organic		
iniate	Organic		1861-40-1
			17804-35-2
enomyl	Organic		17804-35-2
		Phenoxybenzamine	59-96-1
ensylyte		Benlazon	25057-89-0
nsylyte			28249-77-6
nsylyte ntazon nthiocarb		Thiobencarb	20249-11-0
nsylyte ntazon nthiocarb	Organic	Thiobencarb	
nsylyte ntazon nthiocarb nzaldehyde	Organic Organic	Benzaldehyde	100-52-7
nsylyte ntazon nthiocarb nzaldehyde nzamine	Organic Organic Organic	Benzaldehyde	100-52-7 62-53-3
nsylyte	Organic Organic Organic Organic	Benzaldehyde	100-52-7

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Cross Reference Page 2

		See Listing(s) Under:	CAS N
alpha-Benzene hexachloride		alpha-BHC	319-84-6
beta-Benzene hexachloride		beta-BHC	319-85-7
gamma-Benzene hexachloride		gamma-BHC (Lindane)	58-89-9
delta-Benzene hexachloride		technical-BHC	319-88-8
technical-Benzene hexachioride		Chloringled benzenes	608-73-1
Benzenes, chionnated	Organic	Chlorobenzene	68411-46-0
		1,2-Dichlorobenzene	
	ļ		95-50-1
		1,3-Dichlorobenzene	541-73-1
		1,4-Dichlorobenzene	106-46-7
		Dichlorobenzenes	25321-22-6
		Hexachiorobenzene	
		Pentachlorobenzene	608-93-5
		1,2,4,5-Tetrachlorobenzene	95-94-3
		1,2,4-Trichlorobanzene	120-82-1
		1,3,5-Trichlorobenzene	108-70-3
		Trichlorobenzenes	12002-48-1
Benzenes, dichloro-	Organic	1,2-Dichlorobenzene	95-60-1
		1,3-Dichlorobenzene	541-73-1
	-	1,4-Dichlorobenzene	
		Dichlorobenzenes	25321-22-6
Benzenes, Mchloro-	Organic	1,2,4-Trichlorobenzene	
	]	1,3,5-Trichlorobenzene	108-70-3
		Trichlorobenzenes	12002-48-1
Benzldine		Benzidine	92-87-5
Benzo(a)anthracene		Benz(a)anthracene	
1,3-Benzodioxole		Dihydrosafrole	94-58-6
10,11-Benzofluoranthene		Benzo(j)fluoranthene	
3,4-Benzofluoranthene		Benzo(b)fluoranthene	205-99-2
3,9-Benzofluoranthene		Benzo(k)fluoranthene	207-08-9
Benzo(b)fluoranthene		Benzo(b)fluoranthene	205-99-2
Benzo(j)fluoranthene		Benzo(j)fluoranthene	205-82-3
Benzo(k)fluoranthene		Benzo(k)fluoranthene	207-08-9
Benzofuran		Benzofuran	271-89-6
Senzoic adic	Organic	Benzoic adic	65-85-0
Benzo(g,h,i)perylene		Benzo(g,h,i)perylene	191-24-2
12-Benzoperylene		Benzo(g,h,i)perylene	191-24-2
Benzo(a)pyrene	Organic	Benzo(a)pyrene	50-32-8
3,4-Benzopyrene		Benzo(a)pyrane	50-32-8
1,4-Benzoquinone	Organic		106-51-4
Benzotrichloride	Organic Organic	Benzotrichloride	98-07-7
Benzyl butyl phthalate		n-Butyl benzyl phthalate	85-68-7
Benzyl chloride		Benzyl chloride	100-44-7
Benzyl violet 4B		Benzyl violet 4B	1694-09-3
Berylfium	Inorganic	Beryllium	7440-41-7
Beryllium oxide	Inorganic	Beryllium oxide	1304-56-9
Berytlium sulfate	Inorganic	Beryllium sulfate	13510-49-1
Setanal	Organic	Phenmedipham	13684-63-4
3HA	Organic	Butylated hydroxyanisole	25013-16-5
lipha-BHC	Organic	alpha-BHC	319-84-6
eta-BHC	Organic	beta-BHC	319-85-7
amma-BHC	Organic	gamma-BHC (Lindane)	58-89-9
leita-BHC	Organic	deita-BHC	319-86-8
echnical-BHC	Organic	technicel-BHC	608-73-1
Bidrin	Organic		141-66-2
Diofurcina	Organic	Nitrofurazone	59-67-0
Siphenthnin		Biphenthrin	82657-04-3
,1-Biphenyl	Organic	1,1-Biphenyl	92-52-4
-Biphenylamine		4-Aminobiphenyl	92-67-1
Bis(4-aminophenyl)ether		4,4-Diaminodiphenyl ether	101-80-4
Bis-butyl phihalate		Dibutyl phihalate	84-74-2
Bis(2-chloroethoxy) methane		Bis(2-chloroethoxy) methane	111-91-1
Bis(2-chloroethyl) ether		Bis(2-chloroethyl) ether	111-44-4
lis(2-chlorolsopropyl) ether		Bis(2-chloroisopropyl) ether	39638-32-9
lis(chloromethyl) ether		Bis(chloromethyl) ether	542-88-1
Bis(2-chloro-1-methylethyl) ether		Bis(2-chioroisopropyi) ether	39638-32-9
lisclofentezine	Organic		74115-24-5
ls(p-(Dimethylanino)phenyl)methane		4,4'-Methylenebis(N,N-dimethyl)aniline	101-61-1
lis(2-ethylhexyl) phthalate		Di(2-ethylhexyl)phthalate	117-81-7
bis-etnyi phihalate		Diethyl phthalate	84-66-2
lis(4-hydroxyphenyl)propane		Bisphenol A	80-05-7
sis-methyl phthalate		Displicitor A	131-11-3
is-n-octyl phthalate		Directly phthalate	
is (pentabromophenyl) ether		Decabromodiphenyl ether	117-84-0
lisphenol A		Bisphenol A	
livinyi			80-05-7
		1,3-Butadiene	106-99-0
		Lead subacetate	1335-32-6
		Cyanazine	21725-46-2
Bolaro		Acifluorfen	62476-59-9
	1 Oracei e I		28249-77-6

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ONSTITUENT	Category	ViSee Listing(s) Under:	CAS No
P8G		Butylphthalyl butylglycolate	85-70-1
ſ <u></u>		Bromide	_
		Chiorothalonii	1897-45-6
figade		Biphenthrin	82657-04-3
		Bromaci	314-40-9
romate		Bromide	15541-45-4
romine		Browine	7726-95-6
romine cyanide		Cyanogen bromide	506-68-3
romoacetic acid		Bromoacetic acid	79-08-3
omobenzene		Bromobenzene	108-86-1
omochloromethane		Bromochloromethane	74-97-5
Bromo-2-chloro-1,1,1-trifluoroethane		Halothane	151-67-7
omodichloromethane		Bromodichloromethane	75-27-4
Bromodiphenyl ether		4-Bromophenyl phenyl ether	101-55-3
omoethane		Ethyl bromide	74-98-4
omoethene	Organic	Vinyi bromide	593-80-2
omoethylene	Organic	Vinyl bromide	593-60-2
omotorm	Organic	Bromoform	75-25-2
omomethane	Organic	Bromomethane	74-83-9
Bromophenyl phenyl ether	Organic	4-Bromophenyl phenyl ether	101-55-3
omoxynii	Organic	Bromoxynil	1689-84-5
omoxynil octanoate		Bromoxynil octanoate	1689-99-2
IS 40542		Prochloraz	67747-09-5
itachior	Organic	Butachior	23184-66-9
3-Butediene		1,3-Butadiene	106-99-0
itane		Butane	106-97-8
tanedicic acid mono(2,2-dimethyl hydrazide)		Daminozide	1596-84-5
Butanethiol		n-Butyl mercaptan	109-79-5
itanex		Butachtor	23184-66-9
Butanoi		sec-Butyl alcohol	78-92-2
Butanol		n-Butanol	71-36-3
c-Butanol		sec-Butyl alcohol	78-92-2
Bulanol		tert-Butyl alcohol	75-65-0
Butanone		Methyl ethyl ketone	78-93-3
Butenal		trans-Crotonaldehyde	4170-30-3
itiphos		Merphos oxide	78-48-8
Butylbenzene		n-Butylbenzene	104-51-8
Butoxy ethanoi		Ethylene glycol monobutyl ether	111-76-2
itter yellow		4-Dimethylaminoazobenzene	60-11-7
Butyl acetate		n-Bulyi acetate	123-86-4
Butyl acrylate		In-Butyl acrylate	141-32-2
Butyl alcohol		n-Butanol	71-36-3
c-Butyl alcohol		sec-Butyl alcohol	78-92-2
lutyl alcohol		tert-Butyl alcohol	75-65-0
t-Butyl alcohol		tert-Butyl alcohol	75-65-0
Butylamine		n-Butylamine	109-73-9
tylate		Butylate	2008-41-5
tylated hydroxyanisole		Butylated hydroxyanisole	25013-16-5
Butyl benzyl phthalate		n-Butyl benzyl phthalate	85-68-7
ty glycoly buty phthatate		Butylphthalyl butylglycolate	85-70-1
Butyl lactate		n-Butyl lactate	138-22-7
Butyl mercaptan P(butylphenoxy)-1-methylethyl-2-chloroethyl suffite		n-Butyl mercaptan	109-79-5
	Organic	Aramite	140-57-8
tylphthalyl butylglycolate		p-tert-Butyltoluene	85-70-1 98-51-1
a-Butyrolactone		beta-Butyrolactone	96-48-0
	T OIGSING		180-40-0
dmium	Inornanio	Cadmium	7440-43-9
Camphanone		Camphor	484-49-3
mphechior		Toxaphene	8001-35-2
mphor		Camphor	464-49-3
mpogran		Furmecyclox	60568-05-0
prolactem		Caprolactam	105-60-2
ptafol		Captafol	2425061
ptan	Organic		133-06-2
rbaryl	Organic		63-25-2
rbathiin		Carboxin	5234-68-4
rbofuran		Carbofuran	1563-66-2
	Inorganic	Carbon disulfide	75-15-0
rbon bisulfide		Carbon disulfide	75-15-0
rbon bisulfide		Carbon tetrachloride	56-23-5
	Organic		
rbon disulfide rbon tetrachloride rbophenothlon	Organic Organic		786-19-6
rbon disulfide rbon tetrachloride rbophenothlon rbosulfan	Organic		786-19-6 55285-14-8
rbon disulfide rbon tetrachloride rbophenothlon rbosulfan rbosulfan	Organic Organic	Trithion	
rbon disulfide rbon tetrachloride rbophenothlon rbosulfan rbosulfan rboskin rboskine	Organic Organic Organic	Trithion Carbosulfan	55265-14-8
rbon disulfide rbon tetrachloride rbophenothlon rbosulfan rbosulfan	Organic Organic Organic Organic	Trithion Carbosuffan Carbosuf	55285-14-8 5234-68-4
rbon disulfide rbon tetrachloride rbophenothlon rbosulfan rbosulfan rboskin rboskine	Organic Organic Organic Organic	Trithion Carbosuffan Carbosufn Cerbosin Benzoic edic	55285-14-8 5234-68-4 5234-68-4
rbon disulfide rbon tetrachloride rbophenothlon rbosulfan rbosulfan rboxin rboxine rboxybenzene	Organic Organic Organic Organic Organic Organic	Trithion Carbosuffan Carbosufn Cerbosin Benzoic edic	55285-14-8 5234-68-4 5234-68-4 65-85-0

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CONSTITUENT		See Listing(s) Under:	CAS NO
hemform		Maleic hydrazide	123-33-1
hloral	Organic	Chioral	75-87-6
hioral hydrate	Organic	Chloral hydrate	302-17-0
hioramben		Chloramben	133-90-4
hlorambucil		Chlorambucii	305-03-3
hioramine		Chloramine	127-65-1
		Chlorate	12/-05-1
hiorate			
hiordan		Chiordane	57-74-9
hlordane	Organic	Chlordane	57-74-8
hlordecone	Organic	Kepone	143-50-0
hiordimeform	Organic	Chlordimeform	6164-98-3
hlorendic acid		Chlorendic acid	115-28-6
		Chloride	16887-00-6
hloride			
hionmuron-ethyl		Chlorimuron-ethyl	90982-32-4
hiorinated paraffins		Chlorinated paraffins	
hlorinated benzenes	Organic	Chiorinated benzenes	68411-45-0
		Chlorobenzene	108-90-7
,		1,2-Dichlorobenzene	95-50-1
	1	1,3-Dichlorobenzene	541-73-1
	•	1,4-Dichlorobenzene	106-46-7
		Dichlorobenzenes	25321-22-6
	l	Hexachlorobenzene	118-74-1
	1	Pentachiorobenzene	608-93-5
	. 1	1,2,4,5-Tetrachlorobenzene	95-94-3
		1,2,4-Trichlorobenzene	120-82-1
		1,3,5-Trichlorobenzene	108-70-3
	1	Trichlorobenzenes	12002-48-1
hiorinated naphthalenes	Organic	Chlorinated naphthalenes	25586-43-0
		2-Chloronaphthalene	91587
hlorinated paraffins	Organic	Chlorinated paraffins	
hiorinated phenois	Organic	Chiorinated phenois	
		4-Chloro-m-cresol	59-50-7
		4-Chloro-o-cresol	1570-64-5
			15/0-04-5
		6-Chloro-m-cresol	
	1	2-Chlorophenol	95-57-8
		3-Chlorophenol	108-43-0
		4-Chlorophenol	106-48-9
		2,3-Dichlorophenol	576-24-9
· · ·		2,4-Dichlorophenol	120-83-2
		2,5-Dichlorophenol	583-78-8
	ţ	2,6-Dichlorophenol	87-65-0
	1	3,4-Dichlorophenol	95-77-2
		Pentachlorophenol	87-86-5
		2,3,4,6-Tetrachlorophenol	58-90-2
		2,3,5,6-Tetrachlorophenol	935-95-5
	Į	2,4,5-Trichlorophenol	195-95-4
		2,4,6-Trichlorophenol	
niorinated waxes		Chiorinated paraffins	
niorine	Inorganic	Chlorine	7782-50-5
ntorine cyanide	Inorganic	Cyanogen chloride	506-77-4
lorine dioxide	Inorganic	Chlorine dioxide	10049-04-4
Norite	Inorganic		7758-19-2
Noroacetic acid		Chloroacetic acid	79-11-8
lloroalkyl ethers		Bis(2-chlorcethyl) ether	111-91-1
	Organic	Dia/B ablassic control of the	1
	Cigarito	Bis(2-chloroisopropyl) ether	111-44-4
	Cigarite	Bis(chloromethyl) ether	111 <u>-44-4</u> 39638-32-9
		Bis(chloromethyl) ether	
Chloroallyl-diethyldithiocarbamate		Bis(chloromethyl) ether Chloroalkyl ethers Chloromethyl methyl ether	39638-32-9 107-30-2
	Organic	Bis(chloromethyl) ether Chloroalkyl ethers Chloromethyl methyl ether Sulfallate	39638-32-9 107-30-2 95-06-7
Chloroaniline	Organic Organic	Bis(chloromethyl) ether Chloroalkyl ethers Chloromethyl methyl ether Suffallate p-Chloroaniline	39638-32-9 107-30-2 95-06-7 106-47-8
Chloroaniline	Organic Organic Organic	Bis(chloromethyl) ether Chloroalkyl ethers Chloromethyl methyl ether Sulfallate p-Chloroanliine Chlorobenzene	39638-32-9 107-30-2 95-06-7 106-47-8 108-90-7
Chloroaniline Norobenzene Norobenzilate	Organic Organic Organic Organic Organic	Bis(chloromethyl) ether Chloroalkyl ethers Chloromethyl methyl ether Sulfallate p-Chloroanlline Chlorobenzene Ethyl-4,4'-dichlorobenzilate	39638-32-9 107-30-2 95-06-7 106-47-8 108-90-7 510-15-6
Chloroaniline Norobenzene Norobenzilete Norobramomethane	Organic Organic Organic Organic Organic Organic	Bis(chloromethyl) ether Chloroalkyl ethers Chloroanthyl methyl ether Sulfallate p-Chloroantline Chlorobenzene Ethyl-4,4-dichlorobenzilate Bromochloromethane	39638-32-9 107-30-2 95-06-7 106-47-8 108-90-7
Chloroaniline Norobenzene Norobenzilete Norobramomethane	Organic Organic Organic Organic Organic Organic	Bis(chloromethyl) ether Chloroalkyl ethers Chloromethyl methyl ether Sulfallate p-Chloroanlline Chlorobenzene Ethyl-4,4'-dichlorobenzilate	39638-32-9 107-30-2 95-06-7 106-47-8 108-90-7 510-15-6
Chloroeniline korobenzene liorobenzilate liorobromomethane Chlorobutadiene-1,3	Organic Organic Organic Organic Organic Organic Organic	Bis(chloromethyl) ether Chloroalkyl ethers Chloromethyl methyl ether Suffallate p-Chloroaniline Chlorobenzene Ethyl-4,4-dichlorobenzilate Bromochloromethane beta-Chloroprene	39638-32-9 107-30-2 95-06-7 106-47-8 108-90-7 510-15-6 74-97-5
Chloroaniline Norobenzene Itorobenzilate Norobramomethane Norobutadiene-1,3 Itorocamphene	Organic Organic Organic Organic Organic Organic Organic Organic	Bis(chloromethyl) ether Chloroalkyl ethers Chloromethyl methyl ether Sufraliate p-Chlorobenzene Ethyl-4,4'-dichlorobenzilate Bromochloromethane Deta-Chloroprene Toxaphene	39638-32-9 107-30-2 95-06-7 106-47-8 108-90-7 510-15-6 74-97-5 8001-35-2
Chloroaniline Norobenzene Iorobenzilate Iorobramomethane Chlorobutadiene-1,3 Iorocamphene Chloro-m-cresol	Organic Organic Organic Organic Organic Organic Organic Organic Organic	Bis(chloromethyl) ether Chlorogelkyl ethers Chloromethyl methyl ether Sulfallate p-Chlorobenzene Ethyl-4,4-dichlorobenzilate Bromochloromethane beta-Chloroprene Toxaphene 4-Chloro-m-cresol	39638-32-9 107-30-2 95-06-7 106-47-8 108-90-7 510-15-6 74-97-5 8001-35-2 59-50-7
Chloroaniline Norobenzene Iorobenzilate Iorobromomethane Chlorobutadiene-1,3 Iorocamphene Chloro-cresol Chloro-cresol	Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic	Bis(chloromethyl) ether Chlorogalkyl ethers Chloromethyl methyl ether Sulfallate p-Chloroanline Chlorobenzene Ethyl-4,4'-dichlorobenzilate Bromochloromethane beta-Chloroprene Toxaphene 4-Chloro-m-cresol 4-Chloro-c-cresol	39638-32-9 107-30-2 95-06-7 106-47-8 108-90-7 510-15-6 74-97-5 8001-35-2
Chloroeniline korobenzene lorobenzilate lorobramomethane Chlorobutadiene-1,3 lorocamphene Chloro-m-cresol Chloro-o-cresol Chloro-o-cresol Chloro-o-cresol	Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic	Bis(chloromethyl) ether Chloroalkyl ethers Chloromethyl methyl ether Suffallate p-Chloroanlline Chlorobenzene Ethyl-4,4-dichlorobenzilate Bormochloromethane beta-Chloroprene Toxaphene 4-Chloro-a-cresol 4-Chloro-a-cresol 6-Chloro-m-cresol	39638-32-9 107-30-2 95-06-7 106-47-8 108-90-7 510-15-6 74-97-5 8001-35-2 59-50-7 1570-64-5
Chloroeniline Norobenzene Itorobenzinate Itorobenzinate Itorobenzinate Itorobenzinate Itorobenzinate Itorocamphene Chloro-m-cresol Chloro-cresol Chloro-cresol Chloro-m-cresol	Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic	Bis(chloromethyl) ether Chloroalkyl ethers Chloroalkyl methyl ether Sutraliae p-Chlorobenzene Ethyl-4,4-dichlorobenzitate Bromochloromethane beta-Chloromethane beta-Chloromethane 4-Chloro-m-cresol 4-Chloro-m-cresol 4-Chloro-m-cresol	39638-32-9 107-30-2 95-06-7 106-47-8 108-90-7 510-15-6 74-97-5 8001-35-2 59-50-7 1570-64-5 59-50-7
Chloroeniline Aorobenzene Iorobenziete Iorobenziete Iorobenziete Iorobenziete Iorobenziete Iorobenziete Iorobenziete Iorobenziete Iorobenzeite Iorob	Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic	Bis(chloromethyl) ether Chloroalkyl ethers Chloromethyl methyl ether Suffallate p-Chloroanlline Chlorobenzene Ethyl-4,4-dichlorobenzilate Bormochloromethane beta-Chloroprene Toxaphene 4-Chloro-a-cresol 4-Chloro-a-cresol 6-Chloro-m-cresol	39638-32-9 107-30-2 95-06-7 106-47-8 108-90-7 510-15-6 74-97-5 8001-35-2 59-50-7 1570-64-5
Chloroeniline lorobenzene lorobenzitate lorobromomethane Chlorobutadiene-1,3 lorocamphene Chloro-cresol Chloro-cresol Chloro-cresol Chloro-cresol Chloro-cresol Chloro-cresol	Organic Organic	Bis(chloromethyl) ether Chloroalkyl ethers Chloroalkyl methyl ether Sutraliae p-Chlorobenzene Ethyl-4,4-dichlorobenzitate Bromochloromethane beta-Chloromethane beta-Chloromethane 4-Chloro-m-cresol 4-Chloro-m-cresol 4-Chloro-m-cresol	39638-32-9 107-30-2 95-06-7 106-47-8 108-90-7 510-15-6 74-97-5 8001-35-2 59-50-7 1570-64-5 59-50-7
Chloroaniline Norobenzene Itorobenzilate Itorobramomethane Chlorobutediene-1,3 Itorocamphene Chloro-dresol Chloro-dresol Chloro-dresol Chloro-dresol Chloro-dresol Chloro-dresol Chloro-dresol Chloro-3,4-diaminobenzene	Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic	Bis(chloromethyl) ether Chloroalkyl ethers Chloromethyl methyl ether p-Chloroanline Chlorobenzene Ethyl-4.4-dichlorobenzilate Bromochloromethane beta-Chloroprene Toxaphene 4-Chloro-cresol 4-Chloro-cresol 4-Chloro-cresol 4-Chloro-cresol 4-Chloro-cresol 4-Chloro-cresol 4-Chloro-cresol 4-Chloro-cresol 4-Chloro-cresol 4-Chloro-cresol	39638-32-9 107-30-2 95-06-7 106-47-8 108-90-7 510-15-6 74-97-5 8001-35-2 59-50-7 1570-64-5 59-50-7 1570-64-5 95-63-0
Chloroaniline Norobenzene Norobenziete Norobenziete Disorbermomethane Chlorobutadiene-1,3 Iorocamphene Chloro-cresol Chloro-cresol Chloro-cresol Chloro-cresol Chloro-cresol Chloro-cresol Chloro-cresol Chloro-cresol Chloro-cresol Chloro-dresol Chloro-dresol Chloro-dresol Chloro-dresol	Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic	Bis(chloromethyl) ether Chloroalkyl ethers Chloromethyl methyl ether Suffallate p-Chlorobenzene Ethyl-4,4'-dichlorobenzilate Bromochloromethane beta-Chloroprene Toxaphene 4-Chloro-n-cresol 4-Chloro-n-cresol 4-Chloro-n-cresol 4-Chloro-n-cresol 4-Chloro-o-phenylenediamine Dibromochloromethane	39638-32-9 107-30-2 95-06-7 106-47-8 108-90-7 510-15-6 74-97-5 8001-35-2 59-50-7 1570-64-5 59-50-7 1570-64-5 95-63-0 124-48-1
Chloroeniline Norobenzene Norobenziete Norobramomethane Chlorobutadiene-1,3 Torocamphene Chloro-m-cresol Chloro-m-cresol Chloro-m-cresol Chlorocresol Chlorocresol Chlorocresol Chlorocresol Chlorocresol Chlorocresol Chlorocresol Chlorocresol Chlorocresol Chlorocresol Chlorocresol Chlorocresol Chlorocresol Chlorocresol Chlorocresol Chlorocresol Chlorocresol Chlorocresol Chlorocresol	Organic Organic	Bis(chloromethyl) ether Chloroalkyl ethers Chloroalkyl methyl ether Sutrallate p-Chloroaniline Chlorobenzene Ethyl-4,4'-dichlorobenzilate Bromochloromethane beta-Chloromethane beta-Chloromethane -Chloro-m-cresol 4-Chloro-m-cresol 4-Chloro-m-cresol 4-Chloro-m-cresol 4-Chloro-m-cresol 4-Chloro-m-cresol 4-Chloro-o-cresol 4-Chloro-o-cresol 4-Chloro-o-cresol 4-Chloro-o-cresol Epichloromethane Epichlorohoromethane	39638-32-9 107-30-2 95-06-7 106-47-8 108-90-7 510-15-6 74-97-5 8001-35-2 59-50-7 1570-64-5 59-50-7 1570-64-5 95-83-0 1224-8-1 106-89-8
Chloroeniline Norobenzene Itorobenzinae Itorobenzinae Itorobenzinae Itorobenzinae Itorobenzinae Itorocamphene Chloro-m-cresol Chloro-m-cresol Chloro-m-cresol Chloro-m-cresol Chloro-m-cresol Chloro-m-cresol Chloro-s-cresol Chloro-s-cresol Chloro-s-cresol Chloro-s-cresol Itorodibromomethane Itorodibromomethane Itorodibromomethane Itoroethane	Organic Organic	Bis(chloromethyl) ether Chloroalkyl ethers Chloroalkyl methyl ether Sutraliate p-Chlorobenzene Ethyl-4,4-dichlorobenzilate Bromochloromethane beta-Chloro-moresol 4-Chloro-moresol 4-Chloro-moresol 4-Chloro-moresol 4-Chloro-moresol 4-Chloro-moresol 4-Chloro-cresol 4	39638-32-9 107-30-2 95-06-7 108-47-8 108-90-7 510-15-6 74-97-5 8001-35-2 59-50-7 1570-64-5 95-83-0 124-48-1 106-69-8 75-00-3
Chloroaniline korobenzene lorobramomethane Chloro-cresol Chloro-cresol Chloro-cresol Chloro-cresol Chloro-cresol Chloro-cresol Chloro-cresol Chloro-secol Chloro-cresol Chloro-secol Chloro-cresol Chloro-secol Chloro-cresol Chloro-c	Organic Organic	Bis(chloromethyl) ether Chloroalkyl ethers Chloromethyl methyl ether p-Chloroanlline Chlorobenzene Ethyl-4.4-dichlorobenzilate Bromochloromethane beta-Chloroprene Toxaphene 4-Chloro-m-cresol 4-Chloro-m-cresol 4-Chloro-m-cresol 4-Chloro-m-cresol 4-Chloro-m-cresol 4-Chloro-c-cresol 4-Chloro-o-cresol 4-Chloro-o-phenylenediamine Dibromochloromethane Epichlorohydrin Chloroethane Vinyl chloride	39638-32-9 107-30-2 95-06-7 108-47-8 108-90-7 510-15-6 74-97-5 8001-35-2 59-50-7 1570-64-5 59-50-7 1570-64-5 95-83-0 124-48-1 106-89-8 75-00-3 75-01-4
Chloroaniline korobenzene lorobramomethane Chloro-cresol Chloro-cresol Chloro-cresol Chloro-cresol Chloro-cresol Chloro-cresol Chloro-cresol Chloro-secol Chloro-cresol Chloro-secol Chloro-cresol Chloro-secol Chloro-cresol Chloro-c	Organic Organic	Bis(chloromethyl) ether Chloroalkyl ethers Chloroalkyl methyl ether Sutraliate p-Chlorobenzene Ethyl-4,4-dichlorobenzilate Bromochloromethane beta-Chloro-moresol 4-Chloro-moresol 4-Chloro-moresol 4-Chloro-moresol 4-Chloro-moresol 4-Chloro-moresol 4-Chloro-cresol 4	39638-32-9 107-30-2 95-06-7 108-47-8 108-90-7 510-15-6 74-97-5 8001-35-2 59-50-7 1570-64-5 95-83-0 124-48-1 106-69-8 75-00-3
Chloroaniline Norobenzene Norobenziele Norobenziele Norobenziele Norobenziele Norobenziele Norobenzene Chlorobenzene Chlorobenzene Chlorobenzene Chlorobenzene Chlorobenzene Chlorobenzene Chlorobenzene Norobenzene Norobenze	Organic Organic	Bis(chloromethyl) ether Chloroalkyl ethers Chloromethyl methyl ether Sutraliate p-Chlorobenzene Ethyl-4,4'-dichlorobenzilate Bromochloromethane beta-Chloroprene Toxsphene 4-Chloro-n-cresol 4-Chloro-n-cresol 4-Chloro-n-cresol 4-Chloro-n-cresol 4-Chloro-o-phenylenediamine Dibromochloromethane Epichlorohydrin Chloroethane Phenesterin	39638-32-9 107-30-2 95-06-7 108-90-7 510-15-6 74-97-5 8001-35-2 59-50-7 1570-64-5 59-50-7 1570-64-5 95-83-0 124-48-1 106-89-8 75-00-3 75-01-4 3546109
Chloroallyl-diethyldithiocarbamate Chloroaniline Norobenzane Norobenzilate Norobromomethane Chlorobutadiene-1,3 Itorocamphene Chloro-m-cresol Chloro-o-cresol Chloro-m-cresol Chloro-m-cresol Chloro-a-cresol Chloro-3,4-diaminobenzene Noroethane Chloro-2,3-epoxypropane Noroethane Noroethane Noroethane Noroethylaminobenzeneacatate Noroethylaminobenzeneacatate	Organic Organic	Bis(chloromethyl) ether Chloroalkyl ethers Chloroalkyl methyl ether Sutraliate p-Chloroaniline Chlorobenzene Ethyl-4,4'-dichlorobenzilate Bromochloromethane beta-Chloromethane beta-Chloromethane Deta-Chloro-n-cresol 4-Chloro-n-cre	39638-32-9 107-30-2 95-06-7 106-47-8 108-90-7 510-15-6 74-97-5 8001-35-2 59-50-7 1570-64-5 95-83-0 122-48-1 106-89-8 75-01-4 3546109 75-01-4
Chloroaniline Norobenzene Ilorobenzinae Diorobramomethane Chlorobutediene-1,3 Ilorocamphene Chloro-m-cresol Chloro-m-cresol Chlorocresol Chlorocresol Chlorocresol Chlorocresol Chlorocresol Chlorocresol Chlorocresol Chlorocresol Chlorocresol Chlorocresol Chlorocresol Chlorocresol Chlorocresol Chlorocresol Chlorocresol Chlorocresol Chlorocresol Chloro-cresol C	Organic Organic	Bis(chloromethyl) ether Chloroalkyl ethers Chloroalkyl methyl ether Sutrallate p-Chlorobenzene Ethyl-4,4-dichlorobenzitate Bromochloromethane beta-Chloromethane beta-Chloromethane 6-Chloro-m-cresol 4-Chloro-m-cresol 4-Chloro-m-cresol 4-Chloro-c-c-chloro-c-cresol 4-Chloro-c-cresol 4-Chloro-c-c-chloro-c-c-chloro-c-c	39638-32-9 107-30-2 95-06-7 106-47-8 108-90-7 510-15-6 74-97-5 8001-35-2 59-50-7 1570-64-5 95-83-0 124-48-1 106-89-8 75-01-4 3546109 75-01-4 16672-87-0
Chloroaniline Norobenzene Norobenziete Norobenziete Norobramomethane Chlorobutadiene-1,3 torocamphene Chloro-orresol Chloro-orresol Chloro-orresol Chloro-o-cresol Chloro-o-cresol Chloro-o-cresol Chloro-o-cresol Chloro-o-cresol Chloro-o-cresol Chloro-o-cresol Chloro-o-cresol Chloro-2,3-epoxypropane Noroethane Noroethane Noroethane Noroethane Noroethane	Organic Organic	Bis(chloromethyl) ether Chloroalkyl ethers Chloroalkyl methyl ether Sutraliate p-Chloroaniline Chlorobenzene Ethyl-4,4'-dichlorobenzilate Bromochloromethane beta-Chloromethane beta-Chloromethane Deta-Chloro-n-cresol 4-Chloro-n-cre	39638-32-9 107-30-2 95-06-7 106-47-8 108-90-7 510-15-6 74-97-5 8001-35-2 59-50-7 1570-64-5 95-83-0 122-48-1 106-89-8 75-01-4 3546109 75-01-4

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CONSTITUENT	Category	See Listing(s) Under:	CAS No
1-Chlorolsobutene		Dimethylvinylchloride	513-37-1
3-Chloroisobutylene		3-Chloro-2-methylpropene	563-47-3
Chloromethane		Chloromethane	74-87-3
Chloromethoxymethane		Chloromethyl methyl ether	107-30-2
Chloromethyl ether		Bis(chloromethyl) ether	<u>542-88-1</u>
Chloromethyl methyl ether		Chloromethyl methyl ether	107-30-2
4-Chloro-2-methylphenol		4-Chioro-o-cresol	1570-64-5
4-Chloro-3-methylphenol	Organic	4-Chloro-m-cresol	59-50-7
5-Chloro-3-methylphenol	Organic	6-Chloro-m-cresol	·
1-Chloro-2-methylpropene	Organic	Dimethylvinylchloride	513-37-1
3-Chloro-2-melhylpropene		3-Chloro-2-methylpropene	563-47-3
2-Chloronaphthalene	Organic	2-Chloronaphthalene	91587
beta-Chloronaphinaiene	Organic	2-Chloronaphthaiene	91587
2-Chlorophenol	Organic	2-Chiorophenol	95-57-8
3-Chlorophenol	Organic	3-Chlorophenol	108-43-0
4-Chlorophenol	Organic	4-Chlorophenol	106-48-9
m-Chlorophenol	Organic	3-Chiorophenol	108-43-0
o-Chlorophenol	Organic	2-Chlorophenol	95-57-8
p-Chiorophenol	Organic	4-Chlorophenol	106-48-9
4-Chloro-o-phenylenediamine		4-Chloro-o-phenylenediamine	95-83-0
Chlorophenylmethane		Benzyl chloride	100-44-7
Chloropicrin		Chloropicrin	76-06-2
beta-Chloroprene		beta-Chloroprene	
3-Chloropropene		3-Chloropropene	107-05-1
Chloropropylene		Epichlorohydrin	106-89-8
Chlorothatonil		Chlorothaloni	1897-45-6
2-Chlorotoluene		2-Chiorotoluene	95-49-8
4-Chiorotojuene		4-Chlorotoluene	106-43-4
		Benzyl chloride	100-44-7
alpha-Chiorotoluene		2-Chiorotoluene	95-49-8
o-Chlorotoluene		4-Chlorotoluene	106-43-4
		p-Chloro-o-toluidine	95-69-2
D-Chloro-o-toluidine		Chlorozotocin	54749-90-5
Chlorozotocin		Chlorpropham	101-21-3
Chlorpropham			
Chiorpyrifos		Chlorpyrifos	2921-88-2
Chlorsulfuron		Chlorsulfuron	64902-72-3
Chromium (III)		Chromium (III)	16065-83-1
Chromium (VI)		Chromium (VI)	7440-47-3
Chromium, hexavalent		Chromium (VI)	7440-47-3
Chromium (total)		Chromium (total)	7440-47-3
Chromium, trivalent		Chromium (III)	16065-83-1
Chrysanthemumic acid		Dimethrin	70-38-2
Chrysazin		Dantron	117-10-2
Chrysene		Chrysene	218-01-9
C. 1. Basic Red 9 monohydrochloride		C. I. Basic Red 9 monohydrochloride	569-61-9
C.I. disperse orange 11		1-Amino-2-methylanthraquinone	82-28-0
Cinnamyl anthranilate		Cinnamyl anthranilate	87-29-6
		Chlorpropham	101-21-3
		Chloride	16887-00-6
2b	Inorganic	Chlorine	7782-50-5
	Inorganic	Chlorine dioxide	10049-04-4
	Inorganic	Chlorite	7758-19-2
XO3	Inorganic		
204		Perchlorate	
	Organic		74115-24-5
		Chloromethyl methyl ether	107-30-2
CN'	Inorganic		57-12-5
Co	Inorganic		7440-48-4
Cobalt	Inorganic		7440-48-4
Cobra		Lactofen	77501-63-4
Color	Inorganic		
Conductivity		Specific conductance (EC)	
Contraven		Terbufos	13071-79-9
Copper	Inorganic		7440-50-8
Sopper cyanide		Copper cyanide	544-92-3
Corrosivity		Corrosivity	
Cotoron		Fluometuron	2164-17-2
Cottonex		Fluometuron	2164-17-2
Cournadin		Warfarin	81-81-2
coumain		Warrann	81-81-2
Counter		Terbufos	13071-79-9
Coxistat		Nitrofurazone	59-87-0
<u>и                                    </u>		Chromium (total)	7440-47-3
5r ((1))		Chromium (II)	16065-83-1
2r (VI)		Chromium (VI)	7440-47-3
-Cresidine		p-Cresidine	120-71-8
n-Cresol		m-Cresol	108-39-4
-Cresol	Organic	o-Cresol	95-48-7
o-Cresol		p-Cresol	106-44-5
	0		4040.04.0
Crisazina		Atrazine	1912-24-9

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		See Listing(s) Under:	CAS NO
Crotaline		Monocrotaline	315-22-0
rans-Crotonaldehyde	Organic	trans-Crotonaldehyde	4170-30-3
252	Inorganic	Carbon disulfide	75-15-0
	Inorganic		7440-50-8
Cumene		Cumene	98-82-8
		Cupferron	135-20-6
		Copper cyanide	
Cupricin			544-92-3
Cuprous cyanide		Copper cyanide	544-92-3
Cutlasa		Flurprimidol	56425-91-3
Cyanazine	Organic	Cyanazine	21725-46-2
Cyanide	inorganic	Cyanide	57-12-5
Cyanide, copper		Copper cyanide	544-92-3
Cyanide, potassium		Potassium cvanide	151-50-8
	looroanio	Silver cyanide	506-64-9
Cyanide, silver			
Cyanide, sodium		Sodium cyanide	143-33-9
Cyanide, zinc		Zinc cyanide	557-21-1
Cyanoethylene		Acrylonitrile	107-13-1
Cyanogen	Organic	Cyanogen	460-19-5
Cyanogen bromide	Inorganic	Cyanogen bromide	506-68-3
Cyanogen chloride		Cyanogen chloride	506-77-4
Cyanomethane		Acetonitrile	75-05-8
-Cyanopropene		Methacrytonitrile	126-98-7
Cyclohexane		Cyclohexane	110-82-7
Cyclohexanol		Cyclohexanol	108-93-0
Cyclohexanone	Organie	Cyclohexanone	108-94-1
Cyclohexene		Cyclohexene	110-83-8
Cyclohexylamine		Cyclohexylamine	108-91-8
Cyclonite		RDX (Cyclonite)	121-82-4
Cyclopentadiene		Cyclopentadiene	542-92-7
Cyclophosphamide		Cyclophosphamide	50-18-0
Cyclotetramethylene tetranitramine	Organic		2691-41-0
Cyfluthrin	Organic	Baythroid	68359-37-5
Cygon		Dimethoate	60-51-5
Cyhaiothrin		Cyhalothrin	68085-85-8
			52315-07-8
2ypermethrin		Cypermethrin	
Cyromazine		Cyromazine	66215-27-8
Cythion	Organic	Malathion	121-75-5
4-D	Organic	2,4-D	94-75-7
Dacarbazine	Organic	Dacarbazine	4342034
Daconil		Chlorothalonil	1897-45-6
		Dacthal (DCPA)	1861-32-1
Dacthal (DCPA)			
Dactinomycin		Actinomycin D	50-76-0
Dalapon		Dalapon	75-99-0
Daminozide	Organic	Daminozide	1596-84-5
Danitol	Organic	Danitol	39515-41-8
Dantron	Organic	Dantron	117-10-2
Dazide		Daminozide	1596-84-5
08CP		Dibromochloropropane (DBCP)	96-12-8
08DPE		Decabromodiphenyl ether	1163-19-5
)BNA		N-Nitrosodi-n-butylamine	924-16-3
4-D butyric acid	Organic	4-(2,4-Dichlorophenoxy)butyric acid	94-82-6
1-DCA		1,1-Dichloroethane	75-34-3
, ·			
2.004	Organia	1 2-Dichloroethane	107.06.2
2-DCA		1,2-Dichloroethane	107-06-2
СВ	Organic	3,3'-Dichlorobenzidine	91-94-1
-DCB	Organic Organic	3,3'-Dichlorobenzidine 1,2-Dichlorobenzene	91-94-1
CB	Organic Organic Organic	3,3-Dichlorobenzidine 1,2-Dichlorobenzene 1,4-Dichlorobenzene	91-94-1 95-50-1 106-46-7
-DCB	Organic Organic Organic Organic	3,3-Dichlorobenzidine 1,2-Dichlorobenzene 1,4-Dichlorobenzene 1,1-Dichlorobenzene 1,1-Dichlorocethylene	91-94-1
CB	Organic Organic Organic Organic	3,3-Dichlorobenzidine 1,2-Dichlorobenzene 1,4-Dichlorobenzene	91-94-1 95-50-1 106-46-7
CB -DCB -DCB -DCB -DCE -1-DCE 	Organic Organic Organic Organic Organic Organic	3,3-Dichlorobenzidine 1,2-Dichlorobenzene 1,4-Dichlorobenzene 1,1-Dichloroethylene cis-1,2-Dichloroethylene	91-94-1 95-50-1 106-46-7 75-35-4 156-59-2
CB -DCB -DCB 1-DCE s1,2-DCE ans-1,2-DCE ans-1,2-DCE	Organic Organic Organic Organic Organic Organic Organic	3,3-Dichlorobenzidine 1,2-Dichlorobenzene 1,4-Dichlorobenzene 1,1-Dichloroethylene cis-1,2-Dichloroethylene trans-1,2-Dichloroethylene	91-94-1 95-50-1 106-46-7 75-35-4 156-59-2 156-80-5
CB -DCB -DCB -DCE s-1,2-DCE ans-1,2-DCE ans-1,2-DCE CPA	Organic Organic Organic Organic Organic Organic Organic Organic Organic	3,3-Dichlorobenzldine 1,2-Dichlorobenzene 1,4-Dichlorobenzene 1,1-Dichlorobenylene cis-1,2-Dichloroethylene trans-1,2-Dichloroethylene Dacthal (DCPA)	91-94-1 95-50-1 106-46-7 75-35-4 156-59-2 156-60-5 1861-32-1
CB -DCB -DCB -DCB .1-DCE is-1,2-DCE ens-1,2-DCE CPA 	Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic	3,3-Dichlorobenzldine 1,2-Dichlorobenzene 1,4-Dichlorobenzene 1,1-Dichloroethylene cis-1,2-Dichloroethylene trans-1,2-Dichloroethylene Dacthal (DCPA) Ponceau MC	91-94-1 95-50-1 106-46-7 75-35-4 156-59-2 156-60-5 1861-32-1 3761-53-3
CCB           -DCB           -DCE           is-1,2-DCE           ens-1,2-DCE           CPA           S&C Red No. 5           S&C Red No. 9	Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic	3,3-Dichlorobenzidine 1,2-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dichlorobenzene 1,1-Dichloroethylene cls-1,2-Dichloroethylene trans-1,2-Dichloroethylene Dacthal (DCPA) Ponceau MC D&C Red No. 9	91-94-1 95-50-1 106-46-7 75-35-4 156-59-2 156-60-5 1861-32-1 3761-53-3 2092-66-0
CB -DCB -DCB -DCB .1-DCE is-1,2-DCE ens-1,2-DCE CPA 	Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic	3,3-Dichlorobenzidine 1,2-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dichlorobenzene 1,1-Dichloroethylene cis-1,2-Dichloroethylene Dacthal (DCPA) Ponceau MC D&C Red No. 9 1,2-Dichloropropane	91-94-1 95-50-1 106-46-7 75-35-4 156-59-2 156-60-5 1861-32-1 3761-53 2092-66-0 78-87-5
CB DCB DCB 1-DCE s-1,2-DCE ens-1,2-DCE CPA SC Red No. 5 SC Red No. 9	Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic	3,3-Dichlorobenzidine 1,2-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dichlorobenzene 1,1-Dichloroethylene cls-1,2-Dichloroethylene trans-1,2-Dichloroethylene Dacthal (DCPA) Ponceau MC D&C Red No. 9	91-94-1 95-50-1 106-46-7 75-35-4 156-59-2 156-60-5 1861-32-1 3761-53-3 2092-66-0
CB -DCB -DCB -DCB -DCB s.1,2-DCE ens-1,2-DCE CPA &C Red No. 5 &C Red No. 9 -D Mixture	Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic	3.3-Dichlorobenzidine 1.2-Dichlorobenzene 1.4-Dichlorobenzene 1.1-Dichlorobenyene is-1.2-Dichloroethylene Dacthal (DCPA) Ponceau MC D&C Red No. 9 1.2-Dichloropropane 1.3-Dichloropropane 1.3-Dichloropropane	91-94-1 95-50-1 106-46-7 75-35-4 156-59-2 156-60-5 1861-32-1 3761-53-3 2092-66-0 78-87-5 542-75-6
CB -DCB -DCB -DCB -DCE -DCE 	Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic	3,3-Dichlorobenzldine 1,2-Dichlorobenzene 1,4-Dichlorobenzene 1,1-Dichloroethylene cis-1,2-Dichloroethylene Dacthal (DCPA) Ponceau MC D&C Red No. 9 1,2-Dichloropropane 1,3-Dichloropropane DBDD	91-94-1 95-50-1 106-46-7 75-35-4 156-59-2 156-50-5 1861-32-1 3761-53-3 2092-56-0 78-87-5 542-75-6 72-54-8
CB DCB DCB .1-DCE s-1,2-DCE ens-1,2-DCE CPA SC Red No. 5 SC Red No. 5 SC Red No. 9 -D Mixture DD 4-DDD	Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic	3,3-Dichlorobenzidine 1,2-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dichloroethylene cls-1,2-Dichloroethylene cls-1,2-Dichloroethylene Dacthal (DCPA) Ponceau MC D&C Red No. 9 1,2-Dichloropropane 1,3-Dichloropropane DDD DDD DDD DDD DDD	91-94-1 95-50-1 106-46-7 75-35-4 156-59-2 156-59-2 156-60-5 1861-32-1 3761-53-3 2092-56-0 78-87-5 542-75-6 72-54-8 72-54-8
CB DCB DCB .1-DCE s-1,2-DCE ens-1,2-DCE CPA 8C Red No. 5 8C Red No. 9 -D Mixture DD 4-DDD DE	Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic	3.3-Dichlorobenzidine 1.4-Dichlorobenzene 1.4-Dichlorobenzene 1.4-Dichlorobenzene 1.4-Dichloroethylene cis-1.2-Dichloroethylene trans-1.2-Dichloroethylene Dacthal (DCPA) Ponceau MC D&C Red No. 9 1.2-Dichloropropane 1.3-Dichloropropane 1.3-Dichloropropane DDD DDD DDD DDE	91-94-1 95-50-1 106-46-7 75-35-4 156-59-2 156-50-5 1861-32-1 3761-53-3 2092-66-0 78-87-5 542-75-6 72-54-8 72-54-8 72-55-9
CB -DCB -DCB -DCB -1-DCE s-1,2-DCE ens-1,2-DCE CPA 	Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic	3,3-Dichlorobenzidine 1,2-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dichlorobenzene 1,1-Dichloroethylene cis-1,2-Dichloroethylene Dactnal (DCPA) Ponceau MC DB&C Red No. 9 1,2-Dichloropropene 1,3-Dichloropropene 1,3-Dichloropropene DDD DD DD DD DD DD DD DD DDE DDE DDE	91-94-1 95-50-1 106-46-7 75-35-4 156-59-2 156-59-2 156-60-5 1861-32-1 3761-53-3 2092-66-0 78-87-5 542-75-6 72-54-8 72-55-9 72-55-9
CB           -DCB           -DCB           -DCB           i-DCE           sis-1,2-DCE           ans-1,2-DCE           2000           2	Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic	3,3-Dichlorobenzidine 1,2-Dichlorobenzene 1,4-Dichlorobenzene 1,1-Dichlorobenzene 1,1-Dichloroethylene 0eathal (DCPA) Ponceau MC D&C Red No. 9 1,2-Dichloropropane 1,3-Dichloropropane 1,3-Dichloropropane DDD DDD DDD DDD DDE DDE DDE DDE DDE DD	91-94-1 95-50-1 106-46-7 75-35-4 158-59-2 156-69-2 156-60-5 1861-32-1 3761-53-3 2092-66-0 78-87-5 542-75-6 72-54-8 72-55-9 72-55-9 72-55-9 50-29-3
CCB           -DCB           -DCB           -DCB           1-DCE           is-1,2-DCE           ans-1,2-DCE           CPA           S&C Red No. 5           S&C Red No. 5           S&C Red No. 9           -D Mixture           DD           .4'-DDD           DE           .4'-DDE	Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic	3,3-Dichlorobenzidine 1,2-Dichlorobenzene 1,4-Dichlorobenzene 1,1-Dichlorobenzene 1,1-Dichloroethylene 0eathal (DCPA) Ponceau MC D&C Red No. 9 1,2-Dichloropropane 1,3-Dichloropropane 1,3-Dichloropropane DDD DDD DDD DDD DDE DDE DDE DDE DDE DD	91-94-1 95-50-1 106-46-7 75-35-4 156-59-2 156-59-2 156-60-5 186(1-32-1 376(1-53-3 2092-66-0 76-87-5 542-75-6 72-54-8 72-55-9 72-55-9
DCB           -DCB           -DCE           is-1,2-DCE           ens-1,2-DCE           DCPA           SQC Red No. 5           SQC Red No. 5           DD           /-D DD           DD           /4'-DDD           DE           /4'-DDE           DT           /4'-DDT	Organic Organic	3,3-Dichlorobenzidine 1,2-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dichlorobenzene 1,1-Dichloroethylene cis-1,2-Dichloroethylene Dacthal (DCPA) Ponceau MC D&C Red No. 9 1,2-Dichloropropane 1,3-Dichloropropane 1,3-Dichloropropane DDD DDD DDD DDD DDD DDE DDE DDE DDE DD	91-94-1 95-50-1 106-46-7 75-35-4 156-59-2 156-60-5 1861-32-1 3761-53-3 2092-66-0 78-87-5 542-75-6 72-54-8 72-54-8 72-55-9 72-55-9 50-29-3
DCB           -DCB           -DCE           is-1,2-DCE           ans-1,2-DCE           ICPA           3&C Red No. 5           3&C Red No. 5           3&C Red No. 9           -D Mixture           DD           4'-DDD           DT           4'-DDT           DVP	Organic Organic	3.3-Dichlorobenzidine 1.4-Dichlorobenzene 1.4-Dichlorobenzene 1.4-Dichlorobenzene 1.4-Dichloroethylene Cis-1.2-Dichloroethylene Dachal (DCPA) Ponceau MC D&C Red No. 9 1.2-Dichloropropene 1.3-Dichloropropene DDD DD D	91-94-1 95-50-1 106-46-7 75-35-4 156-59-2 156-59-2 156-60-5 1861-32-1 3761-53-3 2092-56-0 78-87-5 542-75-6 72-54-8 72-54-8 72-55-9 72-55-9 50-29-3 50-29-3 62-73-7
CB           -DCB           -DCB           -DCB           -DCB           1.4-DCE           ens-1,2-DCE           CPA           ABC           ABC           DD           Mixture           DD           4-DDD           DE           -4-DDE           DT           -4-DDT           DVP           EA	Organic Organic	3,3-Dichlorobenzidine 1,2-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dichloroetnylene cis-1,2-Dichloroetnylene Dacthal (DCPA) Ponceau MC D&C Red No. 9 1,2-Dichloropropane 1,3-Dichloropropane 1,3-Dichloropropane DDD DDD DDD DDD DDE DDE DDT DDT DDT DDT	91-94-1 95-50-1 106-46-7 75-35-4 156-59-2 156-59-2 156-60-5 1861-32-1 3761-53-3 2092-66-0 78-87-5 542-75-6 72-54-8 72-54-8 72-55-9 50-29-3 50-29-3 50-29-3 62-73-7 111-42-2
CB           -DCB           -DCB           -DCB           -DCE           si-12-DCE           ans-1,2-DCE           CPA           D2C Red No. 5           S&C Red No. 5           S&C Red No. 9           -D Mixture           DD           .4'-DDD           DE           .4'-DDE           DT           .4'-DDE           DF           .4'-DDE           DF           .4'-DDE           DF           .4'-DDE           DF           .4'-DDE           DF           .4'-DDE           DF           .4'-DDT           DVP           EA	Organic Organic	3,3-Dichlorobenzidine 1,2-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dichlorobenzene 1,1-Dichloroethylene dis-1,2-Dichloroethylene Dacthal (DCPA) Porceau MC D&C Red No. 9 1,2-Dichloropropane 1,3-Dichloropropane 1,3-Dichloropropane DDD DDD DDD DDD DDD DDE DDE DDE DDE DD	91-94-1 95-50-1 106-46-7 75-35-4 156-69-2 156-69-2 156-69-2 156-69-2 156-80-5 1861-32-1 3761-53-3 2092-56-0 78-87-5 542-75-6 72-54-8 72-55-9 72-55-9 50-29-3 50-29-3 50-29-3 62-73-7 111-42-2 1163-19-5
CB           DCB           -DCE           s.1,2-DCE           ans.1,2-DCE           CPA           SQC Red No. 5           S&C Red No. 5           SC Red No. 9           -D DD           4'-DDD           DE           0T           4'-DDT           DVP           EA           ecabromodiphenyl ether           ecolorane	Organic Organic	3.3-Dichlorobenzidine 1.2-Dichlorobenzene 1.4-Dichlorobenzene 1.4-Dichlorobenzene 1.4-Dichloroethylene cls-1.2-Dichloroethylene Dacthal (DCPA) Ponceau MC D&C Red No. 9 1.2-Dichloropropane 1.3-Dichloropropane 1.3-Dichloropropane DDD DDD DDD DDD DDE DDE DDE DDE DDE DD	91-94-1 95-50-1 106-46-7 75-35-4 156-59-2 156-59-2 156-60-5 1861-32-1 3761-53-3 2092-66-0 78-87-5 542-75-6 72-54-8 72-54-8 72-55-9 50-29-3 50-29-3 50-29-3 62-73-7 111-42-2
CB           DCB           -DCE           s.1,2-DCE           ans.1,2-DCE           CPA           SQC Red No. 5           S&C Red No. 5           SC Red No. 9           -D DD           4'-DDD           DE           0T           4'-DDT           DVP           EA           ecabromodiphenyl ether           ecolorane	Organic Organic	3.3-Dichlorobenzidine 1.2-Dichlorobenzene 1.4-Dichlorobenzene 1.4-Dichlorobenzene 1.4-Dichloroethylene cls-1.2-Dichloroethylene Dacthal (DCPA) Ponceau MC D&C Red No. 9 1.2-Dichloropropane 1.3-Dichloropropane 1.3-Dichloropropane DDD DDD DDD DDD DDE DDE DDE DDE DDE DD	91-94-1 95-50-1 106-46-7 75-35-4 156-69-2 156-69-2 156-69-2 156-69-2 1861-32-1 3761-53-3 2092-56-0 78-87-5 542-75-6 72-54-8 72-55-9 72-55-9 50-29-3 50-29-3 62-73-7 111-42-2 1163-19-5
CB           DCB           -DCB           -DCB           1.0CE           s.1,2-DCE           ens-1,2-DCE           CPA           &C Red No. 5           &C Red No. 9           -D Mbdure           DD           4'-DDD           DE           4'-DDE           DT           4'-DDT           DVP           EA           ecabromodiphenyl ether           echlorane           e-Fend	Organic Organic	3,3-Dichlorobenzidine 1,2-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dichlorobenzene 1,1-Dichloroethylene Cis-1,2-Dichloroethylene Dactral (DCPA) Ponceau MC D&C Red No. 9 1,2-Dichloropropene DDD DD D	91-94-1 95-50-1 106-46-7 75-35-4 156-59-2 156-59-2 156-60-5 1861-32-1 3761-53-3 2092-66-0 78-87-5 542-75-6 72-54-8 72-54-8 72-55-9 72-55-9 72-55-9 50-29-3 50-29-3 62-73-7 111-42-2 1163-19-5 2385-85-5 60-51-5
DCB         -DCB         -DCB         -DCB         -DCB         1,0-DCE         ans-1,2-DCE         CPA         362. Red No. 5         362. Red No. 9         >D Mixture         DD         .4-DDD         DE         .4'-DDD         DVP         IEA         ecobromodiphenyl ether         ecolorgane         e-Fend         EHP	Organic Organic	3,3-Dichlorobenzidine 1,2-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dichloroethylene cis-1,2-Dichloroethylene trans-1,2-Dichloroethylene Dactrad (DCPA) Ponceau MC D&C Red No. 9 1,2-Dichloropropane 1,3-Dichloropropane 1,3-Dichloropropane DDD DDD DDD DDE DDE DDE DDE DDT DDE DDT DDT	91-94-1 95-50-1 106-46-7 75-35-4 156-59-2 156-59-2 156-50-5 1861-32-1 3761-53-3 2092-56-0 78-87-5 542-75-6 72-54-8 72-54-8 72-55-9 50-29-3 50-29-3 50-29-3 62-73-7 111-42-2 1163-19-5 2385-85-5 60-51-5 117-61-7
DCB           -DCB           -DCB           -DCB           -DCB           1-DCE           is-1,2-DCE           ans-1,2-DCE           CPA           38C Red No. 5           38C Red No. 9           D-D Mixture           DD           .4'-DDD           DE           .4'-DDE           DVP           EA           tecabromodiphenyl ether           eechlorane           ee-Fend           EHP           emeton	Organic Organic	3,3-Dichlorobenzidine 1,2-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dichlorobenzene 1,1-Dichloroethylene cis-1,2-Dichloroethylene Dactrial (DCPA) Ponceau MC D&C Red No. 9 1,2-Dichloropropene 1,3-Dichloropropene DDD DD D	91-94-1 95-50-1 106-46-7 75-35-4 156-59-2 156-50-5 1861-32-1 3761-53-3 2092-66-0 78-87-5 542-75-6 72-54-8 72-55-9 72-55-9 50-29-3 50-29-3 50-29-3 62-73-7 111-42-2 1163-19-5 2385-85-5 60-51-5 117-81-7 8065-48-3
DCB         -DCB         -DCB         -DCB         -DCB         1,0-DCE         ans-1,2-DCE         CPA         362. Red No. 5         362. Red No. 9         >D Mixture         DD         .4-DDD         DE         .4'-DDD         DVP         IEA         ecobromodiphenyl ether         ecolorgane         e-Fend         EHP	Organic Organic	3,3-Dichlorobenzidine 1,2-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dichloroethylene cis-1,2-Dichloroethylene trans-1,2-Dichloroethylene Dactrad (DCPA) Ponceau MC D&C Red No. 9 1,2-Dichloropropane 1,3-Dichloropropane 1,3-Dichloropropane DDD DDD DDD DDE DDE DDE DDE DDT DDE DDT DDT	91-94-1 95-50-1 106-46-7 75-35-4 156-59-2 156-59-2 156-50-5 1861-32-1 3761-53-3 2092-56-0 78-87-5 542-75-6 72-54-8 72-54-8 72-55-9 50-29-3 50-29-3 50-29-3 62-73-7 111-42-2 1163-19-5 2385-85-5 60-51-5 117-61-7

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CONSTITUENT		See Listing(s) Under:	CASN
Devrinol		Napropamide	15299-99-7
DGRE		Diglycldyl resorcinol ether	101-90-8
Diacetone alcohol		Diacetone alcohol	123-42-2
Dialon		Diuron	330-54-1
Diamine		Hydrazine	302-01-2
2.4-Diaminoanisole		2,4-Diaminoanisole	615-05-4
2,4-Diaminoanisole sulfate		2,4-Diaminoanisole sulfate	39156-41-7
1,3-Diaminobenzene		m-Phenylenediamine	108-45-2
4,4'-Diaminodiphenyl ether		4,4'-Diaminodiphenyi ether	101-80-4
p-Diaminodiphenyl		Benzidine	92-87-5
1,2-Diaminoethane		Ethylenedlamine	107-15-3
2,8-Diamino-3-phenylazopyridine		Phenazopyridine	94-78-0
2,6-Dlamino-3-phenylazopyridine hydrochloride		Phenazopyridine hydrochloride	136-40-3
2,4-Diaminotoluene		2,4-Diaminotoluena	95-80-7
o-Dianisidine dihydrochloride		3,3'-Dimethoxybenzidine hydrochloride	20325-40-0
o-Dianisidina		3,3'-Dimethoxybenzidine	119-90-4
Diazine blue		Direct Blue 6	2602-48-2
Diazinon		Diazinon	333-41-5
Diazobenzene		Azathioprine	446-86-6
Dibenz(a,h)acridine		Dibenz(a,h)acridine	226-36-8
Dibenz(a,j)acridine		Dibenz(a,j)acridine	224-42-0
1,2;5,6-Dibenzanthracene		Dibenz(a,h)anthracene	53-70-3
Dibenz(a,h)anthracene		Dibenz(a,h)anthracene	53-70-3
Dibenzo(a,h)anthracene		Dibenz(a,h)anthracene	53-70-3
7H-Dibenzo(c,g)carbazole		7H-Dibenzo(c,g)carbazole	194-59-2
Dibenzo(a,e)pyrene		Dibenzo(a,e)pyrene	192-85-4
Dibenzo(a,h)pyrene		Dibenzo(a,h)pyrene	189-64-0
Dibenzo(a,i)pyrene		Dibenzo(a,i)pyrene	189-55-9
Dibenzo(a,I)pyrene		Dibenzo(a,I)pyrene	191-30-0
Dibenzyline hydrochloride		Phenoxybenzamine hydrochloride	63-92-3
Dibrom	Organic	Naled	300-76-5
Dibromoacetic acid	Organic	Dibromoacetic acid	
Dibromoacetonitrile	Organic	Dibromoacetonitrile	3252-43-5
1,4-Dibromobenzene	Organic	1,4-Dibromobenzene	106-37-6
Dibromochloromethane	Organic	Dibromochloromethane	124-48-1
Dibromochloropropane (DBCP)		Dibromochloropropane (DBCP)	96-12-8
1.2-Dibromo-3-chloropropane		Dibromochloropropane (DBCP)	96-12-8
2,8-Dibromo-4-cyanophenol		Bromoxynil	1689-84-5
1.2-Dibromoethane		1,2-Dibromoethane	106-93-4
3,5-Dibromo-4-hydroxybenzonitrile		Bromoxynil	1689-84-5
DibutyInitrosamine		N-Nitrosodi-n-butylamine	924-16-3
Dibutyl phthalate		Dibutyi phthalate	84-74-2
Di-n-butyiphthalate		Dibutyi phthalate	84-74-2
Dicamba		Dicamba	1918-00-9
Dichloroacetic acid		Dichtoroacetic acid	79-43-6
Dichloroacetonitrile		Dichloroacetonitrile	3018-12-0
1,2-Dichlorobenzene		1,2-Dichlorobenzene	95-50-1
1,3-Dichlorobenzene		1.3-Dichlorobenzene	541-73-1
1,4-Dichlorobenzene		1,4-Dichlorobenzene	106-46-7
n-Dichtorobenzene		1.3-Dichlorobenzene	541-73-1
D-Dichlorobenzene		1,2-Dichlorobenzene	95-50-1
p-Dichlorobenzene			106-46-7
Dick in Oddi (78) (83	Urganic	1.2-Dichlorobenzene	95-50-1
	[	1,3-Dichlorobenzene	541-73-1
		1,4-Dichlorobenzene	106-46-7
			25321-22-6
3,3'-Dichlorobenzidine		3,3'-Dichlorobenzidine	91-94-1
Dichlorobromomethane		Bromodichloromethane	75-27-4
1,1-Dichloro-2,2-bis(p-chlorophenyl)ethane	Organic		72-54-8
2,2'-Dichlorodiethyl ether		Bis(2-chloroethyl) ether	111-44-4
Dichlorodiethyl formal		Bis(2-chloroethoxy) methane	111-91-1
Dichlorodifluoromethane		Dichlorodifluoromethane	75-71-8
Dichlorodimethyl ether		Bis(chloromethyl) ether	542-88-1
Dichlorodimethylvinylphosphate		Dichlorvos	62-73-7
Dichlorodiphenyldichloroethane	Organic		72-54-8
Dichlorodiphenyldichloroethylene	Organic		72-55-9
Dichlorodiphenyltrichloroethane	Organic		50-29-3
,1-Dichioroethane	Organic	1,1-Dichtoroethane	75-34-3
,2-Dichlorgethane		1,2-Dichloroethane	107-06-2
,1-Dichlorgethene	Organic	1,1-Dichloroethylene	75-35-4
is-1,2-Dichloroethene		cis-1,2-Dichloroethylene	156-59-2
rans-1,2-Dichloroethene		trans-1,2-Dichloroethylene	156-60-5
Dichloroethenes		1,1-Dichloroethylene	75-35-4
		cis-1,2-Dichloroethylene	156-59-2
		trans-1,2-Dichloroethylene	156-60-5
		Dichloroethylenes	
Dichloroethyl formal	Ornanic	Bis(2-chloroethoxy) methane	111-91-1
,1-Dichloroethylene		1,1-Dichioroethylene	75-35-4
is-1,2-Dichloroethylene		cis-1,2-Dichloroethylene	156-59-2

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CONSTITUENT		See Listing(s) Under:	
Dichloroethylenes	Organic	1,1-Dichloroethylene	75
		cis-1,2-Dichloroethylene	15
		trans-1,2-Dichloroethylene	15
	ļ	Dichloroethylenes	
symmetical-Dichloroethyl ether		Bis(2-chloroethyl) ether	11
Dichloromethane		Dichloromethane	75
2,4-Dichloro-1-(4-nitrophenoxy)benzene		Nitrofen	18
2,3-Dichlorophenol		2,3-Dichiorophenol	67
2,4-Dichlorophenol		2,4-Dichiorophenol	12
2,5-Dichlorophenol		2,5-Dichlorophenol	58
2,6-Dichlorophenoi		2,6-Dichlorophenol	87
3,4-Dichlorophenol		3,4-Dichlorophenol	95
2,4-Dichlorophenoxyacetic acid	Organic		94
I-(2,4-Dichlorophenoxy)butyric acid		4-(2,4-Dichlorophenoxy)butyric acld	94
I,2-Dichloropropane		1,2-Dichloropropane	78
Dichloropropanes	Organic	1.2-Dichloropropane	78
		Dichloropropanes	26
1,3-Dichloropropene	Organic	1,3-Dichtoropropene	54
Dichloropropenes	Organic	1,3-Dichloropropene	54
· · ·		Dichloropropenes	
2-Dichloropropionic acid	Organic	Dalapon	75
I.3-Dichloropropylene	Organic	1,3-Dichloropropene	54
Dichlorvos	Organic	Dichlorvos	62
Dicrotophos	Organic	Bidrin	14
Dieldrin	Organic	Dieldrin	6
Diesel Oli	Organic	Diesel Oil	6
Diethanolamine		Diethanotamine	1
Diethanolnitrosamine		N-Nitrosodiethanolamine	1
Dethion	Organic		50
Diethylamine		Diethylamine	- 10
Diethyldithiocarbamate, sodlum		Sodium diethyldithiocarbamate	- 1
Diethylene ether	Organic	1,4-Dioxane	1
Di(2-ethylhexyl) adipate	Organic	Di(2-ethylhexyl) adipate	- 10
Di(2-ethylhexyl)phthalate		Di(2-ethylhexyl)phthalate	1
Diethyl ketone		Diethyl ketone	- 96
Diethylnitrosamine		N-Nitrosodiethylamine	- 5
Diethyl phthalate		Diethyl phthalate	- 18
Diethylstilbestrol		Diethyistilpestrol	5
Diethyl sulfate		Diethyl sulfate	6
Wenzoquat		Difenzoquat	- <b>1</b> 4
lifubenzuron		Diflubenzuron	3
Diffuorodichloromethane		Dichlorodifluoromethane	7
Difolatan	Organic		2
Difonate	Organic		9
biglycidyl resorcinol ether		Diglycidyl resorcinol ether	1
2-Dihydroacenaphthylene		Acenaphthene	8
hydrosafrole		Dihydrosafrole	9
8-Dihydroxyarithraquinone	Organic		
lo-bityoloxyantiradunone		Disobutyl ketone	10
Discogenatotoluene		Toluene diisocyanate	26
		Diisopropylamine	
bilisopropylamine			10
Di-Isopropyl ether		isopropyl ether	10
Vilsopropyl methyl phosphonate		Disopropyl methyl phosphonate	14
,4:5,8-Dimethanonaphthalene	Organic	B)	30
jimethipin		Dimethipin	- 5
2) Dimethoate		Dimethoate	- 6
3-Dimethoxybenzidine		3,3'-Dimethoxybenzidine	1
3'-Dimethoxybenzidine hydrochloride		3,3'-Dimethoxybenzidine hydrochloride	20
bimethrin		Dimethrin	7
Dimethylamine		Dimethylamine	12
-Dimethylaminoezobenzene		4-Dimethylaminoazobenzene	6
4-Dimethylaminobenzo-phenonimide			4
ans-2-{(Dimethylamino)methylimino]-5-[2-(5-nitro-2-furyl)vinyl]-1,3,4-oxadiazole		trans-2-[(Dimethylamino)methylimino]-5-[2-(5-nitro-2-furyl)vinyl]-1,3,4-oxadiaz	
4-Dimethylaniline		2.4-Xylidine	1
6-Dimethylaniline		2,6-Xylidine	8
N-Dimethylaniline		N.N-Dimethylaniline	1
,12-Dimethylbenz(a)anthracene		7,12-Dimethylbenz(a)anthracene	5
,3'-Dimethylbenzidine		3,3'-Dimethylbenzidine	1
3'-Dimethylbenzidine dihydrochloride		3,3'-Dimethylbenzidine dihydrochloride	6
4-Dimethylbenzylester		Dimethrin	7(
imethylcarbamoyl chloride		Dimethylcarbamoyl chloride	7
imethylcarbarnyl chloride	Organic	Dimethylcarbamoyl chloride	7
N-Dimethylformamide		N,N-Dimethylformamide	6
6-Dimethyl-4-heptenone		Diisobutyi ketone	1
1-Dimethylhydrazine		1,1-Dimethylhydrazine	5
2-Dimethylhydrazine		1,2-Dimethylhydrazine	5
ymmetricai-Dimethylhydrazine		1,2-Dimethylhydrazine	5
nsymmetrical-Dimethylhydrazine		1,1-Dimethylhydrazine	5
imethylketone	Organic		6
		Dimethyl methyl phosphonate	`
imethyl methyl phosphonate	Ordanic		

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Cross Reference Page 9

CONSTITUENT		See Listing(s) Under:	
2,4-Dimethylphenoi		2,4-Dimethylphenol	105-67-9
2,6-Dimethylphenol		2,6-Dimethylphenol	576-26-1
3,4-Dimethylphenol		3,4-Dimethylphenol	95-65-8
Dimethyl phthalate		Dimethyl phthalate	131-11-3
Dimethyl p-phthalate		Dimethyl terephthalate	120-61-6
Dimethyl sulfate		Dimethyl sulfate	77-78-1
Dimethyl terephthalate		Dimethyl terephthalate	
Dimethylvinylchloride	Organic	Dimethylvinylchloride	513-37-1
DIMP	Organic	Diisopropyl methyl phosphonate	1445-75-6
.3-Dinitrobenzene		1,3-Dinitrobenzene	99-65-0
n-Dinitrobenzene		1.3-Dinitrobenzane	99-85-0
t.6-Dinitro-o-cresol		4,6-Dinitro-o-cresol	534-52-1
		4,6-Dinitro-o-cyclohexyl phenol	
4,6-Dinitro-o-cyclohexyl phenol			131-89-5
6-Dinitro-2-methylphenol		4,6-Dinitro-o-cresol	534-52-1
,4-Dinitrophenol		2,4-Dinitrophenol	51-28-5
Dinitrophenols	Organic	4,6-Dinitro-o-cresol	534-52-1
		4,6-Dinitro-o-cyclohexyl phenol	131-89-5
		2,4-Dinitrophenol	51-28-5
<u> </u>		Dinitrophenols	25550-58-7
6-Dinitropyrene	Organic	1,6-Dinitropyrene	42397-64-8
,8-Dinitropyrene		1,8-Dinitropyrene	42397-65-9
4-Dinitrotoluene		2.4-Dinitrotoluene	121-14-2
.6-Dinitrotoluene		2,6-Dinitrotoluene	606-20-2
Dinitrotoluenes		2,4-Dinitrotoluene	121-14-2
	C. Baulo	2.6-Dinitrotoluene	
		Dinitrotoluenes	606-20-2
			25321-14-6
Dinoseb		Dinoseb	
Di(n-octyl) phthatate		Di(n-octyl) phthalate	117-84-0
,4-Dioxane		1, <u>4-Dio</u> xane	123-91-1
-Dioxane		1,4-Dioxane	123-91-1
lioxin		2,3,7,8-TCDD (Dioxin)	1748-01-8
	Organic	Isopropyl ether	108-20-3
Diphenamid(e)		Diphenamld(e)	957-51-7
Diphenamide		Diphenamid(e)	957-51-7
Piphenyi		1,1-Biphenyl	
			92-52-4
Niphenylamine		Diphenylamine	122-39-4
)iphenyldlazene		Azathioprine	446-86-8
Diphenytdiimlde		Azathloprine	446-86-6
Diphenyldiimide		Azobenzene	103-33-3
Diphenyl ether	Organic	Phenyl ether	101-84-8
2-Diphenylhydrazine	Organic	1,2-Diphenylhydrazine	122-66-7
Piphenyinitrosamine	Organic	N-Nitrosodiphenylamine	86-30-6
•••	1 -	p-Nitrosodiphenylamine	156-10-5
DipropyInitrosamine	Organic	N-Nitrosodipropylamine	621-64-7
Dipterex		Trichlorion	52-68-6
Diguat	Organic		
			85-00-7
Nrect Black 38		Direct Black 38	1937-37-7
irect Blue 6		Direct Blue 6	2602-46-2
irect Brown 95		Direct Brown 95	
irect Brown BR		m-Phenylenediamine	108-45-2
irect Brown GG		m-Phenylenediamine	108-45-2
indone	Organic	Phenazopyridine	94-78-0
isperse Blue 1		Disperse Blue 1	2475-45-8
issolved Oxygen		Oxygen, dissolved	7782447
isulfoton	Organic		
isyston	Organic		
ithane M-22			
	Organic		12427-38-2
ithane 2-78	Organic Organic		12122-67-7
4-Dithiane		1,4-Dithiane	505-29-3
thiocarb		Sodium diethyldithiocarbamate	148-18-5
iuron	Organic		330-54-1
ivinyl	Organic	1,3-Butadiene	106-99-0
MA		Dimethylamine	124-40-3
MBA		7,12-Dimethylbenz(a)anthracene	57-97-6
MF		N,N-Dimethylformamide	68-12-2
MNA		N-Nitrosodimethylamine	
4-DMP			62-75-9
		2.4-Dimethylphenol	105-87-9
MT		Dimethyl terephthalate	120-61-6
NBP	Organic	Dinoseb	88-85-7
		4,6-Dinitro-o-cyclohexyl phenol	131-89-5
<u>o</u>		Oxygen, dissolved	7782447
odecylguanidine acetate	Organic		2439103
odine	Organic		2439103
owpon	Organic		75-99-0
PNA		N-Nitrosodipropylamine	
PX 6376			621-64-7
	Organic Organic		74223-64-6
PX-F5384PX-F5384PX-H6573	Organic		
- L-MAN 73	Organic	NuStar	85509-19-9
PX-M6316 PX-Y5893	Organic	Hannony	79277-27-3

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	Omania	Chlorpyrifo8	2921-88-2
Dyfonate		Fonofos	944-22-9
Dyphonate		Fonofos	944-22-9
			0000
ΑΚ	Organic	Ethyl n-amyl ketone	106-68-3
	Inorganic	Specific conductance (EC)	
DB	Organic	1,2-Dibromoethane	106-93-4
GBE	Organic	Ethylene glycol monobutyl ether	111-78-2
-107		Isoxaben	82558-50-7
Tectrical Conductivity		Specific conductance (EC)	
ndosulfan		Endosulfan	115-29-7
ndosulfan I (alpha)		Endosulfan	115-29-7
ndosulfen II (beta)		Endosulfan	
ndosulfan sulfate		Endosulfan sulfate	1031-07-8
ndothal		Endothal Endothal	145-73-3
ndoxan monohydrate		Cyclophosphamide	145-73-3
ndrex	Organic Organic		50-18-0
indin	Organic		72-20-8
NU		N-Nitroso-N-ethylurea	759-73-9
PEG		Ethylphthalyl ethylglycolate	84-72-0
pic 500		Furmecyclox	60568-05-0
pichlorohydrin		Epichlorohydrin	106-89-8
PN		Ethyl p-nitrophenyl phenylphosphorothioate	2104-84-5
poxyethane		Ethylene oxide (ETO)	75-21-8
2-Epoxyethylbenzene		Styrene oxide	96-09-3
plam		S-Ethyl dipropylthiocarbamate	759-94-4
PTC		S-Ethyl dipropylthiocarbamate	759-94-4
stradiol 17B		Estradiol 178	50-28-2
thanal		Acetaldehyde	75-07-0
thenamide		Acetamide	60-35-5
thane	Organic		74-84-0
thenedinitrile		Cyanogen	460-19-5
thanethiol		Ethyl mercaptan	107-21-1
thanot	Organic		75-08-164-17-5
thanolamine		Ethanolamine	141-43-5
thephon		Ethephon	16672-87-0
thers, chloroalkyl-		Bis(2-chloroethyl) ether	111-44-4
		Bis(2-chloroisopropyl) ether	39638-32-9
		Bis(chloromethyl) ether	542-88-1
	1	Chioroalkyi ethers	
		Chioromethyl methyl ether	107-30-2
thers, halo-	Organic	Bis(2-chloroethyl) ether	111-44-4
		Bis(2-chloroisopropyl) ether	39638-32-9
		Bis(chloromethyl) ether	542-88-1
	1	4-Bromophenyl phenyl ether	101-55-3
	1	Chloroalkylethers	
		Chloromethyl methyl ether	107-30-2
		Decabromodiphenyl ether	1163-19-5
		Haloethers	
		Octabromodiphenyl ether Pentabromodiphenyl ether	32536-52-0
thion	Organic		32534-81-9
-Ethoxyethanol		2-Ethoxyethanol	<u>563-12-2</u>
-Ethoxyethyl acetate		2-Ethoxyethyl acetate	111-15-9
thy acetate		Ethyl acetate	141-78-6
thyl acetone		Methyl n-propyl ketone	107-87-9
inyi acrylate		Ethyl acrylate	140-88-5
thyl alcohol	Organic		64-17-5
hylamine		Ethylamine	75-04-7
thyl n-amyl ketone	Organic	Ethyl n-amyl ketone	106-68-3
thylbenzene		Ethylbenzene	100-41-4
ihyi bromide		Ethyl bromide	74-96-4
hyl carbamate		Urethane	51-79-6
thyl carbethoxymethyl phthalate		Ethylphthalyl ethylglycolate	84-72-0
ihyl chloride		Chloroethane	75-00-3
hyl-4,4'-dichlorobenzilate		Ethyl-4,4-dichlorobenzilate	510-15-6
Ethyl dipropylthiocarbamate		S-Ethyl dipropylthiocarbamate	759-94-4
hylene	Organic		74-85-1
hylenediamine		Ethylenediamine	107-15-3
thylene dibromide		1,2-Dibromoethane	106-93-4
thylene dichtoride		1,2-Dichloroethane	107-06-2
inyiene giycol butyl ether		Ethylene glycol	107-21-1
thylene glycol botyl ether		Ethylene glycol monobutyl ether	111-76-2
hylene glycol monoethyl ether		Ethylene glycol monobutyl ether	111-76-2
hylene glycol monoethyl ether acetate		2-Ethoxyethanol	110-80-5
hyteneimine		z-Einoxyeinyi adelate	111-15-9

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	CONSTITUENT	Category	See Listing(s) Under:	CAS No.
F	Eihylenes, dichloro-		1,1-Dichloroethylene	75-35-4
-		0.90.00	cis-1,2-Dichloroethylene	156-59-2
			trans-1,2-Dichloroethylene	156-60-5
		<u> </u>	Dichloroethylenes	
	Ethylene thiourea (ETU)		Ethylene thiourea (ETU)	96-45-7
	Ethyl ether Ethyl formate		Ethyl ether Ethyl formate	60-29-7
	Ethyl mercaptan		Ethyi mercaptan	75-08-1
	Ethyl nitrile		Acetonitrile	75-05-8
	Ethyl p-nitrophenyl phenylphosphorothioate		Ethyl p-nitrophenyl phenylphosphorothioate	2104-64-5
	Ethylnitrosourea		N-Nitroso-N-ethylurea	759-73-9
	Ethyl parathion		Parathion	56-38-2
	Ethylphthalyl ethylglycolate		Ethylphthalyl ethylglycolate	84-72-0
	Ethylthiodemeton		Disyston Acetylene	298-04-4 74-86-2
	Ethyne		Ethylene oxide (ETO)	75-21-8
	ETU		Ethylene thiourea (ETU)	96-45-7
	Express		Express	101200-48-0
F	F <sup>.</sup>		Fluoride	7782-41-4
	FD&C Red No. 1		Ponceau 3R	3564098
	Fe	Inorganic		7439-89-6
	Femogen		Estradiol 17B	50-28-2
	Fenamiphos	Organic	Fenamiphos Danitol	22224-92-6 39515-41-8
	Fenpropanate Fenpropathrin	Organic		39515-41-8
	Fenvalerate	Organic		51630-58-1
	Ferbam		Ferbam	14484-64-1
	Fermate	Organic	Ferbam	14484-64-1
	Fluometuron		Fluometuron	2164-17-2
	Fluoranthene		Fluoranthene	206-44-0
	Fluorene		Fluorene	86-73-7
	2-Fluorenylacetamide		2-Acetylaminofluorene Fluoride	53-96-3 7782-41-4
	Fluorine, soluble	Inorganic		7782-41-4
	Fluorotrichloromethane		Trichiorofiuoromethane	75-69-4
	Fluridone		Fluridone	59756-60-4
	Flurprimidol		Flurprimide	56425-91-3
	Flutolanii		Flutolanil	66332-96-5
	Fluvalinate		Fluvalinate	69409-94-5
	FNT		2-(2-Formythydrazino)-4-(5-nitro-2-furyt)thiazote	3570-75-0
	Foaming agents (MBAS)		Foaming agents (MBAS)	
	Folex 6EC		Merphos	150-50-5
	Folpen Folpet	Organic Organic		133-07-3
	Foresafen		Foresafen	72178-02-0
	Fonofos		Fonofos	944-22-9
	Formaldehyde		Formaldehyde	50-00-0
	Formic acid		Formic acid	64-18-6
	2-(2-Formylhydrazino)-4-(5-nitro-2-furyl)thiazole	Organic	2-(2-Formylhydrazino)-4-(5-nitro-2-furyl)thiazole	0 5 7 0 7 5 0
	Fosetyl-al			3570-75-0
			Fosetyl-al	39148-24-8
	Fosfamid	Organic	Dimethoate	39148-24-8 60-51-5
İ	Freen 10	Organic Organic	Dimethoate Carbon tetrachloride	39148-24-8 60-51-5 56-23-5
	Freen 10 Freen 11	Organic Organic Organic	Dimethoate Carbon tetrachloride Trichlorofluoromethane	39148-24-8 60-51-5 56-23-5 75-69-4
	Freen 10 Freen 11 Freen 12	Organic Organic Organic Organic	Dimethoate Carbon tetrachloride	39148-24-8 60-51-5 56-23-5
	Freen 10 Freen 11	Organic Organic Organic Organic Organic	Dimethoate Carbon tetrachloride Trichlorofluoromethane Dichlorodifluoromethane	39148-24-8 60-51-5 56-23-5 75-69-4 75-71-8
	Freon 10 Freon 11 Freon 12 Freon 12 Freon 13 Freon 13 Freon 150	Organic Organic Organic Organic Organic Organic Organic	Dimethoate Carbon tetrachloride Trichlorofiluoromethane Dichlorodifluoromethane Chloroform 1,1,2-Tichloro-1,2,2-trifluoroethane 1,2-Dichloroethane	39148-24-8 60-51-5 56-23-5 75-69-4 75-71-8 67-66-3 76-13-1 107-06-2
	Freon 10 Freon 11 Freon 12 Freon 20 Freon 13 Freon 150 Fuel oll #1	Organic Organic Organic Organic Organic Organic Organic Organic	Dimethoate Carbon tetrachloride Trichlorofiluoromethane Dichlorodifluoromethane Chloroform 1,1,2-Trichloro-1,2,2-trifluoroethane 1,2-Dichloroethane Kerosene Kerosene	39148-24-8 60-51-5 56-23-5 75-59-4 75-71-8 67-66-3 76-13-1 107-06-2 8008-20-6
	Freon 10 Freon 11 Freon 12 Freon 20 Freon 13 Freon 150 Fuel oil #1 Fuel oil #2	Organic Organic Organic Organic Organic Organic Organic Organic Organic	Dimethoate Carbon tetrachloride Trichlorofluoromethane Dichlorodifluoromethane Chloroform 1,1,2-Trichloro-1,2,2-trifluoroethane 1,2-Dichloroethane Kerosene Diesel Oli	39148-24-8 60-51-5 56-23-5 75-59-4 75-71-8 67-66-3 76-13-1 107-06-2 8008-20-6 68476-34-6
	Freon 10 Freon 11 Freon 12 Freon 20 Freon 13 Freon 13 Freon 13 Freon 150 Fuel oil #1 Fuel oil #2 Furadan	Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic	Dimethoate Carbon tetrachloride Trichlorofluoromethane Dichtorodifluoromethane Chloroform 1,1,2-Trichloro-1,2,2-trifluoroethane 1,2-Dichloroethane Kerosene Diesel Qil Cerbofuran	39148-24-8 60-51-5 56-23-5 75-69-4 75-71-8 67-66-3 76-13-1 107-06-2 8008-20-6 68476-34-6 1563-68-2
	Freen 10           Freen 11           Freen 12           Freen 20           Freen 13           Freen 160           Fuel oil #1           Fuel oil #2           Furadan           Furan	Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic	Dimethoate Carbon tetrachloride Trichlorofluoromethane Dichlorodifluoromethane Chloroform 1,1,2-Trichloro-1,2,2-triftuoroethane 1,2-Dichloroethane Kerosene Diesel Oil Carbofuran Furan	39148-24-8 60-51-5 56-23-5 75-69-4 75-71-8 67-68-3 76-13-1 107-06-2 8008-20-6 68476-34-6 1563-68-2 110-00-9
•	Freen 10           Freen 11           Freen 12           Freen 20           Freen 113           Freen 150           Fuel oll #1           Furadan	Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic	Dimethoate Carbon tetrachloride Trichlorofluoromethane Dichlorodifluoromethane Chloroform 1,1,2-Trichloro-1,2,2-trifluoroethane 1,2-Dichloroethane Kerosene Diesel Oll Carbofuran Furan N-[4-(5-Nitro-2-furyl)-2-thiazolyl]acetamide	39148-24-8 60-51-5 56-23-5 75-59-4 75-71-8 67-66-3 76-13-1 107-06-2 8008-20-6 68476-34-6 1563-86-2 110-00-9 531-82-8
	Freen 10           Freen 11           Freen 12           Freen 13           Freen 150           Fuel oli #1           Fuel oli #2           Furadan           Furadian	Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic	Dimethoate           Carbon tetrachloride           Trichlorofluoromethane           Dichtorodifluoromethane           Chloroform           1,1,2-Trichloro-1,2,2-trifluoroethane           1,2-Dichloroethane           Kerosene           Diesel Oil           Carbofuran           Furan           N-[4-(5-Nitro-2-furyi)-2-thiazolyl]acetamide           Furfural	39148-24-8 60-51-5 56-23-5 75-69-4 75-71-8 67-66-3 76-13-1 107-06-2 8008-20-6 68476-34-6 1563-68-2 110-00-9 531-82-8 98-01-1
	Freen 10           Freen 11           Freen 12           Freen 20           Freen 113           Freen 150           Fuel oll #1           Furadan	Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic	Dimethoate           Carbon tetrachloride           Trichlorofluoromethane           Dichtorodifluoromethane           Chloroform           1,1,2-Trichloro-1,2,2-trifluoroethane           1,2-Dichloroethane           Kerosene           Diesel Oil           Carbofuran           Furan           N-[4-(5-Nitro-2-furyi)-2-thiazolyl]acetamide           Furfural	39148-24-8 60-51-5 56-23-5 75-69-4 75-71-8 67-66-3 76-13-1 107-06-2 8008-20-6 68476-34-6 1563-66-2 110-00-9 531-82-8 99-01-1 110-00-9
	Freen 10           Freen 11           Freen 12           Freen 13           Freen 13           Freen 13           Freen 14           Fuel 01#1           Fuel 01#2           Furaden           Furaten           Furatinaziole           Furdiaziole           Furdiazine           Furdiazine	Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic	Dimethoate Carbon tetrachloride Trichlorofluoromethane Dichlorodifluoromethane Chloroform 1,1,2-Trichloro-1,2,2-trifluoroethane 1,2-Dichloroethane Kerosene Dissel Oil Carbofuran Furan N-[4-(5-Nitro-2-furyl)-2-thiazolyl]acetamide Furfural Euran 2-Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazole N-[4-(5-Nitro-2-furyl)-2-thiazolyl]acetamide	39148-24-8 60-51-5 56-23-5 75-69-4 75-71-8 67-66-3 76-13-1 107-06-2 8008-20-6 68476-34-6 1563-68-2 110-00-9 531-82-8 98-01-1
	Freen 10           Freen 11           Freen 12           Freen 13           Freen 13           Freen 13           Freen 14           Fuel oli #1           Furadan           Furadu           Furan           Furduran           Furduran	Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic	Dimethoate           Carbon tetrachloride           Trichlorofluoromethane           Dichlorodifluoromethane           Chloroform           1,1,2-Trichloro-1,2,2-trifluoroethane           1,2-Dichloroethane           Kerosene           Diesel Oil           Carbofuran           Furan           N-[4-(5-Nitro-2-furyl)-2-thiazolyl]acetamide           Furfural           Stationo-5-(5-nitro-2-furyl)-1.3, 4-thiadiazole           N-[4-(5-Nitro-2-furyl)-2-thiazoly]]acetamide           Furmecyclox	39148-24-8 60-51-5 56-23-5 75-69-4 75-71-8 67-66-3 76-13-1 107-06-2 8008-20-6 68476-34-6 1563-68-2 110-00-9 531-82-8 96-01-1 110-00-9 712-68-5 531-82-8 60568-05-0
	Freon 10           Freon 11           Freon 12           Freon 12           Freon 13           Freon 14           Freon 150           Fuel oil #1           Fuel oil #2           Furadan           Furadan           Furadan           Furan           Furfural           Furfuran           Furfuran           Furfuran           Furmecyclox           Furmetamide	Organic Organic	Dimethoate Carbon tetrachloride Trichlorofluoromethane Dichlorodifluoromethane Chloroform 1,1,2-Trichloro-1,2,2-trifluoroethane 1,2-Dichloroethane Kerosene Dessel Oli Carbofuran Furan N-[4-(5-Nitro-2-fury])-2-thlazoly]]acetamide Furfural Carbofuran Furfural Furfur	39148-24-8 60-51-5 56-23-5 75-59-4 75-71-8 67-66-3 76-13-1 107-06-2 8008-20-6 68476-34-6 1563-66-2 110-00-9 531-82-8 99-01-1 110-00-9 712-68-5 531-82-8 60568-05-0
	Freen 10           Freen 11           Freen 12           Freen 20           Freen 13           Freen 14           Freen 150           Fuel oil #1           Fuel oil #2           Furadan           Furdura           Furfura           Furfura           Furfura           Furdura	Organic Organic	Dimethoate           Carbon tetrachloride           Trichlorofluoromethane           Dichtorodifluoromethane           Chloroform           1,1,2-Trichloro-1,2,2-trifluoroethane           1,2-Dichloroethane           Kerosene           Diesel Oli           Cerbofuran           Furan           N-[4-(5-Nitro-2-furyl)-2-thiazolyl]acetamide           Furran           2-Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazole           N-[4-(5-Nitro-2-furyl)-2-thiazolyl]acetamide           Furnan           2-Amino-5-(5-nitro-2-furyl)-2-thiazolyl]acetamide           Furmecyclox           Furmecyclox           Furmecyclox           Furmecyclox           Furmecyclox	39148-24-8 60-51-5 56-23-5 75-69-4 75-71-8 67-66-3 76-13-1 107-06-2 8008-20-6 68476-34-6 1563-68-2 110-00-9 531-82-8 99-01-1 110-00-9 712-68-5 531-82-8 60568-05-0 80568-05-0 80568-05-0 80568-05-0
	Freon 10           Freon 11           Freon 12           Freon 12           Freon 13           Freon 14           Freon 150           Fuel oil #1           Fuel oil #2           Furadan           Furadan           Furadan           Furan           Furfural           Furfuran           Furfuran           Furfuran           Furmecyclox           Furmetamide	Organic Organic	Dimethoate           Carbon tetrachloride           Trichlorofluoromethane           Dichtorodifluoromethane           Chloroform           1,1,2-Trichloro-1,2,2-trifluoroethane           1,2-Dichloroethane           Kerosene           Diesel Oli           Cerbofuran           Furan           N-[4-(5-Nitro-2-furyl)-2-thiazolyl]acetamide           Furran           2-Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazole           N-[4-(5-Nitro-2-furyl)-2-thiazolyl]acetamide           Furnan           2-Amino-5-(5-nitro-2-furyl)-2-thiazolyl]acetamide           Furmecyclox           Furmecyclox           Furmecyclox           Furmecyclox           Furmecyclox	39148-24-8 60-51-5 56-23-5 75-59-4 75-71-8 67-66-3 76-13-1 107-06-2 8008-20-6 68476-34-6 1563-66-2 110-00-9 531-82-8 99-01-1 110-00-9 712-68-5 531-82-8 60568-05-0
	Freen 10           Freen 11           Freen 12           Freen 13           Freen 130           Freen 130           Fuel oil #1           Fuel oil #2           Furadan           Furduan	Organic Organic	Dimethoate Carbon tetrachloride Trichlorofluoromethane Dichlorodifluoromethane Chloroform 1,1,2-Trichloro-1,2,2-trifluoroethane 1,2-Dichloroethane 1,2-Dichloroethane Kerosene Diesel Oil Carbofuran Furan N-(4-(5-Nitro-2-furyl)-2-thiazolyl]acetamide Furfural Euran 2-Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazole N-(4-(5-Nitro-2-furyl)-2-thiazolyl]acetamide Furmecyclox AF-2 AF-2 AF-2	39148-24-8 60-51-5 56-23-5 75-69-4 75-71-8 67-66-3 76-13-1 107-06-2 8008-20-6 68476-34-6 1563-66-2 110-00-9 531-82-8 98-01-1 110-00-9 712-68-5 531-82-8 60568-05-0 60568-05-0 80568-05-0 3688-53-7 3688-53-7
	Freon 10         Freon 11         Freon 12         Freon 12         Freon 13         Freon 14         Freon 150         Fuel oil #1         Fuel oil #2         Furadan         Furadan         Furan         Furfura         Furfura         Furfura         Furfura         Furfura         Furmeyclox         Furmetyclox         Furglamide         2-(2-Furyl)-3-(5-nitro-2-furyl)acrylamide         Gasoline	Organic Organic	Dimethoate           Carbon tetrachloride           Trichlorofluoromethane           Dichlorodifluoromethane           Chloroform           1,1,2-Trichloro-1,2,2-trifluoroethane           1,2-Dichloroethane           Kerosene           Diesel Oli           Carbofuran           Furan           N-[4-(5-Nitro-2-furyl)-2-thiazolyl]acetamide           Furfural           Furfural           Furfural           Furfural           Furfural           Furfural           Furgelox           Furmecyclox           Furmecyclox           AF-2           AF-2           Gasoline	39148-24-8 60-51-5 56-23-5 75-68-4 75-571-8 67-66-3 76-13-1 107-06-2 8008-20-6 68476-34-6 1563-66-2 110-00-9 531-82-8 98-01-1 110-00-9 712-68-5 531-82-8 98-01-1 110-00-9 712-68-5 531-82-8 805-68-05-0 3688-53-7 3688-53-7 8006-61-9
G	Freon 10           Freon 11           Freon 12           Freon 12           Freon 13           Freon 14           Freon 150           Freon 150           Fuel oil #1           Fuel oil #2           Furadan           Furadan           Furradan           Furran           Furfural           Gasoline           Gasoline           Genoxal	Organic Organic	Dimethoate           Carbon tetrachloride           Trichlorofluoromethane           Dichtorodifluoromethane           Chloroform           1,1,2-Trichloro-1,2,2-trifluoroethane           1,2-Dichtoroethane           Kerosene           Diesel Oli           Cerbofuran           Furan           N-[4-(5-Nitro-2-furyl)-2-thiazolyl]acetamide           Furfural           Furan           2-Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazole           N-[4-(5-Nitro-2-furyl)-2-thiazolyl]acetamide           Furan           2-Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazole           N-[4-(5-Nitro-2-furyl)-2-thiazolyl]acetamide           Furmecyclox           AF-2           AF-2           Gasoline           Cyclophosphamide	39148-24-8 60-51-5 56-23-5 75-59-4 75-71-8 67-66-3 76-13-1 107-06-2 8008-20-6 68476-34-6 1563-66-2 110-00-9 631-82-8 98-01-1 110-00-9 712-68-5 531-82-8 60568-05-0 80568-05-0 3688-53-7 3688-53-7 3688-53-7
G	Freon 10         Freon 11         Freon 12         Freon 12         Freon 13         Freon 14         Freon 150         Fuel oil #1         Fuel oil #2         Furadan         Furadan         Furan         Furfura         Furfura         Furfura         Furfura         Furfura         Furmeyclox         Furmetyclox         Furglamide         2-(2-Furyl)-3-(5-nitro-2-furyl)acrylamide         Gasoline	Organic Organic	Dimethoate           Carbon tetrachloride           Trichlorofluoromethane           Dichlorodifluoromethane           Chloroform           1,1,2-Trichloro-1,2,2-trifluoroethane           1,2-Dichloroethane           Kerosene           Diesel Oli           Carbofuran           Furan           N-[4-(5-Nitro-2-furyl)-2-thiazolyl]acetamide           Furfural           Furfural           Furfural           Furfural           Furfural           Furfural           Furgelox           Furmecyclox           Furmecyclox           AF-2           AF-2           Gasoline	39148-24-8 60-51-5 56-23-5 75-69-4 75-71-8 67-66-3 76-13-1 107-06-2 8008-20-6 68476-34-6 1563-66-2 110-00-9 531-82-8 96-01-1 110-00-9 712-68-5 531-82-8 96-01-1 110-00-9 712-68-5 531-82-8 80568-05-0 3088-53-7 3688-53-7 3688-53-7
G	Freon 10           Freon 11           Freon 12           Freon 12           Freon 13           Freon 14           Freon 150           Fuel oil #1           Fuel oil #2           Furadan           Furadan           Furadan           Furadan           Furadan           Furadan           Furan           Furdural           Furfuran           Furfuran           Furmeyclox           Furmeyclox           Furmetamide           Furgylamide           2.(2-Furyl)-3-(5-nitro-2-furyl)acrylamide           Gasoline           Genoxal           Gesatram 50           Glob-P-2           Glucopyrenose	Organic Organic	Dimethoate           Carbon tetrachloride           Trichlorofluoromethane           Dichlorodifluoromethane           Chloroform           1,1,2-Trichloro-1,2,2-trifluoroethane           1,2-Dichloroethane           Kerosene           Diesel Oil           Cerbofuran           Furan           N-[4-(5-Nitro-2-furyl)-2-thiazolyl]acetamide           Furfural           Furan           2-Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazole           N-[4-(5-Nitro-2-furyl)-2-thiazolyl]acetamide           Furmecyclox           Furmecyclox           AF-2           Gasoline           Cyclophosphamide           Prometon	39148-24-8 60-51-5 56-23-5 75-69-4 75-71-8 67-66-3 76-13-1 107-06-2 8008-20-6 68476-34-6 1563-66-2 110-00-9 531-82-8 98-01-1 110-00-9 712-68-5 531-82-8 60568-05-0 80568-05-0 80568-05-0 80568-05-0 80568-05-7 3688-53-7 8006-61-9 50-18-0 1610-18-0
G	Freon 10           Freon 11           Freon 12           Freon 12           Freon 13           Freon 160           Freon 170           Freon 180           Fuel oil #1           Fuel oil #2           Furadan           Furadan           Furadan           Furadan           Furadan           Furadan           Furan           Furfural           Furfural           Furfuran           Furmetamide           Furmetamide           Furglamide           2.(2-Furgl)-3-(5-nitro-2-furgl)acrylamide           Gasoline           Gesafram 50           Gluopyranose           Gluopsynance-ammonium	Organic Organic	Dimethoate           Carbon tetrachloride           Trichlorofluoromethane           Dichtorodifluoromethane           Chloroform           1,1,2-Trichloro-1,2,2-trifluoroethane           1,2-Dichtoroethane           Kerosene           Diesel Oil           Carbofuran           Furan           N-[4-(5-Nitro-2-furyl)-2-thlazolyl]acetamide           Furfural           Furfural           Furfural           Furmeryclox           Furmecyclox           AF-2           Gasoline           Cyclophosphamide           Prometon           A-alpha-C           Chlorozotocin           Glufosinate-armmonium	39148-24-8 60-51-5 56-23-5 75-59-4 75-51-8 67-66-3 76-13-1 107-06-2 8008-20-6 68476-34-6 1563-66-2 110-00-9 531-82-8 99-01-1 110-00-9 712-68-5 531-82-8 60568-05-0 3088-53-7 3688-53-7 3688-53-7 8006-61-9 50-18-0 1610-18-0 26148-68-5 54749-90-5 54749-90-5 577182-82-2
G	Freon 10           Freon 11           Freon 12           Freon 12           Freon 13           Freon 14           Freon 150           Fuel oil #1           Fuel oil #2           Furadan           Furadan           Furadan           Furadan           Furadan           Furadan           Furan           Furdural           Furfuran           Furfuran           Furmeyclox           Furmeyclox           Furmetamide           Furgylamide           2.(2-Furyl)-3-(5-nitro-2-furyl)acrylamide           Gasoline           Genoxal           Gesatram 50           Glob-P-2           Glucopyrenose	Organic Organic	Dimethoate Carbon tetrachloride Trichlorofluoromethane Dichtorodifluoromethane Chloroform 1,1,2-Trichloro-1,2,2-trifluoroethane 1,2-Dichloroethane Kerosene Diesel Oli Cerbofuran Furan N-[4-(5-Nitro-2-furyl)-2-thiazolyl]acetamide Furfural Furfural Furfural Furmecyclox AF-2 AF-2 Gasoline Cyclophosphamide Prometon A-alpha-C Chlorozotocin Gluro-Sinate-ammonium Glu-P-1	39148-24-8 60-51-5 56-23-5 75-69-4 75-71-8 67-66-3 76-63 76-13-1 107-06-2 8008-20-6 68476-34-6 1563-66-2 110-00-9 531-82-8 98-01-1 110-00-9 712-68-5 531-82-8 98-01-1 110-00-9 712-68-5 531-82-8 60568-05-0 60568-05-0 3688-53-7 8006-61-9 50-18-0 1610-18-0 26148-66-5 54749-90-5

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ONSTITUENT	Category	See Listing(s) Under:	CAS No
ycidol	Organic	Giycidol	556-52-5
yphosate		Glyphosate	1071-83-6
yphosate isopropylamine salt		Glyphosate	1071-83-6
al		Oxyfluorfen	42874-03-3
asian		Tebuthiuron	34014-18-1
8850		Oll & grease	
seofluvin	Organic	Griseofluvin	126-07-8
oss Alpha radioactivity		Radioactivity, Gross Alpha	
oss Beta radioactivity	Inorganic	Radioactivity, Gross Beta	
thion	Organic	Azinphos-methyl	86-50-0
romitrin	Organic	Gyromitrin	16568-02-8
NNH2	Inorganic	Hydrazine	302-01-2
5	Inorganic	Hydrogen sulfide	7783064
Se	Inorganic	Hydrogen selenide	7783075
	Inorganic	Tritium	10028-17-8
loacetic acids	Organic	Bromoacetic acid	79-08-3
		Chloroacetic acid	79-11-8
		Dibromoacetic acid	
		Dichloroacetic acid	79-43-6
		Trichloroacetic acid	76-03-9
loethers	Organic	Bis(2-chioroethyl) ether	111-44-4
		Bis(2-chloroisopropyl) ether	39638-32-9
		Bis(chloromethyl) ether	542-88-1
		4-Bromophenyl phenyl ether	101-55-3
	1	Chloroalkylethers	
	1	Chloromethyl methyl ether	107-30-2
		Decabromodiphenyl ether	1163-19-5
		Haloethers	1103-19-0
	1		
		Octabromodiphenyl ether Pentabromodiphenyl ether	32536-52-0 32534-81-9
lan athawaa			
lomethanes	Organic	Bromochloromethane	74-97-5
		Bromodichloromethane	75-27-4
		Bromoform	75-25-2
		Bromomethane	74-83-9
		Carbon tetrachloride	56-23-5
		Chloroform	67-66-3
		Chloromethane	74-87-3
		Dibromochloromethane	124-48-1
		Dichlorodifluoromethane	75-71-8
		Dichloromethane	75-09-2
		Halomethanes	
		lodoform	75-47-8
		Trichlorofluoromethane	75-69-4
lothane	Organic	Halothane	151-67-7
loxyfop-methyl	Organic	Haloxyfop-methyl	69806-40-2
πήσηγ	Organic	Harmony	79277-27-3
rvade	Organic	Dimethipin	55290-64-7
ß		Hexachlorobenzene	118-74-1
8D		Hexachlorobutadiene	87-68-3
Blue 1		HC Blue 1	2784-94-3
CPD		Hexachtorocyclopentadiene	77-47-4
H		alpha-BHC	319-84-6
11	Olganic	beta-BHC	319-85-7
		gamma-BHC (Lindane)	58-89-9
		delta-BHC	319-86-8
Al · · · · · · · · · · · · · · · · · · ·		technicel-BHC	608-73-1
N	Inorganic		57-12-5
ptachlor		Heptachlor	76-44-8
ptachlor epoxide		Heptachlor epoxide	1024-57-3
		Heptane	142-82-5
		Methyl n-amyl ketone	110-43-0
X		Hexachlorocyclopentadiene	77-47-4
abromobenzene		Hexabromobenzene	87-82-1
kachlorobenzene		Hexachlorobenzene	118-74-1
kachlorobutadiene		Hexachlorobutadiene	87-68-3
kachlorocyclohexane		alpha-BHC	319-84-6
	1	beta-BHC	319-85-7
		gamma-BHC (Lindane)	56-89-9
		delta-BHC	319-86-8
		technical-BHC	608-73-1
kachiorocyclopentadiene	Organic	Hexachlorocyclopentadiene	77-47-4
achlorodibenzo-p-dioxin		Hexachlorodibenzo-p-dioxin	19408-74-3
kachloroethane		Hexachloroethane	67-72-1
kachlorophene		Hexachlorophene	70-30-4
kadrin	Organic		72-20-8
		RDX (Cyclonite)	121-82-4
	( Mianic		12 1-02-4
ahydro-1,3,5-trinitro-1,3,5-triazine			690-21-0
kahydro-1,3,5-trinitro-1,3,5-triazine kamethylphosphoramide	Organic	Hexamethylphosphoramide	680-31-9
ahydro-1,3,5-trinitro-1,3,5-triazine	Organic Organic		680-31-9 110-54-3 591-78-8

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	CONSTITUENT	Category	See Listing(s) Under:	CAS No.
4	Hexogen	Organic	RDX (Cyclonite)	121-82-4
·ŀ	1,6-Hexolactam		Caprolactam	105-60-2
ŀ	Hg		Mercury, inorganic	7439-97-6
ł	HoCl <sub>2</sub>		Marcuric chlorida	7487-94-7
	HHDN	Organic		309-00-2
	HMX	Organic	HMX	2691-41-0
- F	Hoe 39866		Glufosinate-ammonium	77182-82-2
	HxCDD		Hexachtorodibenzo-p-dioxin	19408-74-3
	Hydrazine		Hydrazine	302-01-2
	Hydrazine sulfate	Inorganic	Hydrazine sulfate	10034-93-2
	Hydrazobenzene		1,2-Diphenylhydrazine	122-68-7
	Hydrogen cyanide		Cyanide	57-12-5
	Hydrogen phosphide		Phosphine	7803-51-2
	Hydrogen selenide		Hydrogen selenide	7783075
	Hydrogen sulfide		Hydrogen sulfide	7783064
	3-Hydroxybutyric acid		beta-Butyrolactone	96-48-0
	4-Hydroxy-4-methyl-2-pentanone		Diacetone alcohol	123-42-2
	HyvarX or XL		Bromacil	
Ļ	Hyvar X or XL	Organic	Bromaci	314-40-9
		1	· · · · · · · · · · · · · · · · · · ·	
- 4		Inorganic		
	mazalil		imazalii	35554-44-0
	Imazaquin		Imazaguin	81335-37-7
	Imidamide		Amitraz	33089-61-1
	MPA		Isopropyl methyl phosphonic acid	1832-54-8
	indene	Organic		95-13-6
	indeno(1,2,3-c,d)pyrene		Indeno(1,2,3-c,d)pyrene	193-39-5
- [	N L5300		Express	101200-48-0
[	lodide	Inorganic	lodide	1
Ī	lodoform		lodoform	75-47-8
	prodione		Iprodione	36734-19-7
	Q	Organic		76180-96-6
- H	ron	Inorganic		7439-89-6
- H	soamyl acetate		Isoamyl acetate	123-92-2
	soamyl alcohol		Isoamy! alcoho!	123-51-3
	sobulanol		isobutyi alcohoi	78-83-1
-	· · · · ·		Isobutyl acetate	
	sobutyl acetate		Isobutyl alcohol	110-19-0
	sobutyl alcohol			78-83-1
	sobutyl carbinol		Isoamyi alcohol	123-51-3
	sophorone		Isophorone	78-59-1
	sopropalin		Isopropalin	33820-53-0
	sopropanol		Isopropanol	67-63-0
	sopropyl acetate		Isopropyl acetate	108-21-4
	sopropyl alcohol		Isopropanol	67-63-0
	sopropylamine		Isopropylamine	75-31-0
	sopropyl benzene		Cumene	98-82-8
	sopropyl-N-(3-chlorophenyl)carbamate		Chlorpropham	101-21-3
	sopropyl ether		Isopropyl ether	108-20-3
	sopropyl methylphosphonate		isopropyl methylphosphonate	
1	sopropyl methyl phosphonic acid	Organic	Isopropyl methyl phosphonic acid	1832-54-8
1	soxaben	Organic	Isoxaben	82558-50-7
ŀ	Karate	Organic	Cyhelothrin	68085-85-8
	(ármex	Organic	Diuron	330-54-1
	Kepone	Organic		143-50-0
	Kerb		Pronamide	23950-58-5
	Kerosene		Kerosene	8008-20-6
	Kerosine		Kerosene	8008-20-6
11				10000-20-0
I				
_	actofen	Omenia	Lactofan	77501 62 4
Ē	actofen	Organic		77501-63-4
Ĺ	ambast	Organic	Butachlor	23184-66-9
	ambast anex	Organic Organic	Butachlor Fluometuron	23184-66-9 2164-17-2
	ambast anex annate	Organic Organic Organic	Butachlor Fluometuron Methomyl	23184-66-9 2164-17-2 16752-77-5
	ambast anex annate asiocarpine	Organic Organic Organic Organic	Butachlor Fluometuror Methomyl Lasiocarpine	23184-66-9 2164-17-2 16752-77-5 303-34-4
	ambast anex annate asiocarpine asso	Organic Organic Organic Organic Organic	Butachlor Fluometuron Methomyl Lasiocarpine Alachlor	23184-66-9 2164-17-2 16752-77-5 303-34-4 15972-60-8
	ambast anex annate asiocarpine asso ead	Organic Organic Organic Organic Organic Inorganic	Butachlor Fluometuron Methomyl Lasiocarpine Alachlor Lead	23184-66-9 2164-17-2 16752-77-5 303-34-4 15972-60-8 7439-92-1
	ambast anex anate asiocarpine asso ead ead acetate	Organic Organic Organic Organic Organic Inorganic Organic	Butachlor Fluometuror Methomyl Lasiocarpine Alachlor Lead Lead	23184-66-9 2164-17-2 16752-77-5 303-34-4 15972-60-8 7439-92-1 301-04-2
	ambast anex anate asiccapine asicso ead ead acetate ead subacetate	Organic Organic Organic Organic Organic Inorganic Organic Organic	Butachlor Fluometuror Methomyl Lasicoarpine Alachlor Lead Lead Lead Lead Lead Lead Lead Lead	23184-66-9 2164-17-2 16752-77-5 303-34-4 15972-60-8 7439-92-1 301-04-2 1335-32-6
	ambast anex annate asiocarpine asso ead ead acetate ead subacetate ead, tetraethyl-	Organic Organic Organic Organic Organic Organic Organic Organic Organic	Butachlor Fluometuron Methomyl Lasiocerpine Alachlor Lead Lead acetate Lead sociate Lead subacetate Tetraethyl lead	23184-66-9 2164-17-2 18752-77-5 303-34-4 15972-60-8 7439-92-1 301-04-2 1335-32-6 78-00-2
	ambast anex annate asiocarpine asiocarpine asso ead ead acetate .ead subacetate .ead, tetraethyl- indane	Organic Organic Organic Organic Organic Organic Organic Organic Organic	Butachlor Fluometuron Methomyl Lasiocarpine Alachlor Lead Lead Lead sociate Lead subacetate Tetraethyl lead gamma-BHC (Lindane)	23184-66-9 2164-17-2 16752-77-5 303-34-4 15972-60-8 7439-92-1 301-04-2 1335-32-6
	ambast anex annate asiocarpine asso ead ead acetate ead acetate ead, tetraethyl- indane lnuron	Organic Organic Organic Organic Organic Organic Organic Organic Organic	Butachlor Fluometuron Methomyl Lasiocarpine Alachlor Lead Lead Lead sociate Lead subacetate Tetraethyl lead gamma-BHC (Lindane)	23184-66-9 2164-17-2 18752-77-5 303-34-4 15972-60-8 7439-92-1 301-04-2 1335-32-6 78-00-2
	ambast anex annate asiocarpine asiocarpine asso ead ead acetate .ead subacetate .ead, tetraethyl- indane	Organic Organic Organic Organic Organic Organic Organic Organic Organic	Butachlor Fluometuron Methomyl Lasiocarpine Alachlor Lead Lead Lead acetate Lead subacetate Lead subacetate Tetraethyl lead gamma-BHC (Lindane) Linuron	23184-66-9 2164-17-2 16752-77-5 303-34-4 15972-60-8 7439-92-1 301-04-2 1335-32-6 78-00-2 58-89-9
	ambast anex annate asiocarpine asso ead ead acetate ead acetate ead, tetraethyl- indane lnuron	Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic	Butachlor Fluometuron Methomyl Lasiocarpine Alachlor Lead Lead Lead acetate Lead subacetate Lead subacetate Tetraethyl lead gamma-BHC (Lindane) Linuron	23184-66-9 2164-17-2 18752-77-5 303-34-4 15972-60-8 7439-92-1 301-04-2 1335-32-6 78-00-2 58-89-9 330-55-2 83065-99-5
	ambast anex annate asiocarpine asso ead ead acetate ead subacetate indane indane inuron oridax	Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic	Butachlor Fluometuron Methomyl Lasiocarpine Alachlor Lead Lead Lead exetate Lead subacetate Tetraethyl iead gamma-BHC (Lindane) Linuron Londax	23184-66-9 2164-17-2 18752-77-5 303-34-4 15972-60-8 7439-92-1 301-04-2 1335-32-6 78-00-2 58-89-9 330-55-2
	ambast anex annate asiocarpine asso ead ead acetate ead subacetate indane indane inuron oridax	Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic	Butachlor Fluometuron Methomyt Lasiocarpine Alachlor Lead Lead acetate Lead subacatate Tetraethyl lead gamma-BHC (Lindane) Linuron Londax Chlorpyrifos	23184-66-9 2164-17-2 18752-77-5 303-34-4 15972-60-9 7439-92-1 301-04-2 1335-32-6 78-00-2 58-89-9 330-55-2 83055-99-6 2921-89-2
2) <u> </u>	ambast anate anate asiocarpine asiocarpine asso ead asso ead asso ead astractive ad subacetate ad, tetractivyl- indane inuron ondax orsban falathion	Organic Organic Organic Organic Inorganic Organic Organic Organic Organic Organic Organic Organic Organic	Butachlor Fluometuron Methomyl Lasiocarpine Alachlor Lead Lead Lead subacetate Lead subacetate Tetraethyl lead gamma-BHC (Lindane) Linuron Londax Chlorpyrifos Malathion	23184-66-9 2164-17-2 18752-77-5 303-34-4 15972-60-8 7439-92-1 301-04-2 1335-32-6 78-00-2 58-89-9 330-55-2 83055-99-6 2921-88-2 121-75-5
	ambast annate annate asiocarpine asso ead ead acetate ead, tetraethyl- indane i	Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic	Butachlor Fluometuron Methomyl Lasiocarpine Alachlor Lead Lead Lead acetate Lead subacetate Tetraethyl lead gamma-BHC (Lindane) Linuron Londax Chlorpyrifos Majathion Maleic anhydride	23184-66-9 2164-17-2 18752-77-5 303-34-4 15972-60-8 7439-92-1 301-04-2 1335-32-6 78-00-2 58-89-9 330-55-2 83055-99-6 2921-88-2 121-75-5 108-31-6
	ambast anex annate annate asincarpine asso ead ad acetate ead subacetate ead, tetraethyl- indane lnuron cordax cordan Alaithion Alaithion Alaic anhydride faleic anhydride	Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic	Butachlor Fluometuron Methomyl Lasiocerpine Alachlor Lead Lead acetate Lead subacetate Tetraethyl lead gamma-BHC (Lindane) Linuron Londax Chlorpyrifes Maletic anhydride Maleic hydrazide	23184-66-9 2164-17-2 18752-77-5 303-34-4 15972-60-8 7439-92-1 301-04-2 1335-32-6 78-00-2 58-89-9 330-55-2 83055-99-6 2921-88-2 121-75-5 108-31-6 123-33-1
	ambast anex annate annate annate asiocarpine aaso ead aso aaso ead aubacetate ead subacetate ead subacetate ead, tetraethyl- indane inuron ondax orsban Alaltion Alalci anhydride falsic hydrazide falsec hydrazide	Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic	Butachlor Fluometuron Methomyt Lasiocarpine Alachlor Lead Lead acetate Lead subacetate Tetraethyl lead gamma-BHC (Lindane) Linuron Londax Chlorpyrifes Maleic anhydride Maleic hydrazide Maneb	23184-66-9 2164-17-2 16752-77-5 303-34-4 15972-60-8 7439-92-1 301-04-2 1335-32-6 78-00-2 58-89-9 330-55-2 83065-99-6 2921-88-2 121-75-5 108-31-6 123-33-1 12427-38-2
	ambast annate annate asiocarpine asiocarpine asso ead asso ead asso ead asso ead asso ead asso asso asso asso asso asso asso as	Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic Inorganic Inorganic	Butachlor Fluometuron Methomyl Lasiocarpine Alachlor Lead Lead Lead subacetate Lead subacetate Tetraethyl lead gamma-BHC (Lindane) Linuron Londax Chlorpyrifos Malathion Maleic anhydride Maleic hydrazide Maneb Manganese	23184-66-9 2164-17-2 18752-77-5 303-34-4 15972-60-8 7439-92-1 301-04-2 1335-32-6 78-00-2 58-89-9 330-55-2 83065-99-8 2921-88-2 121-75-5 108-31-6 123-33-1 12427-38-2 7439-96-5
	ambast anex annate annate annate asiocarpine aaso ead aso aaso ead aubacetate ead subacetate ead subacetate ead, tetraethyl- indane inuron ondax orsban Alaltion Alalci anhydride falsic hydrazide falsec hydrazide	Organic Organic	Butachlor Fluometuron Methomyl Lasiocarpine Alachlor Lead Lead Lead subacetate Lead subacetate Tetraethyl lead gamma-BHC (Lindane) Linuron Londax Chlorpyrifos Malathion Maleic anhydride Maleic hydrazide Maneb Manganese	23184-66-9 2164-17-2 18752-77-5 303-34-4 15972-60-8 7439-92-1 301-04-2 1335-32-6 78-00-2 58-89-9 330-55-2 83065-99-6 2921-88-2 121-75-5 108-31-6 123-33-1 12427-38-2

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MCPA	Organic	See Listing(s) Under:	CAS
MCPB	Organic		94-74-0
MCPB	Organic		
MEA			93-65-2
		Ethanolamine	141-43-6
Me-A-alpha-C		Me-A-alpha-C	68006-8
MeHg		Methyl mercury	22967-9
MEK		Methyl ethyl ketone	78-93-3
Melphalan		Melohalan	148-82-3
Mepiquat chloride		Mepiquat chloride	24307-2
Mercuric chloride	Inorganic	Mercuric chloride	7487-94
Mercury, Inorganic	Inorganic	Mercury, inorganic	7439-97-
Mercury, methyl	Organic	Methyl mercury	22967-9
Merphos		Merphos	150-50-5
Merphos oxide		Merphos oxide	78-48-8
Mesityl oxide		Mesityl oxide	141-79-7
Mesitylene		1,3,5-Trimethylbenzene	
			108-67-8
Metalaxyi		Metalaxyl	57837-19
Metasulfuron methyl ester	Organic		74223-64
Methacrylonitrite		Methacrylonitrile	126-98-7
Methallyi chloride		3-Amino-9-ethylcarbazole hydrochloride	6109-97-
Methamidophos	Organic	Methamidophos	10265-92
Methanal		Formaldehyde	50-00-0
Methanecarboxamide		Acetamide	60-35-5
Methanes, halo-		Bromochloromethane	74-97-5
		Bromodichloromethane	75-27-4
		Bromoform	75-25-2
	[	Bromomethane	
			74-83-9
		Carbon tetrachloride	56-23-5
		Chloroform	67-66-3
		Chloromethane	74-87-3
		Dibromochloromethane	124-48-1
		Dichlorodifluoromethane	75-71-8
		Dichloromethane	75-09-2
		Halomethanes	
		lodoform	75-47-8
		Trichlorofluoromethane	75-69-4
Methanethiol			
		Methyl mercaptan	74-93-1
Methanol		Methanol	67-56-1
Methidathion		Methidathion	950-37-8
Methomyl		Methomyl	16752-77
o-Methoxyaniline	Organic	o-Anisidine	90-04-0
4-Methoxy-1,3-benzenediamine	Organic	2,4-Diaminoanisole	615-05-4
Methoxychlor	Organic	Methoxychlor	72-43-5
Methoxyphenylenediamine	Organic	2,4-Diaminoanisote	615-05-4
Methoxypropazine		Prometon	1610-18-
Methyl acetate		Methyl acetate	79-20-9
beta-Methyl acrolein		trans-Crotonaldehyde	4170-30-
Methyl acrylate		Methyl acrylate	
			96-33-3
Methyl acrylonitrile		Methyl acrylonitrile	126-98-7
Methyl alcohol		Methanol	67-56-1
Methylamine		Methylamine	74-89-5
Methyl ((4-aminophenyl)sulfonyl)carbamate	Organic		3337-71-
Methylamyl alcohol	Organic	Methyl isobutyl carbinol	108-11-2
Methyl n-amyl ketone	Organic	Methyl n-amyl ketone	110-43-0
N-Methylaniline		N-Methylaniline	100-61-8
5-Methyl-o-anisidine		p-Cresidine	120-71-8
2-Methyl-1-anthraquinonylamine		1-Amino-2-methylanthraquinone	82-28-0
2-Methylazindine		Propyleneimine	75-55-8
Methylbenzene	Organic		
Methyl bromide			108-88-3
		Bromomethane	74-83-9
3-Methyl-1-butanol		Isoamyl alcohot	123-51-3
3-Methyl-2-butanone		Methyl isopropyl ketone	563-80-4
Methyl t-butyl ether (MtBE)		Methyl t-butyl ether (MtBE)	1634-04-
Methyl n-butyl ketone	Organic	Methyl n-butyl ketone	591-78-6
Methyl chloride		Chloromethane	74-87-3
Methyl chloroform		1,1,1-Trichloroethane	71-55-6
Methylchioromethyl ether		Chloromethyl methyl ether	107-30-2
2-Methyl-4-chtorophenol		4-Chloro-o-cresol	
3-Methyl-4-chlorophenol			1570-64-5
		4-Chloro-m-cresol	59-50-7
3-Methyl-8-chlorophenol		6-Chloro-m-cresol	
2-Methyl-4-chlorophenoxyacetic acid	Organic		94-74-6
1-(2-Methyl-4-chlorophenoxy)butyric acid	Organic		94-81-5
2-(2-Methyl-4-chlorophenoxy)propionic acid	Organic	MCPP	93-65-2
3-Methylcholanthrene		3-Methylcholanthrene	56-49-5
5-Methylchrysene		5-Methylchrysene	3697-24-3
Nethylcyclohexane		Methylcyclohexane	108-87-2
/is-3-Methylcyclohexanol		cis-3-Methylcyclohexanol	
2-Methyl-4,6-dinitrophenol			25639-42
	Urganic	4,6-Dinitro-o-cresol	534-52-1
	A	4 At At a shift (D) and (D) an	
I, 4-Methylenebis(2-chloroaniline) I, 4-Methylenebis(N,N-dimethyl)anlline		4,4'-Methylenebis(2-chloroaniline) 4,4'-Methylenebis(N,N-dimethyl)aniline	101-14-4

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CONSTITUENT 1.4-Methylenebis(2-methylaniline)		See Listing(s) Under: 4,4-Methylenebis(2-methyleniline)	CAS N 838-88-0
Nethylenebis(ortho-toluidine)		4,4-Methylenebis(2-methylaniline)	838-88-0
Asthylene blue active substances			030-00-0
Aethylene chloride		Foaming agents (MBAS)	175-09-2
4-Methylenedianiline			101-77-9
4-Methylenedlanillne dihydrochloride		4,4'-Methylenedianiline	
.2-(Methylenedioxy)-4-propylbenzene		4,4'-Methylenedianiline dihydrochloride	13552-44-
		Dihydrosafrole	94-58-6
tethyl ethyl ketone		Methyl ethyl ketone	78-93-3
lethyl ethyl nitrosamine		N-Nitrosomethylethylamine	10595-95-
lethyl formate		Methyl formate	107-31-3
-Methyl-3-heptanone		Ethyl n-amyl ketone	108-68-3
-Methyl-2-hexanone		Methyl isoanyl ketone	110-12-3
lethy/hydrazine		Methylhydrazine	60-34-4
tethylhydrazine sulfate		Methylhydrazine sulfate	
lethyl Isoamyl ketone		Methyl isoamyl ketone	110-12-3
ethyl isobutenyl ketone		Mesityl oxide	141-79-7
lethyl isobutyl carbinol		Methyl isobutyl carbinol	108-11-2
lethyl isobutyl ketone (MIBK)		Methyl isobutyl ketone (MIBK)	108-10-1
Methyl-2-(p-(isopropyicarbamoyl)benzyi)hydrazine		Procarbazine	671-16-9
lethyl isopropyl ketone		Methyl isopropyl ketone	563-80-4
lethyl mercaptan		Methyl mercaptan	74-93-1
lethyl mercury		Methyl mercury	22967-92-6
lethyl methacrylate		Methyl methacrylate	80-62-6
lethyl methanesulfonale		Methyl methanesulfonate	66-27-3
-Methyl-1-nitroanthraquinone		2-Methyl-1-nitroanthraquinone	129-15-7
-Methylnitrobenzene		m-Nitrotoluene	1321-12-8
-Methyl-N'-nitro-N-nitrosoguanidine		N-Methyl-N'-nitro-N-nitrosoguanidine	70-25-7
ethylnitrosourea		N-Nitroso-N-methylurea	684-93-5
ethylnitrosourethane		N-Nitroso-N-methylurethane	615-53-2
-Methylolacrylamide		N-Methytotacrylamide	924-42-5
ethyl parathion		Methyl parathion	298-00-0
Methyl-2-pentanol		Methyl isobutyl carbinol	108-11-2
Methyl-2-pentanone		Methyl Isobutyl ketone (MIBK)	108-10-1
Methylphenol		o-Cresol	95-48-7
Methylphenol		m-Cresol	108-39-4
Methylphenol		p-Cresol	106-44-5
iethyl n-propyl ketone		Methyl n-propyl ketone	107-87-9
lethyl styrene		Vinyl toluene	25013-15-4
pha-Methylstyrene		alpha-Methylstyrene	98-83-9
-Methyl-4-tert-butylbenzene		p-tert-Butyltoluene	98-51-1
ethyithiofanate		Thiophanate-methyl	23564-05-6
lethylthiouracil		Methylthiouracii	56-04-2
lethy! viny! nitrosamine		N-Nitrosomethylvinylamine	4549-40-0
lethyl yellow		4-Dimethylaminoazobenzene	60-11-7
-Methyoxy-5-Methylaniline		p-Cresidine	120-71-8
etolachior		Metolachior	51218-45-2
etribuzin		Metribuzin	21087-64-9
etronidazole	Organic	Metronidazole	443-48-1
IAK	Organic	Methyl isoamyl ketone	110-12-3
IBC	Organic	Methyl isobutyl carbinol	108-11-2
IBK	Organic	Methyl Isobutyl ketone (MIBK)	108-10-1
ichler's ketone	Organic	Michler's ketone	90-94-8
ichter's methane		4,4'-Methylenebis(N,N-dimethyl)aniline	101-61-1
н	Organic	Procarbazine	671-16-9
ilogard	Organic	Propazine	139-40-2
irex	Organic		2385-85-5
itomycin C		Mitomycin C	50-07-7
ltoxan		Cyclophosphamide	50-18-0
MS		Methyl methanesulfonate	66-27-3
n	Inorganic	Manganese	7439-96-5
NNG	Organic	N-Methyl-N'-nitro-N-nitrosoguanIdine	70-25-7
NU		N-Nitroso-N-methylurea	684-93-5
o_′		Molybdenum	7439-98-7
olinate	Organic		2212-67-1
olybdenum		Molybdenum	7439-98-7
pnout		Flutolanil	66332-96-5
Dnitor		Methamidophos	10265-92-6
onochipramine		Chloramine	127-65-1
onochloroaceticacid		Chloroacetic acid	79-11-8
onochlorobenzene		Chlorobenzene	108-90-7
onocrotaline		Monocrotaline	315-22-0
proethanolamine		Ethanolamine	141-43-5
ononitrophenols		Nitrophenol	25154-55-6
an an the second se	Jugarite	2-Nitrophenol	25154-55-7
	[		
(Morpholinomethyl)-3-((5-nitrofurfurylidene)-amino]-2-oxalolidinone		4-Nitrophenol 5-(Morpholinomethyl)-3-[(5-nitrofurfurylidene)-amino]-2-oxatolidinone	25154-55-6
(Morphoinomeury)-3-((3-hitrotunuryildene)-aminoj-2-oxaioilanone PK		<u></u>	139-91-3
P <u>R</u>		Methyl t-butyl ether (MtBE)	107-87-9
<u> </u>	J Urganic	Manihi r-prihi stuel (WIRF)	1634-04-4
3	Inorganic	A	7440-23-5

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CONSTITUENT		See Listing(s) Under:	CASNO
laphthalene		Naphthalene	91-20-3
aphthalenes, chlorinated	Organic	Chiorinated naphthatenes	25586-43-0
		2-Chiorohaphthaiene	25586-43-0
Naphthalenesulfonic acid		Direct Black 38	1937-37-7
Naphthylamine		2-Naphthylamine	91-59-8
eta-Naphthylamine		2-Naphthylamine	91-59-8
apropamide		Napropamide	15299-99-7
DMA	Organic	N-Nitrosodimethylamine	62-75-9
DPA	Organic	N-Nitrosodiphenylamine	86-30-6
emacur	Organic	Fenamiphos	22224-92-6
eocidol		Diazinon	333-41-5
F 246		1-[(5-Nitrofurfurylidene)-amino]-2-ImIdazolidinone	555-84-0
FTA	Organic	N-[4-(5-Nitro-2-furyl)-2-thiazolyl]acetamide	531-82-8
		Chloramine	127-65-1
Н,		Ammonia	7664-41-7
H₄⁺ (ammonium)		Ammonia	7664-41-7
l	Inorganic		7440-02-0
ickel	Inorganic	Nickel	7440-02-0
ickel carbonyl		Nickel carbonyl	13463-39-3
ickel subsulfide	Inorganic	Nickel subsulfide	12035-72-2
ifuradene	Organic	1-((5-Nitrofurfurylidene)-amino]-2-imidazolidinone	555-84-0
ifurthiazole		2-(2-Formylhydrazino)-4-(5-nitro-2-furyi)thiazole	3570-75-0
itralin	Organic		4726-14-1
Itrate	Inorganic	Nitrate	14797-55-8
itrilotriacetate, trisodium monohydrate	Organic	Nitrilotriacetate, trisodium monohydrate	18662-53-8
itrilotriacetic acid		Nitrilotriacetic acid	139-13-9
itrite	Inorganic	Nitrite	14797-65-0
Niroacenaphihene		5-Nitroacenaphthene	602-87-9
-Nitro-o-anisidine		5-Nitro-o-anisidine	99-59-2
Itrobenzene		Nitrobenzene	98-95-3
Nitrochrysene		6-Nitrochrysene	7496028
iroethane		Nitroethane	79-24-3
itrofen	Organic		1836-75-5
itrofene	Organic		1836-75-5
Nitrofluorene		2-Nitrofluorene	607-57-8
itrofurazone		Nitrofurazone	59-87-0
[(5-Nltrofurfuryildene)-amino]-2-imidazolidinone		1-[(5-Nitrofurfurylidene)-amino]-2-imidazolidinone	555-84-0
		N-(4-(5-Nitro-2-furyl)-2-thiazolyl]acetamide	531-82-8
-[4-(5-Nitro-2-furyl)-2-thlazolyl]acetamide		Nitroguanidine	556-88-7
itroguanidine		Nitromethane	75-52-5
itromethane		Nitrophenoi	25154-55-6
trophenot	Organic	2-Nitrophenol	25154-55-7
		4-Nitrophenol	25154-55-6
A (fa	Omenia	2-Nitrophenol	25154-55-7
Nitrophenol			25154-55-8
Nitrophenol		4-Nitrophenol	25154-55-7
Nitrophenol		2-Nitrophenol	
Nitrophenol		4-Nitrophenol	25154-55-8
itrophenols	Organic	4,6-Dinitro-o-cresol	534-52-1
		2,4-Dinitrophenol	51-28-5
		Dinitrophenols	25550-58-7
		Nitrophenol	26154-55-6
		2-Nitrophenol	25154-55-7
		4-Nitrophenol	25154-55-8
		Nitrophenols	
		Trinitrophenol	88-89-1
Nitropropane		1-Nitropropane	108-03-2
Nitropropane	Organic	2-Nitropropane	79-46-9
Nitropyrene		1-Nitropyrene	5522-43-0
Nitropyrene		4-Nitropyrene	57835-92-4
itrosamines	Organic	Nitrosamines	
	1	N-Nitrosodi-n-butylamine	924-16-3
		N-Nitrosodiethanolamine	1116-54-7
		N-Nitrosodiethylamine	55-18-5
		N-Nitrosodimethylamine	62-75-9
		N-Nitrosodiphenylamine	86-30-6
		p-Nitrosodiphenylamine	156-10-5
		N-Nitrosodipropylamine	621-64-7
		N-Nitrosomethylethylamine	10595-95-6
		N-Nitrosomethylvinylamine	4549-40-0
<u> </u>		N-Nitrosopyrrolidine	930-55-2
Nitrosodi-n-butylamine	Organic	N-Nitrosodi-n-butylamine	924-16-3
Nitrosodiethanolamine		N-Nitrosodiethanolamine	1116-54-7
Nitrosodiethylamine		N-Nitrosodiethylamine	55-18-5
Nitrosodimethylamine		N-Nitrosodimethylamine	62-75-9
Nitrosodiphenylamine		N-Nitrosodiphenylamine	86-30-6
Nitrosodiphenylamine		p-Nitrosodiphenylamine	156-10-5
Nitrosodipropylamine		N-Nitrosodipropylamine	621-64-7
I AIR COCATIVI OF A GIT II II II II			621-64-7
	L A		
Nitrosodi-n-propylamine		N-Nitrosodipropylamine	
	Organic	N-Nitrosodipropylamine N-Nitroso-N-ethylurea N-Nitrosomethylethylamine	759-73-9

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CONSTITUENT		Categor	See Listing(s) Under:	CAS No
-Nitroso-N-methylurea			N-Nitroso-N-methylurea	684-93-5
-Nitroso-N-methylurea			N-Nitroso-N-methylurea	684-93-5
-Nitroso-N-methylurethane			N-Nitroso-N-methylurethene	615-53-2
-Nitrosomethylvinylamine			N-Nitrosomethylvinylamine	4549-40-0
-Nitrosomorpholine			N-Nitrosomorpholine	59-89-2
-Nitrosonomicotine			N-Nitrosonomicotine	16543-55-8
-Nitrosopiperidine			N-Nitrosopiperidine	100-75-4
-Nitrosopyrrolldine		Organic	N-Nitrosopyrrolidine	930-55-2
Nitrososarcosine	· · · · · · · · · · · · · · · · · · ·	Organic	N-Nitrososarcosine	13256-22-9
Nitrotoluene		Organic	m-Nitrotoluene	1321-12-8
0,		Inorganio	Nitrite	14797-65-0
0,	······································	Inorganie	Nitrate	14797-55-8
onachior	<u> </u>		trans-Nonachlor	39765-80-5
ans-Nonachior	· · · · · · · · · · · · · · · · · · ·		trans-Nonachlor	39765-80-5
onane			Nonane	111-84-2
onyiphenoi			Nonyiphenol	104405; 136
orflurazon			Norfurazon	27314-13-2
PN	· · · · · · · · · · · · · · · · · · ·		n-Propyl nitrate	
TA			Nitritotriacetic acid	627-13-4
		Organic		139-13-9
TA			Nitrilotriacetate, trisodium monohydrate	18662-53-8
uStar		Organic	NuStar	85509-19-9
2			Oxygen, dissolved	7782447
3		Inorganic		10028-15-6
chratoxin A			Ochratoxin A	303-47-9
ctabromodiphenyl ether			Octabromodiphenyl ether	32536-52-0
ctahydro-1,3,5,7-tetranitro-	1,3,5,7-tetrazocine	Organic		2691-41-0
ctane		Organic	Octane	111-65-9
dor		Inorganic		
1	· _ · _ · _ · _ · _ · _ ·		Oli & grease	
l & grease			Oil & grease	
mite			Propargite	2312-35-8
rdram			Motinate	2212-87-1
rthocide		Organic		
tho paraquat				133-06-2
			Paraguat	1910-42-5
yzalin			Oryzalin	19044-88-3
smium tetroxide			Osmium tetroxide	20816-12-0
sO <sub>4</sub>			Osmium tetroxide	20816-12-0
kadiazon	•		Oxadiazon	19666-30-9
camyl			Oxamyl	23135-22-0
drane		Organic	Ethylene oxide (ETO)	75-21-8
2'-Oxybis(1-chioropropane		Organic	Bis(2-chloroisopropyl) ether	39638-32-9
cychlordane		Organic	Oxychiordane	27304-13-8
4'-Oxydianiline		Organic	4,4'-Diaminodiphenyl ether	101-80-4
cyfluorfen			Oxyfluorfen	42874-03-3
kygen, dissolved			Oxygen, dissolved	7782447
one		Inorganic		10028-15-6
		Inorganic	Phosphorus	7723-14-0
clobutrazol				
iclobutrazol AHs		Organic	Paciobutrazol	76738-62-0
	······································	Organic	Paclobutrazol Acenaphthene	76738-62-0 83-32-9
		Organic	Paclobutrazol Acenaphthene Acenaphthylene	76738-62-0 83-32-9 208-96-8
		Organic	Paclobutrazol Acenaphthene Acenaphthylene Anthracene	76738-62-0 83-32-9 208-96-8 120-12-7
		Organic	Paclobutrazol Acenaphthene Acenaphthylene Anthracene Benz(a)anthracene	76738-62-0 83-32-9 208-96-8 120-12-7 56-65-3
		Organic	Paclobutrazol Acenaphthene Acenaphthylene Anthracene Benz(a)anthracene Benzo(b)fluoranthene	76738-62-0 83-32-9 208-96-8 120-12-7 56-55-3 205-99-2
		Organic	Paclobutrazol Acenaphthene Acenaphthylene Anthracene Benz(a)anthracene Benzo(i)fluoranthene Benzo(i)fluoranthene	76738-62-0 83-32-9 208-96-8 120-12-7 66-65-3 205-99-2 205-82-3
		Organic	Paclobutrazol Acenaphthene Acenaphthylene Anthracene Benza(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(k)fluoranthene	76738-62-0 83-32-9 208-96-8 120-12-7 56-55-3 205-99-2 205-82-3 207-08-9
		Organic	Paclobutrazol Acenaphthene Acenaphthylene Anthracene Benza(b)fluoranthene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(g,h,i)perylene	76738-62-0 83-32-9 208-96-8 120-12-7 56-55-3 205-99-2 205-82-3
		Organic	Paclobutrazol Acenaphthene Acenaphthylene Anthracene Benza(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(k)fluoranthene	76738-62-0 83-32-9 208-96-8 120-12-7 56-55-3 205-99-2 205-82-3 207-08-9
		Organic	Paclobutrazol Acenaphthene Acenaphthylene Anthracene Benza(b)fluoranthene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(g,h,i)perylene	76738-62-0 83-32-9 208-96-8 120-12-7 56-65-3 205-99-2 205-82-3 207-08-9 191-24-2 50-32-8
		Organic	Paclobutrazol Acenaphthene Acenaphthylene Anthracene Benzo(b)fluoranthene Benzo(l)fluoranthene Benzo(k)fluoranthene Benzo(a,h.i)perylene Benzo(a,b.iperylene	76738-62-0 83-32-9 208-96-8 120-12-7 56-55-3 205-99-2 205-82-3 207-08-9 191-24-2 50-32-8 218-01-9
		Organic	Paclobutrazol Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(k)fluoranthene Benzo(a,h,i)perylene Benzo(a)pyrene Chrysene	76738-62-0 83-32-9 208-96-8 120-12-7 56-55-3 205-99-2 205-82-3 207-08-9 191-24-2 50-32-8 218-01-9 53-70-3
		Organic	Paclobutrazol Acenaphthene Acenaphthylene Anthracene Benza(a)anthracene Benzo(b)fluoranthene Benzo(b)fluoranthene Benzo(a)prene Benzo(a)prene Chrysene Dibenz(a,h)anthracene 7H-Dibenzo(c,g)carbezole	76738-62-0 83-32-9 208-96-8 120-12-7 56-55-3 205-99-2 205-82-3 207-08-9 191-24-2 50-32-8 218-01-9 53-70-3 194-59-2
		Organic	Paclobutrazol           Acenaphthene           Acenaphthylene           Anthracene           Benzo(a)anthracene           Benzo(b)fluoranthene           Benzo(j)fluoranthene           Benzo(j)fluoranthene           Benzo(j)fluoranthene           Benzo(a)pyrene           Chrysene           Dibenzo(a,h)anthracene           Pri-Dibenzo(c,g)carbazole           Dibenzo(a,e)pyrene	76738-62-0 83-32-9 208-96-8 120-12-7 566-55-3 205-99-2 205-82-3 207-08-9 191-24-2 50-32-8 218-01-9 53-70-3 194-59-2 192-65-4
		Organic	Paclobutrazol Acenaphthene Acenaphthylene Anthracene Benzo(a)nthracene Benzo(j)fluoranthene Benzo(j)fluoranthene Benzo(k)fluoranthene Benzo(k)fluoranthene Benzo(a)prene Benzo(a)prene Chrysene Dibenz(a,h)anthracene TH-Dibenzo(c,g)carbezole Dibenzo(a,e)pyrene Dibenzo(a,h)pyrene	76738-62-0 83-32-9 208-96-8 120-12-7 56-55-3 205-99-2 205-82-3 207-08-9 191-24-2 50-32-8 218-01-9 53-70-3 194-59-2 192-65-4 189-64-0
		Organic	Paclobutrazol Acenaphthene Acenaphthylene Anthracene Benzo(a)nthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(k)fluoranthene Benzo(g,h,i)perylene Benzo(a)pyrene Chrysene Dibenzo(a,b)pyrene Dibenzo(a,b)pyrene Dibenzo(a,b)pyrene	76738-62-0 83-32-9 208-96-8 120-12-7 56-55-3 205-99-2 205-82-3 207-08-9 191-24-2 50-32-8 218-01-9 53-70-3 194-59-2 192-65-4 189-64-0 189-55-9
		Organic	Paclobutrazol Acenaphthene Acenaphthylene Anthracene Benza(a)anthracene Benzo(b)fluoranthene Benzo(c)fluoranthene Benzo(a)pyrene Chrysene Dibenz(a,h)anthracene 7H-Diberzo(a,p)grene Dibenzo(a,i)pyrene Dibenzo(a,j)pyrene Dibenzo(a,j)pyrene Dibenzo(a,j)pyrene	76738-62-0 83-32-9 208-96-8 120-12-7 566-55-3 205-99-2 205-82-3 207-08-9 191-24-2 50-32-8 218-01-9 53-70-3 194-59-2 192-65-4 189-65-9 191-30-0
		Organic	Paclobutrazol Acenaphthene Acenaphthylene Anthracene Benzo(b)fluoranthene Benzo(c)fluoranthene Benzo(c)fluoranthene Benzo(c)fluoranthene Benzo(c)fluoranthene Benzo(c)fluoranthene Benzo(c)fluoranthene Benzo(c)fluoranthene Benzo(c)fluoranthene Benzo(c)fluoranthene Benzo(c)fluoranthene Benzo(c)fluoranthene Dibenzo(c,g)carbazole Dibenzo(c,g)carbazole Dibenzo(c,g)carbazole Dibenzo(c,g)pyrene Dibenzo(c,g)pyrene Dibenzo(c,g)pyrene Dibenzo(c,g)pyrene Dibenzo(c,g)pyrene Dibenzo(c,g)pyrene Dibenzo(c,g)pyrene Dibenzo(c,g)pyrene Dibenzo(c,g)pyrene Dibenzo(c,g)pyrene Dibenzo(c,g)pyrene Dibenzo(c,g)pyrene Dibenzo(c,g)pyrene Dibenzo(c,g)pyrene	76738-62-0 83-32-9 208-96-8 120-12-7 566-55-3 205-99-2 205-82-3 207-08-9 191-24-2 50-32-8 218-01-9 53-70-3 194-59-2 192-65-4 189-65-9 191-30-0 57-97-6
		Organic Organic	Paclobutrazol Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(l)fluoranthene Benzo(l)fluoranthene Benzo(l)fluoranthene Benzo(l)fluoranthene Benzo(l)fluoranthene Benzo(l)perviene Benzo(la)prene Chrysene Dibenzo(la)prene Dibenzo(la)pyrene Dibenzo(la)	76738-62-0 83-32-9 208-96-8 120-12-7 56-55-3 205-99-2 205-82-3 207-08-9 191-24-2 50-32-8 218-01-9 53-70-3 194-59-2 192-65-4 189-64-0 189-55-9 191-30-0 57-97-6 206-44-0
		Organic Organic	Paclobutrazol Acenaphthene Acenaphthylene Anthracene Benzo(a)nturaene Benzo(l)fluoranthene Benzo(l)fluoranthene Benzo(l)fluoranthene Benzo(l)fluoranthene Benzo(l)fluoranthene Benzo(l)fluoranthene Benzo(l)fluoranthene Benzo(l)fluoranthene Benzo(l)fluoranthene Benzo(l)fluoranthene Benzo(l)fluoranthene Benzo(l, h)pyrene Dibenzo(l, h)pyrene Dibenzo(l	76738-62-0 83-32-9 208-96-8 120-12-7 56-55-3 205-99-2 205-82-3 207-08-9 191-24-2 50-32-8 218-01-9 53-70-3 194-59-2 192-65-4 189-64-0 189-55-9 191-30-0 57-97-6 206-44-0 86-73-7
		Organic Organic	Paclobutrazol Acenaphthene Acenaphthylene Anthracene Benza(a)anthracene Benzo(b)fluoranthene Benzo(b)fluoranthene Benzo(a)prene Benzo(a)pyrene Chrysene Dibenzo(a,h)anthracene 7H-Dibenzo(c,g)carbezole Dibenzo(a,h)pyrene Dibenzo(a,l)pyrene	76738-62-0 83-32-9 208-96-6 120-12-7 56-55-3 205-99-2 205-82-3 207-08-9 191-24-2 50-32-8 218-01-9 53-70-3 194-59-2 192-65-4 189-64-0 189-55-9 191-30-0 57-97-6 206-44-0
		Organic Organic	Paclobutrazol Acenaphthene Acenaphthylene Anthracene Benzo(b)fluoranthene Benzo(c)fluoranthene Benzo(c),fi)perylene Benzo(a, h)perylene Benzo(a, h)perylene Benzo(a, h)perylene Dibenzo(a, p)pyrene Dibenzo(a, p)pyrene PAHs	76738-62-0 83-32-9 208-96-8 120-12-7 56-55-3 205-99-2 205-82-3 207-08-9 191-24-2 50-32-8 218-01-9 53-70-3 194-59-2 192-65-4 189-64-0 189-55-9 191-30-0 57-97-6 206-44-0 86-73-7
		Organic Organic	Paclobutrazol Acenaphthene Acenaphthylene Anthracene Benza(a)anthracene Benzo(b)fluoranthene Benzo(b)fluoranthene Benzo(a)prene Benzo(a)pyrene Chrysene Dibenzo(a,h)anthracene 7H-Dibenzo(c,g)carbezole Dibenzo(a,h)pyrene Dibenzo(a,l)pyrene	76738-62-0 83-32-9 208-96-8 120-12-7 56-55-3 205-99-2 205-82-3 207-08-9 191-24-2 50-32-8 218-01-9 53-70-3 194-59-2 192-65-4 189-64-0 189-55-9 191-30-0 57-97-6 206-44-0 86-73-7
.H <b>s</b>		Organic Organic	Paclobutrazol Acenaphthene Acenaphthylene Anthracene Benzo(a)fluoranthene Benzo(l)fluoranthene Benzo(l)fluoranthene Benzo(l)fluoranthene Benzo(l)fluoranthene Benzo(l)fluoranthene Benzo(l)fluoranthene Benzo(l)fluoranthene Benzo(l)fluoranthene Benzo(l,h)prene Dibenzo(a,l)py	76738-62-0 83-32-9 208-96-8 120-12-7 56-65-3 205-99-2 205-82-3 207-08-9 191-24-2 50-32-8 218-01-9 53-70-3 194-59-2 192-65-4 189-64-0 189-55-9 191-30-0 57-97-6 206-44-0 86-73-7 193-39-5
		Organic Organic	Paclobutrazol Acenaphthene Acenaphthylene Anthracene Benzo(a)fluoranthene Benzo(l)fluoranthene Benzo(l)fluoranthene Benzo(l)fluoranthene Benzo(l)fluoranthene Benzo(l)fluoranthene Benzo(l)fluoranthene Benzo(l)fluoranthene Benzo(l)fluoranthene Benzo(l,h)prene Dibenzo(a,l)py	76738-62-0 83-32-9 208-96-8 120-12-7 566-55-3 205-99-2 205-82-3 207-08-9 191-24-2 50-32-8 218-01-9 53-70-3 194-59-2 192-65-4 189-55-9 191-30-0 57-97-6 206-44-0 86-73-7 193-39-5
.H <b>s</b>		Organic Organic	Paclobutrazol Acenaphthene Acenaphthylene Anthracene Benza(a)anthracene Benzo(b)fluoranthene Benzo(c)fluoranthene Benzo(a)pyrene Chrysene Dibenzo(a, h)perviene Benzo(a)pyrene Dibenzo(a, a)pyrene Dibenzo(a, h)pyrene Dibenzo(a, h)pyrene Phyrene Chrysene Dibenzo(b) pyrene Phyrene Chorinated paraffins	76738-62-0 83-32-9 208-96-8 120-12-7 56-55-3 205-99-2 205-82-3 207-08-9 191-24-2 50-32-8 218-01-9 53-70-3 194-59-2 192-65-4 189-65-9 191-30-0 57-97-6 206-44-0 86-73-7 193-39-5
raffins, chlorinaled		Organic Organic	Paclobutrazol Acenaphthene Acenaphthylene Anthracene Benzo(b)fluoranthene Benzo(c)fluoranthene Benzo(c)fluoranthene Benzo(a,h)perylene Benzo(a,h)perylene Benzo(a,h)perylene Dibenzo(a,p)pyrene Dib	76738-62-0 83-32-9 208-96-8 120-12-7 566-55-3 205-99-2 205-82-3 207-08-9 191-24-2 50-32-8 218-01-9 53-70-3 194-59-2 192-65-4 189-55-9 191-30-0 57-97-6 206-44-0 86-73-7 193-39-5 85-01-8 129-00-0 1910-42-5
raffins, chlorinated raquat rathion		Organic Organic	Paclobutrazol Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(j)fluoranthene Benzo(a)bjfluoranthene Benzo(a)bjfluoranthene Benzo(a)bjrene Benzo(a)bjrene Chrysene Dibenzo(a,bjprene Dibenzo(a,bjprene Dibenzo(a,bjprene Dibenzo(a,bjprene Dibenzo(a,bjprene Dibenzo(a,bjprene Fluorene Fluorene Fluorene Fluorene Fluorene Fluorene Parta Phenanthrene Pyrene Chrysene Paraquat Paraquat Paraduat	76738-62-0 83-32-9 208-96-8 120-12-7 56-65-3 205-99-2 205-82-3 207-08-9 191-24-2 50-32-8 218-01-9 53-70-3 194-59-2 192-65-4 189-64-0 189-65-9 191-30-0 57-97-6 206-44-0 86-73-7 193-39-5 85-01-8 129-00-0
raffins, chlorinated raquat rathion-methyl		Organic Organic	Paclobutrazol         Acenaphthene         Acenaphthylene         Anthracene         Benzo(a)anthracene         Benzo(b)fluoranthene         Benzo(a)nthracene         Benzo(a)nthracene         Benzo(a)nthracene         Benzo(a)prene         Chrysene         Dibenzo(a,b)prene         Pioranthene         Fluoranthene         Fluoranthene         Piorene         Indeno(1,2,3-c,d)pyrene         PAHs         Phenanthrene         Pyrene         Chlorinated paraffins         Paraquat         Paraquat         Paraquat         Parathion	76738-62-0 83-32-9 208-96-6 120-12-7 56-55-3 205-99-2 205-82-3 207-08-9 191-24-2 50-32-8 218-01-9 53-70-3 194-59-2 192-65-4 189-64-0 189-55-9 191-30-0 57-97-6 206-44-0 86-73-7 193-39-5 85-01-8 129-00-0
raffins, chlorinated raguat rathion		Organic Organic Organic Organic Organic Organic Organic Inorganic	Paclobutrazol         Acenaphthene         Acenaphthylene         Anthracene         Benza(a)anthracene         Benza(b)fluoranthene         Benzo(b)fluoranthene         Benzo(a)prene         Chrysene         Dibenzo(a, h)anthracene         Dibenzo(a, h)anthracene         ZH-Dibenzo(c,g)carbezole         Dibenzo(a, h)pyrene         Dibenzo(a, h)pyrene         Dibenzo(a, j)pyrene         Pluoranthene         Fluorene         Indeno(1, 2, 3-c, d)pyrene         Pyrene         Dibenzo(a)         Pyrene         Dibenzo(a, j)pyrene         Pyrene         Dibenzo(a, j)pyrene         Parathon         Paraquat<	76738-62-0 83-32-9 208-96-8 120-12-7 56-65-3 205-99-2 205-82-3 207-08-9 191-24-2 50-32-8 218-01-9 53-70-3 194-59-2 192-65-4 189-64-0 189-65-9 191-30-0 57-97-6 206-44-0 86-73-7 193-39-5 85-01-8 129-00-0 1910-42-5 56-38-2
raffins, chlorinated raquat rathion-methyl		Organic Organic Organic Organic Organic Organic Organic Organic	Paclobutrazol         Acenaphthene         Acenaphthylene         Anthracene         Benzo(a)anthracene         Benzo(b)fluoranthene         Benzo(a)nthracene         Benzo(a)nthracene         Benzo(a)nthracene         Benzo(a)prene         Chrysene         Dibenzo(a,b)prene         Pioranthene         Fluoranthene         Fluoranthene         Piorene         Indeno(1,2,3-c,d)pyrene         PAHs         Phenanthrene         Pyrene         Chlorinated paraffins         Paraquat         Paraquat         Paraquat         Parathion	76738-62-0 83-32-9 208-96-8 120-12-7 56-65-3 205-99-2 205-82-3 207-08-9 191-24-2 50-32-8 218-01-9 53-70-3 192-65-4 189-64-0 189-55-9 192-65-4 189-64-0 189-55-9 191-30-0 57-97-6 206-44-0 86-73-7 193-39-5 85-01-8 129-00-0 

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CONSTITUENT	Categor	See Listing(s) Under:	CAS No
PCNB		Pentachloronitrobenzene	82-68-8
PCP	Organic	Pentachiorophenol	87-86-5
		1.4-Dichlorobenzene	10 <del>0_46-</del> 7
endimethalin		Pendimethalin	404 <u>87-42-1</u>
enta		Pentachlorophenol	87-86-5
entabromodiphenyl ether		Pentabromodiphenyl ether	32534-81-9
entachlorobenzene	Organic	Pentachlorobenzene	608-93-5
entachloroethane	Organic	Pentachloroethane	76-01-7
entachioronitrobenzene	Organic	Pentachioronitrobenzene	82-68-8
entachlorophenol	Organic	Pentachlorophenol	87-86-5
Pentanal		n-Valeraldehyde	110-62-3
rentané		Pentane	109-66-0
-Pentanone		Methyl n-propyl ketone	107-87-9
-Pentanone		Diethyl ketone	96-22-0
erchiorate		Perchlorate	
erchlorobenzene		Hexachlorobenzene	440 74 4
			118-74-1
erchlorobutadiene		Hexachiorobutadiene	87-68-3
erchloroethane		Hexachloroethane	67-72-1
erchtoroethylene		Tetrachloroethylene (PCE)	127-18-4
'enflan		Tebuthiuron	34014-18-1
ermethrin		Permethrin	52645-53-1
etroleum hydrocarbons	Organic	Diesel Oil	68476-34-6
		Gasoline	8006-61-9
		Kerosene	8008-20-6
H	Inorganic	рн	
henacetin		Phenacetin	62-44-2
henamiphos		Fenamiphos	22224-92-6
henanihrene		Phenanthrene	85-01-8
henazopyridine		Phenazopyndine	94-78-0
henazopyridine hydrochloride		Phenazopyridine hydrochloride	136-40-3
henesterin		Phenesterin	3546109
henmedipham		Phenmedipham	13684-63-4
henobarbital		Phenobarbital	
henol	Organic		108-95-2
henois, chiorinated	Organic	Chlorinated phenols	
		4-Chioro-m-crasol	59-50-7
		4-Chloro-o-cresol	1570-64-5
		6-Chloro-m-cresol	
		2-Chlorophenol	95-57-8
		3-Chiorophenol	108-43-0
		4-Chlorophenol	106-48-9
	4	2.3-Dichlorophenol	576-24-9
		2,4-Dichlorophenol	
			120-83-2
		2,5-Dichloropheno!	583-78-8
		2,6-Dichlorophanol	87-65-0
	1	3,4-Dichlorophenol	95-77-2
		Pentachlorophenol	87-86-5
	1	2,3,4,6-Tetrachlorophenol	58-90-2
		2,3,5,6-Tetrachlorophenol	935-95-5
		2,4,5-Trichlorophenol	95-95-4
		2,4,6-Trichlorophenol	88-06-2
henols, nitro-	Organic	4,6-Dinitro-o-cresol	534-52-1
	0.90.00	2,4-Dinitrophenol	51-28-5
		Dinitrophenols	25550-58-7
	]		
		Nitrophenol	25154-55-6
	1	2-Nitrophenot	25154-55-7
		4-Nitrophenol	25154-55-8
		Nitrophenols	
		Trinitrophenol	88-69-1
nenois, non-chlorinated	Örganic	Phenols, non-chlorinated	
		Catechol	120-80-9
		m-Cresol	108-39-4
		o-Cresol	95-48-7
		p-Cresol	
		2,4-Dimethylphenol	105-67-9
		2,6-Dimethylphenol	576-26-1
	ł	3,4-Dimethylphenol	
			95-65-8
		4.6-Dinitro-o-cresol	534-52-1
		4,6-Dinitro-o-cyclohexyl phenol	131-89-5
		2,4-Dinitrophenol	51-28-5
		Dinitrophenols	25550-58-7
		Nitrophenol	25154-55-6
		2-Nitrophenol	25154-55-7
	1	4-Nitrophenol	25154-55-8
		Nitrophenols	
		Nonyiphenol	104405; 136
		Phenol	108-95-2
	1	Resorcinol	
		Trinitrophenol	108-46-3
		1 1 K 10 11 K 15 71 10 10 10 10	88-89-1
enoxybenzamine		Phenoxybenzamine	59-96-1

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siynentinated biphenyla	al algement.	olybrominated biphenyls	
neneegik	Organic I		1065265
ised	Organic 5		4021-80-5
			58-00-0
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		sHA	0-00-00
			9-65-56
			2-62-96
			0-44-0
			9-26-29
			0-00-16
			6-99-68
			0-19-68
			85-65-¢
			2-65-26
			6-02-69
			6-10-912
			8-22-8
			01-54-5
			02 85 3
			Z-66-502
			299-22-3
			2-21-02
			8-96-807
84N			33-35-6
nivens			1256-14-1
lydiem-songimi			53535-83-1
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cism	Organic		1208161
hinalic anhydride	Organic		6-11-58
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			84-72-0
			0-19-211
			120-61-6
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			84-99-5
			2-18-211
			2-24-29
			1-02-98
setsisrift	Organic		2-89-98
		state atelerity	
	]		84-72-0
			0-18-711
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			131-11-3
			131-11-3
			84-66-2
			2-18-211
			84-74-2
			1-02-98
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-Pherypropane hocate hocate hocatine hocatine hocatione hocatoxin hocatoxin	Organic Organic Inorganic Inorganic Inorganic	enorde en	7723-14-0 7803-51-2 732-11-6 732-11-6 732-11-6
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-Pherypropane hocate hocate hocatine hocatine hocatione hocatoxin hocatoxin	Organic Organic Organic Inorganic Inorganic Inorganic	enonerdejaes montedejaes enonerdejaes enonerdejaes jerest jerest jerest enifdeord enifdeord enifdeord enifdeord enifdeord	7723-14-0 786-95-2 732-11-6 732-11-6 732-11-6 732-11-6 732-11-6 732-11-6
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hostoxin hostoxin hostoxine hostoxin	Organic Organic Organic Organic Organic Organic Inorganic Inorganic	inenyi mercapian Anenyimercapian Acelopherone Acelopherone Acelopherete, sodium Acelopherete, sodium Acelopherete Acelophe	7723-14-0 7803-51-5 7803-51-5 86-85-8 132-27-4 132-57-4 132-57-4 132-57-4 132-57-4 132-57-4 132-57-4 132-57-4 132-57-4 132-57-4 132-57-5 122-57-57-5 122-57-57-57-57-57-57-57-57-57-57-57-57-57-
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hostoxin hostoxin hostoxine hostoxin	Organic Organic Organic Organic Organic Organic Organic Inorganic Inorganic	inenyi mercapian Anenyimercapian Acelopherone Acelopherone Shoshe Acelophere	1723-14-0 7803-61-2 732-11-6 732-11-6 89-85-8 89-86-5 132-52-4 106-88-2 89-86-5 132-52-4 106-88-2 100-83-0 100-83-0
hostoki hostok	Organic Organic Organic Organic Organic Organic Organic Inorganic Inorganic		1723-14-0 2803-81-5 238-05-5 238-05-5 135-51-4 238-05-5 135-52-4 23-84-6 85-36-4 23-68-2 23-78-2 23-78
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hostoki hostok	Organic Organic Organic Organic Organic Organic Organic Organic Organic Organic	inany fayciadyi ather Pranyfrayciadziae Pranyfrayciadziae Pranyfrayciadziae Presiptiene Prosphate prosphorus Prosphine Prosphi	1723-14-0 1723-14-0 1803-61-5 135-51-4 135-52-4 135-65-4 105-88-2 105-88-2 105-88-2 105-88-2 105-84-8 105-84-7 105
hostokianelemine hostokianelemine hostokiane hostok	<ul> <li>Organic</li> /ul>	วิทิตหู/ สนัคเ วิทิตหู/ สนัค กิษญ์/ มหารไกล ภาคราม	1723-14-0 7603-61-5 235-11-6 235-11-6 235-05-5 235-05-5 105-62-6 105-62-6 105-62-6 105-62-6 105-62-6 105-62-6 105-62-6 105-62-7 105-
Phenylethana Pheny	ບັງຊອກເດ ກາດເຊື້ອກເດ ກາດເຊື້ອກເດ ດ້າງຊອກເດ ດ້າງລາງ ດ້າງຊອກເດ ດ້າງຊອກເດ ດ້າງຊອກເດ ດ້າງຊອກເດ ດ້າງຊອກເດ ດ້າງຊອກເດ ດ້າງຊອກເດ ດ້າງຊອກເດ ດ້າງຊອກເດ ດ້າງຊອກເດ ດ້າງຊອກເດ ດ້າງຊອກເດ ດ້າງຊອກເດ ດ້າງ ດ້າງ ດ້າງ ດ້າງ ດ້າງ ດ້າງ ດ້າງ ດ້າ	Ethylbarzene Ethylaprzene henyl gycidyl afrer Prenyl gycidyl azine hydrochloride Prenylmarzuc acetate Prenylmerzuc acetate Presidene Preside	1100414 110414 1100
hostokianelemine hostokianelemine hostokiane hostok	ວາດອອກດີ ວາດອອກດີ ວາດອອກດີ ວາດອອກດີ ວາດອອກດີ ວາດອອກດີ ວາດອອກດີ ວາດອອກດີ ວາດອອກດີ ວາດອອກດີ ວາດອອກດີ ວາດອອກດີ ວາດອອກດີ ວາດອາກດີ ວາດອາກດີ ວາດອອອອອອອອອອອອອອອອອອອອອອອອອອອອອອອອອອອອ	า-Phenylenediamine อาการทรงกระสุกษ อาการที่ อย่ายเ วิทธาหู อาการกระสุกษ อาการทรงกระสุกษ อาการกระสุกษ อาการกระสุกษ อาการกระสุกษ อาการกระสุกษ อาการกระสุกษ อาการกระสุกษ อาการกระสุกษรรรรร อาการกระสุกษรรรรรรรรรรรรรรรรรรรรรรรรรรรรรรรรรรรร	1723-14-0 1723-14-0 1803-61-5 238-05-5 238-05-5 238-05-6 100-63-6 100-63-6 100-61-4 101-64-6 100-61-4 100-61-7 100
Prenylbulane Preny	ວາດອອກດີ ວາດອອກດີ ວາດອອກດີ ວາດອອກດີ ວາດອອກດີ ວາດອອກດີ ວາດອອກດີ ວາດອອກດີ ວາດອອກດີ ວາດອອກດີ ວາດອອກດີ ວາດອອກດີ ວາດອອກດີ ວາດອາກດີ ວາດອາກດີ ວາດອອອອອອອອອອອອອອອອອອອອອອອອອອອອອອອອອອອອ	i fredigierie fredigierie Fredigierie Entylberzene Entylberzene Entylberzene Entylperzene Fredigheri Fredigherie Fredigherie Fredigherie Fredigherie Fredigherie	1100414 110414 1104

## CROSS REFERENCE OF CHEMICAL NAMES

CONSTITUENT		See Listing(s) Under:	CAS No
Polychlorinated biphenyls		Polychlorinated biphenyls	1336-36-3
Polynuclear aromatic hydrocarbons	Organic	Acenaphthene	83-32-9
		Acenaphthylene	208-96-8
		Anthracene	120-12-7
		Benz(a)anthracene	56-55-3
		Benzo(b)fluoranthene	205-99-2
•		Benzo(j)fluoranthene	205-82-3
		Benzo(k)fluoranthene	207-08-9
·		Benzo(g,h,l)perylene	191-24-2
		Benzo(a)pyrene	50-32-8
		Chrysene	218-01-9
		Dibenz(a,h)anthracene	53-70-3
		7H-Dibenzo(c,g)carbazole	194-59-2
		Dibenzo(a,e)pyrene	192-65-4
		Dibenzo(a,h)pyrana	189-64-0
		Dibenzo(a,i)pyrene	189-55-9
		Dibenzo(a,I)pyrene	191-30-0
		7,12-Dimethylbenz(a)anthracene	57-97-6
		Fluoranthene	206-44-0
		Fluorene	86-73-7
		Indeno(1,2,3-c,d)pyrene	193-39-5
		PAHs	183-38-0
		Phenanthrene	85-01-8
		Pyrene	129-00-0
Ponceau MC		Ponceau MC	3761-53-3
Ponceau MX		Ponceau MC	3761-53-3
Ponceau 3R	Organic	Ponceau 3R	3564098
Potassium bromate	Inorganic	Potassium bromate	7758012
Potassium cyanide		Potassium cyanide	151-50-8
Potassium silver cyanide		Potassium silver cyanide	506-61-6
PTC	Organic		1929-77-7
Pramitol		Prometon	
			1610-18-0_
Princep		Simazine	122-34-9
Procarbazine		Procarbazine	671-16-9
Procarbazine hydrochloride	Organic	Procarbazine hydrochloride	366-70-1
Prochloraz		Prochloraz	67747-09-5
Profam	Organic	Propham	122-42-9
Prometon	Organic	Prometon	1610-18-0
Prometryn		Prometryn	7287-19-6
Pronamide		Pronamide	23950-58-5
Propachior		Propachior	
			1918-16-7
Propane	Organic		74-98-6
Propanes, dichloro-	Organic	1,2-Dichloropropane	78-87-5
		Dichloropropanes	26638-19-7
1,3-Propane sultone		1,3-Propane sultone	1120-71-4
Propanil	Organic		709-98-8
Propanoic acid	Organic	Propionic acid	93-65-2
I-Propanol	Organic	n-Propyl alcohol	71-23-8
Propargite	Organic	Propargite	2312-35-8
Propargyl alcohol		Propargyl alcohol	107-19-7
Propazine		Propazine	139-40-2
Propene		Propylene	
-Propeneamide			115-07-1
		Acrylamide	79-06-1
-Propenenitrile	Organic	Acrylonitrile	107-13-1
Propenes, dichloro-		1,3-Dichloropropene	542-75-8
		Dichloropropenes	
-Propenoic acld		Acrylic acid	79-10-7
ropenyl alcohol	Organic	Aliyi alcohoi	107-18-6
-propenyl chloride	Organic	3-Chloropropene	107-05-1
ropham		Propham	122-42-9
rophos	Organic		122-42-9
ropiconazole		Propiconazole	60207-90-1
eta-Propiolactone		beta-Propiolactone	
ropionic acid			57-57-8
		Propionic acid	93-65-2
ropoxur	Organic		114-26-1
-Propyl acetate		n-Propyl acetate	109-60-4
Propyl alcohol		n-Propyl alcohol	71-23-8
ropylene	Organic	Propylene	115-07-1
ropylene dichloride		1,2-Dichloropropane	78-87-5
ropyteneimine		Propyleneimine	75-55-8
ropylene oxide		Propylene oxide	
Propyl nitrate			75-56-9
		n-Propyl nitrate	627-13-4
ropylthiouracil		Propylthiouracil	
Propynol		Propargyl alcohol	107-19-7
ropyzamide	Organic	Pronamide	23950-58-5
rowi	Organic	Pendimethalin	40487-42-1
russite		Cyanogen	460-19-5
ursuit	Organic		81335-77-5
		ulouk	61335-//-5
	O	Pydrin	<b>F</b> AAAA
yrana	Organic Organic		<u>51630-58-1</u> 129-00-0

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NSTITUENT	· · · · · · · · · · · · · · · · · · ·	See Listing(s) Under:	CAS No
alphos		Quinalphos	13593-03-8
ofop-elhyl	Organic		76578-14-8
one		Quinone	108-51-4
tozine	Organic	Pentachioronitrobenzene	82-68-8
Ra	liporaenic	Radium-226 + Radium-228	7440-14-4
τα		Radium-226 + Radium-228	7440-14-4
oactivity, Gross Alpha		Radioactivity, Gross Alpha	
oactivity, Gross Beta		Radioactivity, Gross Beta	
um-226 + Radium-228		Radium-226 + Radium-228	7440-14-4
	Inorganic		14859-67-7
······································		Systhane	88671-89-0
rod		Propachlor	1918-16-7
(Cyclonite)	Organic	RDX (Cyclonite)	121-82-4
BX	Organic	N-Nitrosodiphenylamine	86-30-6
008	Organic	Diquat	85-00-7
prpine		Reservine	50-55-5
nethrin		Resmethnin	10453-86-8
proinol		Resorcinol	108-46-3
rd		Maleic hydrazide	123-33-1
	Inorganic		14859-67-7
len		Vinclozolin	50471-44-8
none		Rotenone	83-79-4
ndup		Glyphosate	1071-83-6
al		Iprodione	36734-19-7
5474	Organic	Traiomethrin	66841-25-8
harin		Saccharin	81-07-2
>le	Organic		94-59-7
<u>Y</u>	Organic		78587-05-0
		Antimony	7440-36-0
1382		Resmethdn	10453-86-8
ter		Imazaquin	81335-37-7
		Selenium	7782-49-2
nium		Selenium	7782-49-2
oxydim		Sethoxydim	74051-80-2
eable solids		Settleable solids	63-25-2
<u> </u>	Inorganic		7440-22-4
<u>f</u>		Silver cyanide	506-64-9
r cyanide		Potassium silver cyanide	506-61-6
r potassium cyanice		2,4,5-TP (Silvex)	93-76-5
zine		Simazine	122-34-9
ar	Organic		5902-51-2
a)	Inorganic		
um	inorganic		7440-23-5
um azide		Sodium azide	26628-22-8
um cyanida		Sodium cyanide	143-33-9
um diethyldithiocarbamate		Sodium diethyldithiocarbamate	148-18-5
um fluoroacetate		Sodium fluoroacetate	62-74-8
um o-phenytphenate		o-Phenylphenate, sodium	132-27-4
		Fluridone	59756-60-4
ific conductance (EC)		Specific conductance (EC)	
		Tebuthiuron	34014-18-1
		Strontium	7440-24-6
		Strontlum-90	
gmatocystin		Sterigmatocystin	10048-13-2
Seal		o-Phenylphenate, sodium	132-27-4
kade		Cypermethrin	52315-07-8
Mold		o-Phenylphenate, sodium	132-27-4
tozocin		Streptozotocin	18883-68-4
tozotocin	Organic	Streptozotocin	18883-66-4
tium	Inorganic	Strontium	7440-24-6
		Strontium-90	
hnine		Strychnine	57-24-9
	Organic		100-42-5
ne oxide		Styrene oxide	96-09-3
		Metalaxyl	57637-19-1
r of lead		Lead acetate	301-04-2
		Sulfaliate	95-06-7
te	Inorganic		
namide		Chiorsulfuron	64902-72-3
nimide	Organic		2425061
r dioxide		Sulfur dioxide	7446095
	Organic	Butylate	2008-41-5
		-	88671-89-0
	Organic		0-69-110001
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hane			
nane	Organic	Demeton	

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CONSTITUENT		See Listing(s) Under:	CAS No
TBA		tert-Butyl alcohol	75-65-0
TBT		TributyItin	688-73-3
1,1,1-TCA	Organic	1,1,1-Trichloroethane	71-55-6
1,1,2-TCA	Organic	1,1,2-Trichloroethane	79-00-5
2,3,7,8-TCDD (Dioxin)	Organic	2,3,7,8-TCDD (Dioxin)	1746-01-6
TCE	Organic	Trichloroethylene (TCE)	79-01-6
TDS		Total dissolved solids (TDS)	
Tebuthiuron		Tebuthiuron	34014-18-1
TEDP		Tetraethyldithiopyrophosphate	
			3689-24-5
		Tetraethyl lead	78-00-2
Telone	Organic	1,3-Dichloropropene	542-75-6
		1,2-Dichloropropane	78-87-5
Temik		Aldicarb	116-06-3
Terbacil	Organic	Terbacil	5902-51-2
Terbufos	Organic	Terbufos	13071-79-9
Terbutryn	Organic	Terbutryn	886-50-0
Terracior		Pentachloronitrobenzene	82-68-8
1,2,4,5-Tetrachlorobenzene		1,2,4,5-Tetrachlorobenzene	95-94-3
2,3,7,8-Tetrachlorodibenzo-p-dioxin		2,3,7,8-TCDD (Dioxin)	1746-01-6
1,1,1,2-Tetrachloroethane		1,1,1,2-Tetrachloroethane	630-20-6
1,1,2,2-Tetrachioroethane		1,1.2,2-Tetrachloroethane	79-34-5
Tetrachloroethene		Tetrachloroethylene (PCE)	127-18-4
Tetrachtoroethylene (PCE)		Tetrachioroethylene (PCE)	127-18-4
Tetrachloromethane	Organic	Carbon tetrachloride	56-23-5
2,3,4,6-Tetrachiorophenol	Organic	2,3,4,6-Tetrachlorophenol	58-90-2
2,3,5,6-Tetrachiorophenol		2,3,5,6-Tetrachiorophenol	935-95-5
Tetrachlorovinphos		Tetrachlorovinphos	961-11-5
Tetrachlorvinphos		Tetrachlorovinphos	961-11-5
Tetraethyldithiopyrophosphate		Tetraethyldithiopyrophosphate	3689-24-5
Tetraethyl lead		Tetraethyl lead	78-00-2
Tetramethyldiaminobenzophenone		Michler's ketone	90-94-8
1,4,5,8-Tetraminoanthraguinone	Organic	Disperse Blue 1	2475-45-8
Tetranitromethane	Organic	Tetranitromethane	509-14-8
Th	Inorganio	Thallium	7440-28-0
Thallium		Thallium	7440-28-0
Thimet		Phorate	298-02-2
Thioacetamide		Thioacetamide	62-55-5
Thiobencarb			
		Thiobencarb	28249-77-6
Thiocarb		Sodium diethyldithiocarbamate	148-18-5
Thiodan		Endosulfan	115-29-7
4,4'-Thiodianitine	Organic	4,4'-Thiodianillne	139-65-1
Thiophanate-methy!	Organic	Thiophanate-methyl	23564-05-8
Thiophenol	Organic	Phenyl mercaptan	108-98-5
Thiophos	Organic	Parathion	56-38-2
Thiotepa		Tris(1-aziridinyl)phosphine sulfide	52-24-4
Thiourea		Thiourea	62-56-6
Thiram	Organic		
			137-26-8
ſHMs	Organic	Bromodichloromethane	74-97-5
		Bromoform	75-25-2
		Chloroform	67-66-3
		Dibromochloromethane	124-48-1
Thriafur	Organic	2-Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazole	712-68-5
fin, tributyl-		Tributvitin	688-73-3
INT		Trinitrotoluene (TNT)	612-82-8
p-Tolidine		3,3'-Dimethylbenzidine	
p-Tolidine hydrochloride	Organic	3.3'-Dimethylbenzidine dihydrochloride	118-96-7
· · · · · · · · · · · · · · · · · · ·			119-93-7
		Toluene	108-88-3
2,4-Toluenediamine		2,4-Diaminotoluene	95-60-7
oluene diisocyanate		Toluene diisocyanate	26471-62-5
foluenes, dinitro-	Organic	2,4-Dinitrotoluene	121-14-2
		2,6-Dinitrotoluene	606-20-2
		Dinitrotoluenes	25321-14-6
-Totuidine hydrochtoride	Organic	o-Toluidine hydrochloride	636-21-5
-Toluldine		o-Totuldine	95-53-4
olyl chloride		Benzyl chloride	
ordon			100-44-7
		Picloram Table desetter (TDO)	1918021
otal dissolved solids (TDS)		Total dissolved solids (TDS)	
oxaphene		Toxaphene	8001-35-2
.4,5-TP (Silvex)	Organic	2,4,5-TP (Silvex)	93-76-5
ralomethrin		Tratomethrin	66841-25-6
reflan		Trifluratio	1582-09-8
riallate	Organic		2303-17-5
riașulfuron		Triasulturon	
· · · · · · · · · · · · · · · · · · ·			82097-50-5
2,4-Tribromobenzene		1,2,4-Tribromobenzene	615-54-3
ribromomethane		Bromoform	75-25-2
ribufos	Organic	Merphos	150-50-5
ributyltin		Tributyltin	688-73-3
richlorion		Trichlorfon	52-68-6
richloroacetaldehyde	Organic		75-87-6
Incritoroacetalderiyde			
richloroacetaldehyde, hydrated		Chloral hydrate	302-17-0

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t

CONSTITUENT		See Listing(s) Under:	CAS NO
Trichloroacetonitrile		Trichloroacetonitrile	545-06-02
1,2,4-Trichiorobenzene		1,2,4-Trichlorobenzene	120-82-1
1,3,5-Trichlorobenzene		1,3,5-Trichlorobenzene	108-70-3
Trichlorobenzenes	Organic	1,2,4-Trichlorobenzene	120-82-1
•		1,3,5-Trichlorobenzene	108-70-3
		Trichlorobenzenes	12002-48-1
unsymmetrical-Trichlorobenzene	Organic	1,2,4-Trichlorobenzene	120-82-1
1,1,1-Trichloroethane	Organic	1,1,1-Trichloroethane	71-55-6
1,1,2-Trichloroethane	Organic	1,1,2-Trichloroethane	79-00-5
1,1,1-Trichloro-2,2-ethanedic	Organic	Chloral hydrate	302-17-0
Trichloroethene	Organic	Trichloroethylene (TCE)	79-01-6
Trichloroethylene (TCE)	Organic	Trichloroethylene (TCE)	79-01-6
Trichloroethylidene ghycol	Organic	Chloral hydrate	302-17-0
Trichlorofluoromethane		Trichlorofluoromethane	75-69-4
Trichloromethane		Chloroform	67-66-3
(Trichloromethyl)benzene		Benzotrichloride	98-07-7
N-Trichloromethylmercapto-tetrahydrophthalimide	Organic		133-06-2
2,4,5-Trichlorophenol		2,4,5-Trichlorophenol	95-95-4
2,4,6-Trichlorophenol		2,4,6-Trichiorophenoi	
			88-06-2
2,4,5-Trichlorophenoxyacelic acid	Organic		93-76-5
2,4,5-Trichlorophenoxypropionic acid		2,4,5-TP (Silvex)	93-76-5
1,1,2-Trichloropropane		1,1,2-Trichloropropane	598-77-6
1,2,3-Trichloropropane		1,2,3-Trichloropropane	96-18-4
alpha,alpha,alpha-Trichlorotoluene		Benzotrichloride	98-07-7
Trichlorotrifluoroethane		1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1
1,1,2-Trichloro-1,2,2-trifluoroethane		1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1
Trichlorphon		Trichlorfon	52-68-6
Tridiphane		Tridiphane	58138-08-2
Triethylamine		Triethylamine	121-44-8
Trifluratin		Trifluralin	1582-09-8
Triglycine		Nitrilotriacetic acid	139-13-9
Trihalomethanes		Bromodichloromethane	75-27-4
	Ci guino	Bromotorm	75-25-2
		Chloroform	67-66-3
		Dibromochloromethane	124-48-1
	0.000		
Trilodomethane		lodoform	75-47-8
Trimethylamine		Trimethylamine	75-50-3
1,3,5-Trimethylbenzene		1,3,5-Trimethylbenzene	108-67-8
symmetrical-Trimethylbenzene		1,3,5-Trimethylbenzene	108-67-8
1,3,5-Trinitrobenzene		1,3,5-Trinitrobenzene	99-35-4
Trinitroglycerol		Trinitroglycerol	
Trinitrophenol		Trinitrophenol	88-89-1
Trinitrotoluene (TNT)		Trinitrotoluene (TNT)	118-96-7
Tris(1-aziridinyi)phosphine sulfide	Organic	Tris(1-aziridinyi)phosphine sulfide	52-24-4
Tris(2,3-dibromopropyl)phosphate	Organic	Tris(2,3-dibromopropyl)phosphate	126-72-7
Trisodium altrilotriacetate	Organic	Nitrilotriacetate, trisodium monohydrate	18662-53-8
Trithion	Organic	Trithlon	786-19-6
Tritum	Inorganic		10028-17-8
Trp-P-1		Tryptophan-P-1	62450-06-0
Гр-Р-2		Tryptophan-P-2	62450-07-1
Tryptophen-P-1		Tryptophan-P-1	62450-06-0
Tryptophan-P-2		Tryptophan-P-2	62450-07-1
Furbacil	Organic		5902-51-2
	Inorganic		3802-01-2
furbidity	Inforganic	r ur unun y	
	1	( Jacobian 1997)	
J •	Inorganic		7440-61-1
JDMH		1,1-Dimethylhydrazine	57-14-7
Jranlum	Inorganic		7440-61-1
Jrethane		Urethane	51-79-6
Jrox	Organic	Bromacil	314-40-9
/	Inorganic	Vanadium	7440-62-2
n-Valeraldehyde		n-Valeraldehyde	110-62-3
/anadium		Vanadium	7440-62-2
/C		Vinyl chloride	75-01-4
/egadex		Sulfallate	95-06-7
/elpar		Hexazinone	51235-04-2
/erdict		Haloxyfop-methyl	69806-40-2
/emem	Organic		1929-77-7
/emolate	Organic		
			1929-77-7
		Vinclozolin	50471-44-8
/inyl acetate		Vinyl acetate	108-05-4
/inylbenzene	Organic		100-42-5
/inyl bromide	Organic	Vinyl bromide	593-60-2
	Organic	Vinyl chloride	75-01-4
/inyl chloride			107-13-1
/inyl chloride	Organic	A G YOT ILLING	
rinyl chloride rinyl cyanida	Organic	1,3-Butadiene	
/inyl chloride /inyl cyanide /inylethylene	Organic Organic	1,3-Butadiene	106-99-0
/inyl chtoride /inyl cyanide /inylethylene /inylidene chloride	Organic Organic Organic	1,3-Butadiene 1,1-Dichloroethylene	106-99-0 75-35-4
/inyl chloride /inyl cyanide /inylidhylene /inylidhene chloride /inyl toluene	Organic Organic Organic Organic	1,3-Butadiene	106-99-0

Water Quality Goals - August 2000

CONSTITUENT	Category See Listing(s) Under:	CAS No.
Vydate	Organic Oxamyt	23135-22-0
V Wanfarin	Organic Warfarin	81-81-2
Waxes, chiorinated	Organic Chlorinated paraffins	
m-Xylene	Organic Xylene(s)	1330-20-7
o-Xylene	Organic Xylene(s)	1330-20-7
p-Xylene	Organic Xylene(s)	1330-20-7
Xylene(s)	Organic Xylene(s)	1330-20-7
asymmetrical-m-Xylenol	Organic 2,4-Dimethylphenol	105-67-9
2,4-Xylidine	Organic 2,4-Xylidine	1300-73-8
2,6-Xylldine	Organic 2,6-Xylidine	87-62-7
Zinc	Inorganic Zinc	7440-66-6
Zinc cyanide	Inorganic Zinc cyanide	557-21-1
Zinc phosphide	Inorganic Zinc phosphide	1314-84-7
Zineb	Organic Zineb	12122-67-7
Ziram	Organic Ziram	137-30-4
Zn	Inorganic Zinc	7440-86-6

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## 10435

# WATER QUALITY GOALS FOR

# INORGANIC CONSTITUENTS

A Compilation of Water Quality Goals --- August 2000 Edition

Other	Action Levels	stet2 simotil60	Health Goal (PHG) In Drinking Water (Office of Environmental	Drinking Water Standards (California & Federal) Maximum Contantation (MCLs) California Dept.of Health Services U.S. Environmental Protection Agency							
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				(99) 0007	┢┈───┤	(99) 000#	<u></u>	(001, 66, 100)			
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Water Quality Goals - August 2000

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Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

### USEPA National Recommended Amblent Water Quality Criteria Freshwater Aquatic Life Protection Human Health and Welfare Protection **One-In-a-Million Cancer Risk Estimate** Non-Cancer Health Effects Recommended Criteria Other Waters Continuous Maximum **Toxicity Information** Sources of Other Waters Sources of RGANIC **Drinking Water** (aquatic organism **Drinking Water** (aquatic organism Taste & Odor Concentration Concentration Instantaneous (Lowest Observed Effect Level) STITUENT (water+organisms) consumption only) (water+organisms) consumption only) or Welfare (4-day Average) 24-hour Average (1-hour Average) Maximum Chronic Acute Other 20,000 (9,51) tv 750 (2,62) 87 (2,62) um um phosphide see page 13 see page 13 าเล vium sulfamate 14 (2) 4300 (2) 9000 1600 610 (38) ny 0.14 (2,94) 150 (1) 340 (1) 0.018 (2,94) 7 MFL (101) OS. 1000 (51) 130 5.3 m im oxide m sulfate е see page 15 (1) see page 15 (1) un. ) disulfide тіпе 230,000 (4) 860,000 (4) 11 (98) 19 (98) e dioxíde see page 17 (1) see page 17 (1) ium (III) 11 (1) 16 (1) ium (VI) ium (total) (51,130) (51,131) 1300 1000 see page 18 (1) see page 18 (1) <sup>-</sup> cyanide í **vity** 220,000 5.2 (137) 22 (137) 700 e gen bromide gen chloride ine ine sulfate jen selenide en sulfide 2 (51) 300 (51) 1000 (51) see page 19 (1) see page 19 (1) 100 (51,127) 50 (51) nese ic chloride 0.050 (2) 0.051 (2) 0.77 (1,140) 1.4 (1,140) y, inorganic lenum 610 (2) 4600 (2) see page 20 (1) see page 20 (1) carbonyt subsulfide 10,000 (51,89)

## WATER QUALITY GOALS FOR INORGANIC CONSTITUENTS in ug/l (ppb) unless noted

Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

	California Toxics Rule Criteria (USEPA) Inland Surface Waters Enclosed Bays & Estuaries											
	Human Health (3		Freshwate	Human Health	Saltwater Aquatic Life Protection							
	Drinking Water Sources	Other Waters	Continuous	Maximum	Intection	(30-day Average)	Continuous	OIDCLION				
GANIC	(consumption of water	(aquatic organism	Concentration	Concentration	Instantaneous	aquatic organism	Concentration	Maximum Concentration	Instantaneous			
TITUENT	and aquatic organisms)	consumption only)	(4-day Average)	(1-hour Average)	Maximum	consumption only	(4-day Average)	(1-hour Average)	Maximum			
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n												
n phosphide							•					
3												
um suffamate												
/	14 (2)	4300 (2)				4300 (2)			·			
			150 (1,142)	340 (1,142)			36 (1,142)	69 (1,142)				
<u> </u>	7 MFL (101,143)											
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n oxide		······································										
n sulfate				<u> </u>	·······							
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			000 000 45 (4 4 40)		=		0.0 (( 440)	40.44.440				
n disulfide			see page 15 (1,142)	see page 15 (1,142)			9.3 (1,142)	42 (1,142)				
ine			<u> </u>									
				<u>├───</u> ──┦					········			
				<u>├</u>								
				·								
dloxide												
um (III)			see page 16 (1,143)	see page 16 (1,143)								
ım (VI)			11 (1,142)	16 (1,142)			50 (1,142)	1100 (1,142)				
um (total)		······································		· · · · · · · · · · · · · · · · · · ·								
				i i								
	1300 (2,142)		see page 18 (1,142)	see page 18 (1,142)			3.1 (1,142)	4.8 (1,142)				
cyanide												
íty												
	700 (142)	220,000 (142)	5.2 (142,143)	22 (142,143)		220,000 (142)	1 (142,143)	1 (142,143)	······			
en bromide												
en chloride												
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ne sulfate	<u>_</u>			<u> </u>								
n selenide				┞		<u> </u>		┝━────┤				
n sulfide				· · · ·				L				
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			10/4		······							
			see page 19 (1,142)	see page 19 (1,142)		<u> </u>	8.1 (1,142)	210 (1,142)				
ese				┟───────┤		├		······································				
chloride	0.05 (2,142)	0.054 (0.440)		<b>├─────</b> ┤		0.054 (0.410)			·			
inorganic	0.05 (2,142)	0.051 (2,142)				0.051 (2,142)		┝╍─────				
num	610 (2,142)	4600 (2,142)	000 000 00 (4 440)			4600 (2 440)	0.0 /4 4 40	74/4400				
arbonyi	010 (2,14 <u>2</u> )	4000 (2,142)	see page 20 (1,142)	see page 20 (1,142)		4600 (2,142)	8.2 (1,142)	74 (1,142)				
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Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

			lifornia Water G			9 5	USEPA National Recommended Ambient Water Quality Criteria Saltwater Aquatic Life Protection							
	Human Health (30-day Average)		Marine Aquatic Life Protection					Recommended Criteria Continuous Maximum				Toxicity Information		
RGANIC STITUENT	aquatic organism consumption only	6-month Median	30-day Average	7-day Average	Daily Maximum	Instantaneous Maximum	Concentration	34 bour Augure	Concentration (1-hour Average)	Instantaneous Maximum			(fect Level) Other	
				Average			(+usy Average)							
<u>۷</u>	_ <u></u> }	·			<b></b>							·	┿┈───	
um phosphide	<del></del>		<u> </u>		╂_───────────────────────	<u> </u>			}			}		
ni prospince		600 (89)			2400 (89)	6000 (89)	35 (112)		233 (112)			· · · · · · · · ·		
ium sulfamate													-	
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Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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ແມ	2-86-6672	ON		
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	1-05-055 (			
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## 100 100 spilos eid 09 09 0S (001) olaz 300 PCI/r (100) 4 mrem/yr 5 pCi/L (001) CIBZ 2 pC/L 1-226 + Radium-228 (001) Ovez 50 pCi/L ctivity, Gross Beta (00L) OI92 15 PCIVL (110) 12 PCNL (110) ctivity, Gross Alpha ium silver cyanide ebineyo mui etsmond mut (921) 2.0 SUTION OF CONTRACT STREET ztimu č.8 or č.8 81 (921) 92'0 Devlossib ,r 15 (156) ebixordet m stimu blodzendt E stinu blodzendt 6 (E01) 0001 (68) 0001 (601) 0001 1000 (103) Secondary MCL spiouserul MCL Goal Secondary MCL Primary MCL Primary MCL. TNBUTITE TobO & etssT **Vibixo**T (InemiceszA Taste & Odor (Department of Health Services) brezeH rttleeH U.S. Environmental Protection Agency California Dept. of Health Services SINABR Other California State Action Levels Istnemnonivn3 to eoithO) (sJOM) zievel insnimeinoù mumizeM In Drinking Water (Istebe? & sintotils) sbisbust? teteW gailanit@ (OHG) (603) (PHG) California Public

## WATER QUALITY GOALS FOR INORGANIC CONSTITUENTS in ug/l (ppb) unless noted

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Water Quality Goals - August 2000

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(18) UTN E.0/2.0/0.1

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Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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000'009

250,000

0.2ug/L = 0.2pCi/L (100)

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(001) Olez

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Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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STITUENT	(water+organisms	consumption only)			or Welfare	(4-day Average)	24-hour Average	(1-hour Average)	Maximum	Acute	Chronic	Other
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1-226 + Radium-228										······································		
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: conductance (EC)						<b>)</b>						
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Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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	Human Health		Water Q			L	, е Я	риешшо:		etij olteup. Eiz			
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Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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υŻ 9-99-0442 ินเก Λ 7440-62-2 ū 1-19-0442 n A 10028-17-8 HE (SOT) sbillos beviosai SOL ū 7440-28-0 Ē 2446095 (ioxide =+05 06-wr -508 Sr Sr 7440-24-6 w OB Conductivity (OB) eonatoubrico : Cyanide, sodium 143 33 8 ebineyo i Whipos 'epizy' epize i S6628-22-8 eN 2440-23-5 -î Cyanide, silver epiue/: 6-1/9-905 δ¥ 7440-22-4 spilos eld 2-67-2821 θS ш 1-14859-67-7 υŊ ER822 + ER825 7-41-0447 822-mulben + 822-r Cross Beta radioactivity stea seone , yhvita Gross Alpha radioactivity etivity, Gross Alpha Silver potassium cyanide 9-19-909 inu siyver cyanide Cyanide, potassium 121-20-8 epineyo mui elemond mul Z108677 7723-14-0 รณอเ Hydrogen phosphide 2-12-2092 BUIL smoudsoud age notetheoned +H to pol eviden eter +00 60 10058-12-6 Dissolved Oxygen οđ 20 7782447 periossib , 70\$O 0-21-91802 ebixortet n -20N 0-59-26271 snolfsiverddA bns smynony2 **TedmuN** TNBUTITS Registry SINABS Service Abstracts IssimedO

WATER QUALITY GOALS FOR INORGANIC CONSTITUENTS in ug/l (ppb) unless noted

Water Quality Goals - August 2000 Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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1-12-299

Cyanide, zinc.

WATER	QUALITY GOA	LS FOR I	INORGANIC	CONSTITUENTS
	FRESHWATER	AQUATIC	LIFE - AN	IMONIA

						USEP	A Natio	onal Ar	nbient		Quality				Fresh	water A	quatic	Life					Γ
	<u></u>										otai Am												ł
1 1	L						Cont	Indous	Conc	entrati	on, 30-	day Avg	<u>. (mg t</u>	1/L)‡							Maximum C	oncentration	1
			Fis	sh Earl	y Life	Stage	s Prese	nt					FI	sh Ear	ly Life	Stage	s Abse	nt			1-hour Ave	L (ma N/L)	
		, , , , , , , , , , , , , , , , , , ,				ature,										ature,					Salmonida	Salmonids	
pН	0	14	16	18	20	22	24	26	28	30	0-7	8		10	11	12	13	14	15 †	16 †	Present	Absent	L
6.5	6.67	6.67	6.06	5.33	4.68	4.12	3.62	3.18	2.80	2.46	10.8	10.1	9.51	8.92	8.36	7.84	7.35	6.89	6.46	6.06	32.6	48.8	
6.6	6.57	6.57	5.97	5.25	4.61	4.05	3.56	3.13	2.75	2.42	10.7	9.99	9.37	8,79	8.24	7.72	7.24	6.79	6.36	5.97	31.3	46.8	F
6.7	6.44	6.44	5.86	5.15	4.52	3.98	3.50	3.07	2.70	2.37	10.5	9.81	9.20	8.62	8,08	7.58	7.11	6.66	6.25	5.86	29.8	44.6	
6.8	6.29	6.29	5.72	5.03	4.42	3.89	3.42	3.00	2.64	2.32	10.2	9.58	8.98	8.42	7.90	7.40	6.94	6.51	6.10	5.72	28.0	42.0	
6.9	6.12	6.12	5.56	4.89	4.30	3.78	3.32	2.92	2.57	2.25	9.93	9.31	8.73	8.19	7.68	7.20	6.75	6.33	5.93	5.56	26.2	39.2	
7.0	5.91	5.91	5.37	4.72	4.15	3.65	3.21	2.82	2.48	2.18	9.60	9.00	8.43	7.91	7.41	6.95	6.52	6.11	5.73	5.37	24,1	36.1	17
7.1	5.67	5.67	5.15	4.53	3.98	3.50	3.08	2.70	2.38	2.09	9.20	8.63	8.09	7.58	7.11	6.67	6.25	5.86	5.49	5.15	21.9	32,9	17
7.2	5.39	5.39	4.90	4.31	3.78	3.33	2.92	2.57	2.26	1.99	8.75	8.20	7.69	7.21	6.76	6.34	5.94	5.57	5.22	4.90	19.7	29,5	17
7.3	5.08	5.08	4.61	4.06	3.57	3.13	2.76	2.42	2.13	1.87	8.24	7.73	7.25	6.79	6.37	5.97	5.60	5.25	4.92	4.61	17.5	26.2	- 17
7.4	4.73	4.73	4.30	3.78	3.32	2.92	2.57	2.26	1.98	1.74	7.69	7.21	6.76	6.33	5.94	5.57	5.22	4.89	4.59	4.30	15,3	23.0	- 17
7.5	4.36	4.36	3.97	3.49	3.06	2.69	2.37	2.08	1.83	1.61	7.09	6.64	6.23	5.84	5.48	5.13	4.81	4.51	4.23	3.97	13.3	19.9	17
7.6	3.98	3.98	3.61	3.18	2.79	2.45	2.16	1.90	1.67	1.47	6.46	6.05	5.67	5.32	4.99	4.68	4.38	4.11	3.85	3.61	11.4	17.0	17
7.7	3.58	3.58	3.25	2.86	2.51	2.21	1.94	1.71	1.50	1.32	5.81	5.45	5.11	4.79	4.49	4.21	3.95	3.70	3.47	3.25	9.64	14.4	17
7.8	3.18	3.18	2.89	2.54	2.23	1.96	1.73	1.52	1.33	1.17	5.17	4.84	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89	8.11	12,1	
7.9	2.80	2.80	2.54	2.24	1.96	1.73	1.52	1.33	1.17	1.03	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89	2.71	2.54	6.77	t0,1	
0.8	2.43	2.43	2.21	1.94	1.71	1.50	1.32	1,16	1.02	0.897	3.95	3.70	3.47	3.26	3.05	2.86	2.68	2.52	2.36	2.21	5.62	8,41	
8.1	2.10	2.10	1.91	1.68	1.47	1.29	1.14	1.00	0.879	0.773	3.41	3.19	2.99	2.81	2.63	2.47	2.31	2.17	2.03	1.91	4.64	6.95	
8.2	1.79	1.79	1.63	1.43	1.26	1.11	0.973	0.855	0.752	0.661	2.91	2.73	2.56	2.40	2.25	2.11	1.98	1.85	1.74	1.63	3.83	5.73	17
8.3	1.52	1.52	1.39	1.22	1.07	0.941	0.827	0.727	0.639	0.562	2.47	2.32	2.18	2.04	1.91	1.79	1.68	1.58	1.48	1.39	3.15	4.71	1
8.4	1.29	1.29	1.17	1.03	0,906	0.796	0.700	0.615	0.541	0.475	2.09	1.96	1.84	1.73	1.62	1.52	1.42	1.33	1.25	1.17	2.59	3.88	17
8.5	1.09	1.09	0.990	0.870	0.765	0.672	0.591	0.520	0.457	0.401	1.77	1.66	1.55	1.46	1.37	1.28	1.20	1.13	1.06	0.990	2.14	3.20	
8.6	0.920	0.920	0.836	0.735	0,646	0.568	0.499	0.439	0.386	0.339	1.49	1.40	1.31	1.23	1.15	1.08	1.01	0.951	0.892	0.836	1.77	2.65	17
8.7	0.778	0.778	0.707	0.622	0.547	0.480	0.422	0.371	0.326	0.287	1.26	1.18	1.11	1.04	0.976	0.915	0.858	0.805	0.754	0.707	1.47	2.20	
8.8	0.661	0.661	0.601	0.528	0.464	0.408	0.359	0.315	0.277	0.244	1.07	1.01	0.944	0.885	0.829	0.778	0.729	0.684	0.641	0.601	1.23	1.84	h
8.9	0.565	0.565	0.513	0.451	0.397	0.349	0.306	0.269	0.237	0.208	0.917	0.860	0.806	0.756	0.709	0.664	0.623	0.584	0.548	0.513	1.04	1.56	1
9.0	0.486	0.486	0.442	0.389	0.342	0.300	0.264	0.232	0.204	0.179	0.790	0.740	0.694	0.651	0.610	0.572	0.536	0.503	0.471	0.442	0.885	1.32	8

Notes:

1 At 15 C and above, the oriterion for fish early life stages absent is the same as the criterion for fish early life stages present.

‡ In addition, the highest four-day average within the 30-day period should not exceed 2.5 times the Criteria Continuous Concentration shown in the above table.

## Criteria Continuous Concentration 30-day average total ammonia nitrogen (in mg N/L) ‡

when fish early life stages are present:

$$CCC = \left(\frac{0.0577}{1+10^{7.688-\text{pH}}} + \frac{2.487}{1+10^{\text{pH}-7.688}}\right) \times \text{MIN}\left(2.85, 1.45 \times 10^{0.028 \times (25-7)}\right)$$

when fish early life stages are absent:

$$CCC = \left(\frac{0.0577}{1+10^{7.688-pH}} + \frac{2.487}{1+10^{pH-7.688}}\right) \times 1.45 \times 10^{0.028 \times \{25-MAX(T,7)\}}$$

where T = temperature in degrees C

<u>Criteria Maximum Concentration</u> 1-hour average total ammonia nkrogen (in mg N/L)

## where salmonid fish are present:

$$CMC = \frac{0.275}{1+10^{7204-pH}} + \frac{39.0}{1+10^{pH-7.204}}$$

where salmonid fish are not present:

$$CMC = \frac{0.411}{1+10^{7.204-pH}} + \frac{58.4}{1+10^{pH-7.204}}$$

Water Quality Goals - August 2000

## From Reference 25.

## WATER QUALITY GOALS FOR INORGANIC CONSTITUENTS SALTWATER AQUATIC LIFE - AMMONIA

									110119 6	O Prote	<u>ct saitw</u>	<u>ater Aq</u>	uatic Li	fe		
h								Total Ar	nmonia							
0	Criter	ia Con	tinuous	Concer	ntration	s, 4-da	y Avg. (	mg/t)	Crit	erla Ma:	ximum C	oncent	rations.	1-houi	Avg. (m	ig/L)
				Temper	ature, C				-			Temper	ature, C			
	0	5	10	15	20	25	30	35	0	5	10	15	20	25	30	35

			3	alinity	= 10 g/K	g		
7.0	41	29	20	14	9.4	6.6	4.4	3.1
7.2	26	18	12	8.7	5.9	4.1	2.8	2.0
7.4	17	12	7.8	5.3	3.7	2.6	1.8	1.2
7.6	10	7.2	5.0	3.4	2.4	1.7	1.2	0.84
7.8	6.6	4,7	3.1	2.2	1.5	1.1	0.75	0.53
8.0	4.1	2.9	2.0	1.40	0.97	0.69	0.47	0.34
8.2	2.7	1.8	1.3	0.87	0.62	0.44	0.31	0.23
8.4	1.7	1.2	0.81	0.56	0.41	0.29	0.21	0.16
8.6	1.1	0.75	0.53	0.37	0.27	0.20	0.15	0.11
8.8	0.69	0.50	0.34	0.25	0.18	0.14	0.11	0.08
9.0	0.44	0.31	0.23	0.17	0.13	0.10	0.08	0.07

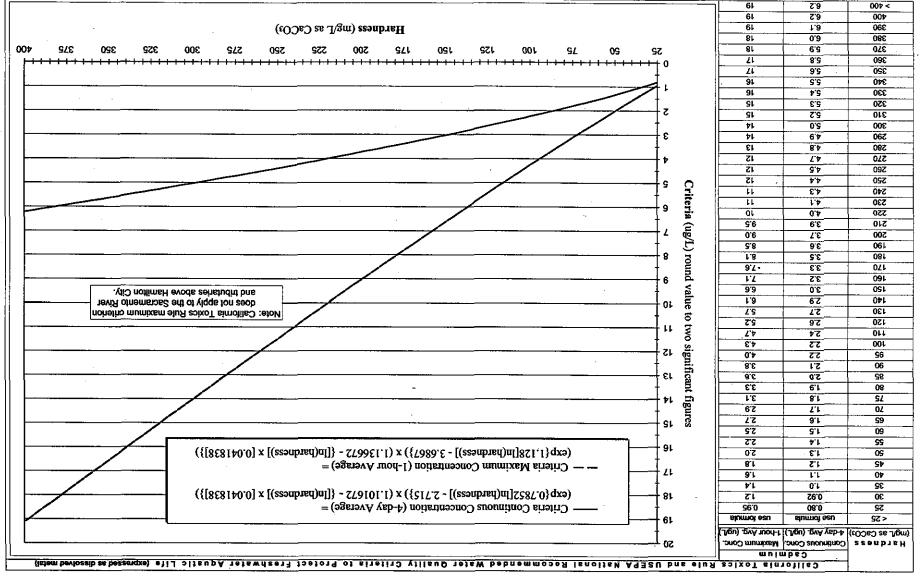
			9	• 10 g/K	alinity			
ן ר	_21	29	44	62	92	131	191	270
7 I	13	19	27	40	58	83	121	175
	8.3	12	14	25	35	52	77	110
	5.6	7.7	11	16	23	33	48	69
	3.5	5.0	7.1	10	15	21	31	44
	2.3	3.1	4.6	6.4	9.4	13	19	27
	1.5	2.1	2.9	4.2	5.8	8.5	12	18
ור	1.0	1.4	1.9	2.7	3.7	5.4	7.9	11
	0.75	0.98	1.3	1.8	2.5	3.5	5.0	7.3
	0.56	0.71	0.92	1.2	1.7	2.3	3.3	4.6
Ĩ.	0.44	0.52	0.67	0.85	1.1	1.5	2.1	2.9

			S	alinity	= 20 g/k	g		
7.0	44	30	21	14	9.7	6.6	4.7	3.1
7.2	27	19	13	9.0	6.2	4.4	3.0	2.1
7.4	18	12	8.1	5.6	4.1	2.7	1.9	1.3
7.6	11	7.5	5.3	3.4	2.5	1.7	1.2	0.84
7.8	6.9	4.7	3.4	2.3	1.6	1.1	0.78	0.53
8.0	4.4	3.0	2.1	1,5	1.0	0.72	0.50	0.34
8.2	2.8	1.9	1.3	0.94	0.66	0.47	0.31	0.24
8.4	1.8	1.2	0.84	0.59	0.44	0.30	0.22	0.16
8.6	1.1	0.78	0.56	0.41	0.28	0.20	0.15	0.12
8.8	0,72	0.50	0.37	0.26	0.19	0.14	0.11	0.08
9.0	0.47	0.34	0.24	0.18	0.13	0.10	0.08	0.07

		S	alinity	= 20 g/k	g			
291	200	137	96	64	44	31	21	
183	125	87	60	42	29	20	14	
116	79	54	37	27	18	12	8.7	
73	50	35	23	17	11	7.9	5.6	Γ
46	31	23	15	11	7.5	5.2	3.5	
29	20	14	9.8	6.7	4.8	3.3	23	i [
19	13	8.9	6.2	4.4	3.1	2.1	1.6	· [
12	8.1	5.6	4.0	2.9	2.0	1.5	1,1	
7.5	5.2	3.7	2.7	1.9	1.4	1.0	0.77	Γ
4.8	3.3	2.5	1.7	1.3	0.94	0.73	0.56	
3.1	2.3	1.6	1.2	0.87	0.69	0.54	0.44	

	Salinity = 30 g/kg									Salinity = 30 g/kg							
7.0	47	31	. 22	15	11	7.2	5.0	3.4	312	208	148	102	71	48	33	23	7.0
7.2	29	20	14	9.7	6.6	4.7	3.1	2.2	196	135	94	64	44	31	21	15	7.2
7.4	19	13	8.7	5.6	4.1	2.9	2.0	1.4	125	85	58	40	27	19	13	9.4	7.4
7.6	12	8.1	5.6	3.7	3.1	1.8	1.3	0.90	79	54	37	25	21	12	8.5	6.0	7.6
7.8	7.5	5.0	3.4	2.4	1.7	1.2	0.81	0.56	50	33	23	16	11	7.9	5.4	3.7	7.8
8.0	4.7	3.1	2.2	1.6	1.1	0.75	0.53	0.37	31	21	15	10	7.3	5.0	3.5	2.5	8.0
8.2	3.0	2.1	1.4	1.0	0.69	0.50	0.34	0.25	20	14	9.6	6.7	4.6	3.3	2.3	1.7	8.2
8.4	1.9	1.3	0.90	0.62	0.44	0.31	0.23	0.17	12.7	8.7	6.0	4.2	2.9	2.1	1.6	1.1	8.4
8.6	1.2	0.84	0.59	0.41	0.30	0.22	0.16	0.12	8.1	5.6	4.0	2.7	2.0	1.4	1.1	0.81	8.6
8.8	0.78	0.53	0.37	0.27	0.20	0.15	0.11	0.09	5.2	3.5	2.5	1.8	1.3	1.0	0.75	0.58	8.8
9.0	0.50	0.34	0.26	0.19	0.14	0.11	0.08	0.07	3.3	2.3	1.7	1.2	0.94	0.71	0.56	0.46	9.0

## FRESHWATER AQUATIC LIFE - CADMIUM FRESHWATER AQUATIC LIFE - CADMIUM

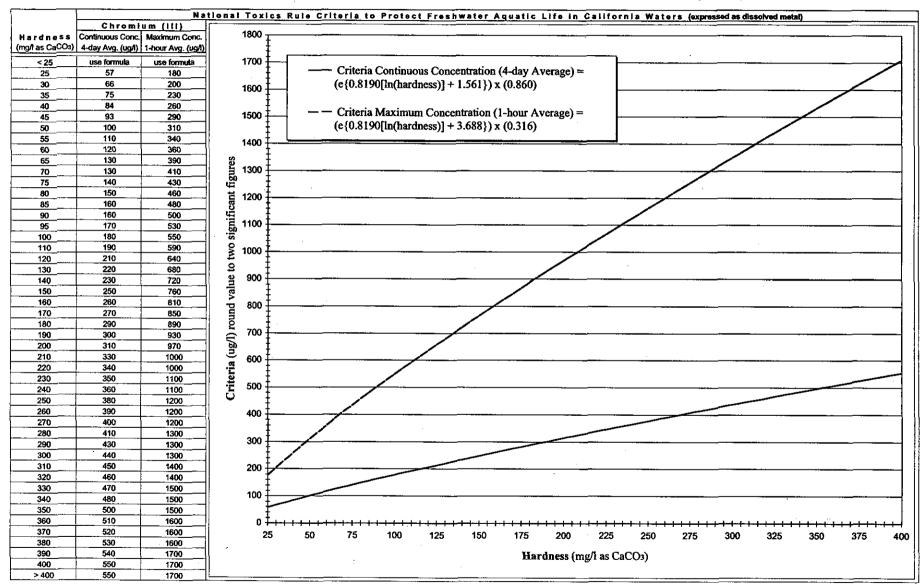


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From References 17 and 26.

Water Quality Goals - August 2000

## WATER QUALITY GOALS FOR INORGANIC CONSTITUENTS FRESHWATER AQUATIC LIFE - CHROMIUM (111)



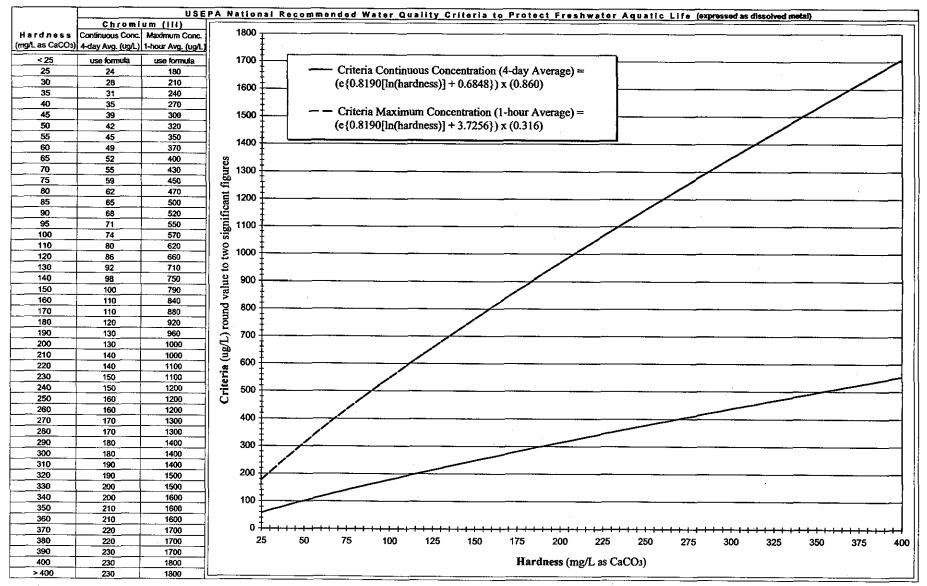
Water Quality Goals - August 2000

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From References 17 and 23.

## WATER QUALITY GOALS FOR INORGANIC CONSTITUENTS FRESHWATER AQUATIC LIFE - CHROMIUM (III)



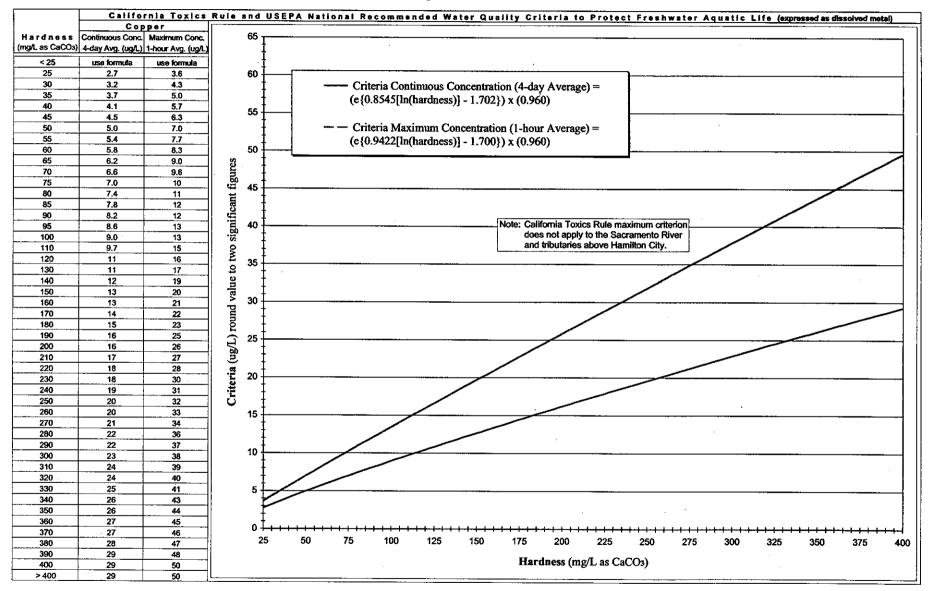
Water Quality Goals - August 2000

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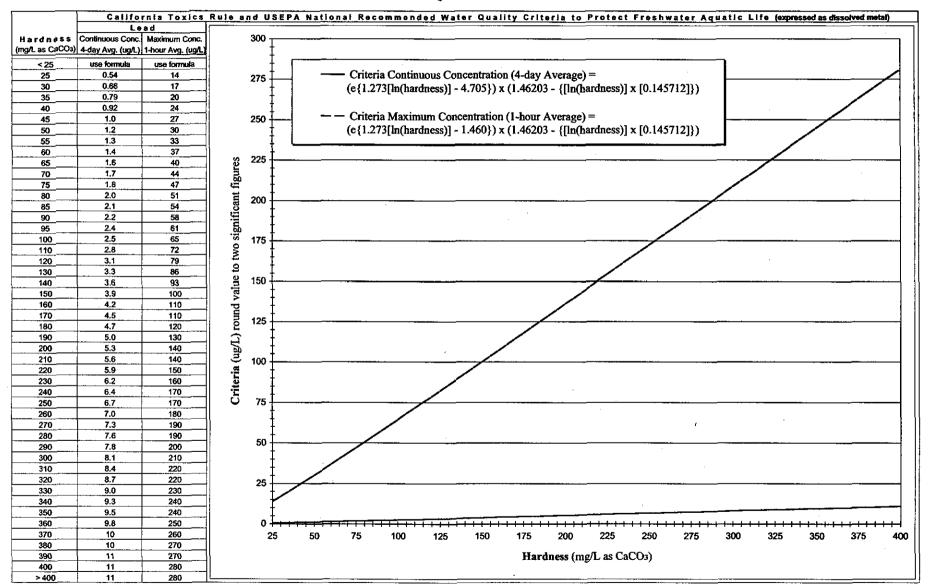
## WATER QUALITY GOALS FOR INORGANIC CONSTITUENTS FRESHWATER AQUATIC LIFE - COPPER



Water Quality Goals - August 2000

From References 17 and 26.

## WATER QUALITY GOALS FOR INORGANIC CONSTITUENTS FRESHWATER AQUATIC LIFE - LEAD



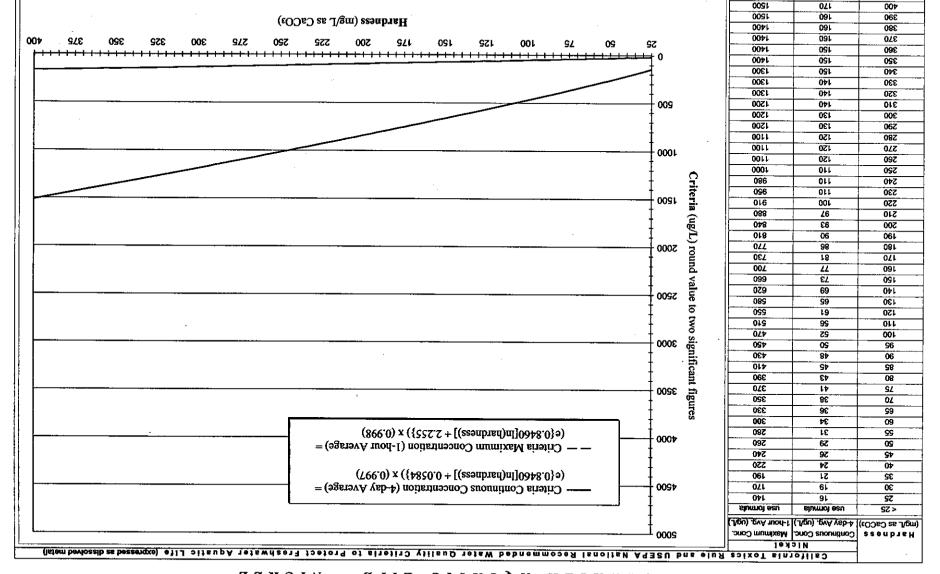
Water Quality Goals - August 2000

From References 17 and 26.

Inorganics Page 19

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## ERESHWATER AQUATIC LIFE - NICKEL WATER QUALITY GOALS FOR INORGANIC CONSTITUENTS



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Water Quality Goals - August 2000

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## WATER QUALITY GOALS FOR INORGANIC CONSTITUENTS FRESHWATER AQUATIC LIFE - OXYGEN, DISSOLVED

		USEPA National Ambient Water Quality Criteria to Protect Freshwater Aquatic Life Dissolved Oxygen (mg/L)								
	C	oldwater Criteri	Warmwate	r Criteria						
	Early Stages Water Column		Other Life Stages	Early Life Stages (b)	Other Life Stages					
30-Day Mean	Not Applicable	Not Applicable	6.5	Not Applicable	5.5					
7-Day Mean	9.5	6.5	Not Applicable	6.0	Not Applicable					
7-Day Mean Minimum	Not Applicable Not Applicable		5.0	Not Applicable	4.0					
1-Day Minimum (c)	8.0	5.0	3.0	5.0	· 3.0					

#### Notes:

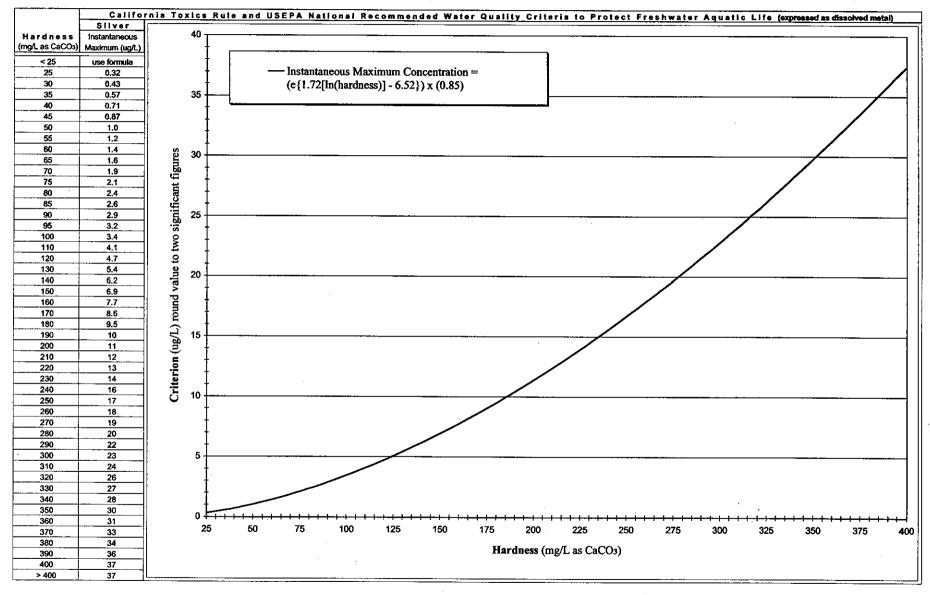
(a) The water column concentrations are recommended to achieve the required intergravel dissolved oxygen concentrations. For species that have early life stages exposed directly to the water column, the intergravel concentrations apply.

(b) Includes all embryonic and larval stages and all juvenile forms to 30-days following hatching.

(c) For reservoire or other manipulable discharges, the application of the one day minimum criterion must limit either the frequency of occurrence of values below the acceptable 7-day mean minimum or must impose further limits on the extent of excursions below the 7-day mean minimum. For such controlled discharges, it is recommended that the occurrence of the daily minima below the acceptable 7-day mean minimum be increased to 4.0 mg/L for coldwater fish and 3.5 mg/L for warmwater fish.

0457

## WATER QUALITY GOALS FOR INORGANIC CONSTITUENTS FRESHWATER AQUATIC LIFE - SILVER



Water Quality Goals - August 2000

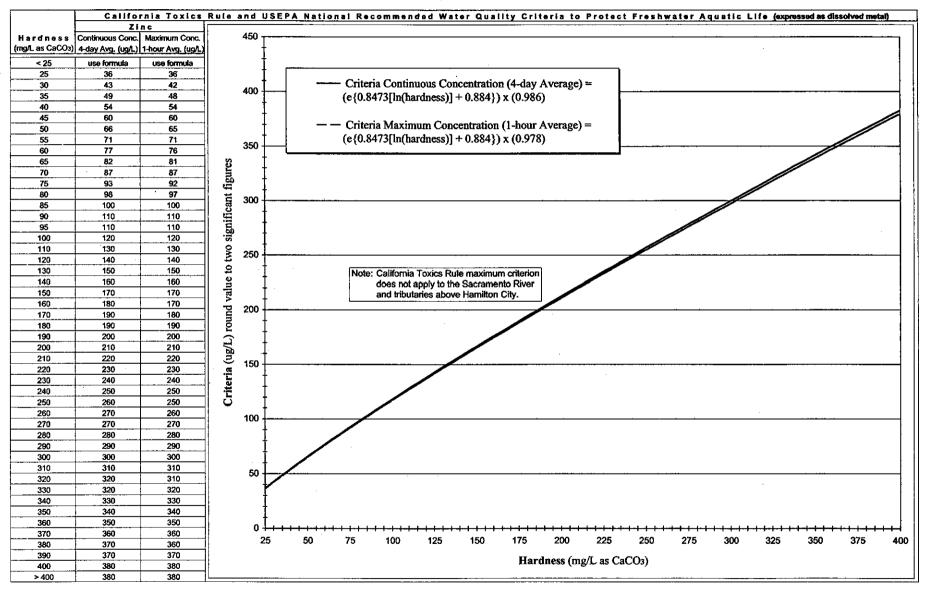
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From References 17 and 26.

## WATER QUALITY GOALS FOR INORGANIC CONSTITUENTS FRESHWATER AQUATIC LIFE - ZINC



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From References 17 and 26.

# WATER QUALITY GOALS FOR ORGANIC CONSTITUENTS

A Compilation of Water Quality Goals - August 2000 Edition

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Water Quality Goals - August 2000

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Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

Organics Page 3

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Water Quality Goals - August 2000

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Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

Organics Page 4

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## WATER QUALITY GOALS FOR ORGANIC CONSTITUENTS in ug/l (ppb) unless noted

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Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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	8-25-071	2-P(butyphenoxy)-1-methylethyl-2-chloroethyl sulfite	Arcide	
	24112-54-2	enizeineioloola	Clofentezine	
	120-12-7			a polynuclear aromatic hydrocarbon
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			contaminant Lev	els (MCLs)		California Public Health Goat (PHG) in Drinking Water (Office of Environmental	California St	Other	
ANIC		of Health Services		invironmental Protection		Health Hazard		of Health Services)	Taste & Odor
STITUENT	Primary MCL	Secondary MCL	Primary MCL	Secondary MCL	MCL Goal	Assessment)	Toxicity	Taste & Odor	Thresholds
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chloride									12 (126)
violet 4B				· · · · · · · · · · · · · · · · · · ·	ļ				
3HC							0.015 #		
1C						····	0.025 #		
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om	100 / 80 (19,100)		100 / 80 (19,149)		zero				510 (126)
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Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

UENT.	System (IRIS) Reference Dose as a Drinking Water Level (60)		SURRLs) than cancer risk Vational Academy of Sciences (NAS)	Cal/EPA Cancer Potency Factor 85 a Drinking Water Level (102)	Agareted Integrated Risk Information System (IRIS)	A938U Drinking Water Yroziyba ritigeh YAAR2	National Academy Of Sciences (NAS) Drinking Water and Health	Koguintovi k sa level neinido Water	Agricultural Water Quality
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			(EA, yeb-7) 002	0.023	0.02 (C)		21.0	# SZ`0	
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Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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#### euezueg jo. eneibe: lor OCISION OCISIOSIA (Au) objeuxi bjeuxi epjer 122 (58) 360 (58) ensatien (0Z) 000'11 4000 81 09E шю 11,000 (20) 4.3 97 enemenoniciane (0Z) 000'11 99'0 (0Z) 000'11 chloromethane ouezuec scenc scid (K A lon (89) 221 87000.0 nerte (hyrtemorc (9)) 000'852 0.00013 Jertie (Ngorgopropy) ether 538'000 (46) 000'021 1400 155 (28) 155 (28) 238'000 (46) погоетут) етлег 160.0 1.4 ельпетет (ухольеотой Veny uint 100 0.0414 0.0123 SHBHC ЭН (ensbrill) OH8-(+11) 80.0 6.063 610.0 S6'0 970'0 3 **\$10.0** £10.0 6£00.0 SHC Violet 4B chloride epuoyou (14) 640.0 (14) 4400.0 enervq(s enelyneq(i,rl,p C SQIC uein (14) 640.0 (12) 220044 (41) enertimenouit(x enertinenouil( enertinenouil(d (14) 640.0 (1) ++00.0 21000.0 ĐUệ 5200 0.00054 θl 2300 12 13 (14)6400 (1+)++00.0 )anthracene qeµAqe uò (231) 8.8 Ā рĶ uc 1 84871 Nutree August (12) 10.0 ərinqr eni (water+organisms) consumption only) (water+organisms) consumption only) Other Chronic mumixelit (eperevalue) eperevalue / (eperevalue) OL MOLEI THRUTH erupA (Lowest Observed Effect Level) Concentration succentanceurs Concentration Taste & Odor Drinking Water (equatic organism Drinking Water (equatic organism) **DINA** noitemrotai viloixoT continuous Cither Waters Sources of Cirber Waters to sectinos mumixell Recommended Criteria One-in-a-Million Cancer Risk Estimate Non-Cancer Health Effects Freshwater Aquatic Life Protowiaen3 Human Health and Welfare Protection stretter ville volte with the stand bear and set of the ville of the standard bear and the stretter of the standard set of the

### WATER QUALITY GOALS FOR ORGANIC CONSTITUENTS in ug/l (ppb) unless noted

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Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

Organics Page 10

#### euezueq JOL eneibs: 101 Anil octanoate (AUII obyeuXi byeuXi egyel (28.02) 003.11 (02) 00+9 12,000 (20) (EL) # 0EL enemen 11'200 (50'85) (02) 00+9 12,000 (20) (61) # 061 шю (28,05) 002,11 (21) # 021 (02) 00+9 12,000 (20) ensnitemonokhoit 11'200 (20'85) (02) 00+9 (,'02) 000'21 anentemonolidik euezuec DEDE DEDE NC A lon stomethy!) ether 1200 hioroisopropyi) ether hioroethył) ether # St-0'0 4.4 ельпат (ухолеотой **I**Ynsr ujug 10.34 (54) 210.0 0.008 (43) (5) +00.0 SHBHC (54) 210.0 0.008 (43) (54) +00.0 "ОН 91.0 0.012 (43) 0.008 (43) 0.004 (43) (euspui) OH8-(64) 210.0 0.008 (43) (54) 400.0 . **)**F 0.012 (43) (5) 800.0 OHE (54) 400.0 Violet 4B chloride epuoluou (25) 000 (EE) # 8900.0 anenyq(s 300 (25) (EE) # 8800.0 enelyneq(i,d.g C SOIC URIN 300 (25) (\$2) # 8800.0 enerthrenoun(x 300 (25) enertinerouil( (22) # 8800.0 enertinground(d (ZS) 00E # 690000'0 eui (68) 007 2100 #65 æ (ZS) 00°C (66) # 8800.0 BUDDEROBIA abytab ΰØ Ā 7 рķ UK ï ƏUƏZL MUJeui-so (15)10.0 annq θU OCENONA **Nerthor** Chronic unuixey (epereva nuori-r) epereva nuori-hS (epereva yeb-4) OBEIGAY TNBUTITS Acute mumixeM Kino nobdenisnoo mumbush nsibeM (Isvel 120113 beviet Observed Effect Level) Concentration suconstnatent VileO throm-a Concentration Y-day 30-99X mainegro obsupe DINA (30-day Average) Toxicity information noitzetory efil siteupA enireM mumbreM suountino.) Recommended Criteria Human Health Numerical Water Quality Objectives noitsetor9 etil siteupA retewite2 sitetito viitauo tetaW treidmA bebnemmooen IsnoitaN A932U nel9 neepo sintotileo

## WATER QUALITY GOALS FOR ORGANIC CONSTITUENTS in ug/l (ppb) unless noted

Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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Water Quality Goals - August 2000

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## Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

Organics Page 12

BUBZUƏ	8-12-101	1-Phenylbutane		
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phenyt phenyl ether	101-22-3	p-Bromodiphenvi ether		
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oroethyl) ether	111 44 4	BCEE	19419 Anteinorodichid-2,2	symmetricsi-Dichloroethyt ether
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10161 48	E-60-1691			
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WATER QUALITY GOALS FOR ORGANIC CONSTITUENTS in ug/ (ppb) unless noted

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Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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## WATER QUALITY GOALS FOR ORGANIC CONSTITUENTS in ug/ (ppb) unless noted

Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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Water Quality Goals - August 2000

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Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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Water Quality Goals - August 2000

Water Quality Goals - August 2000

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## Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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ទពទាំងពីរដូចកទ	28516	beta-Chloronaphthalene		
-2-methylpropene	£-27-599	9-Chloroisobutylene		
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	£-00-52	Ethyl chloride		
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-m-cresol	2-09-69	4-Chloro-3-methylphenol	p-Chloro-m-cresol	3-Methyl-4-chlorophenol
<b>BUBZU</b>	2-06-801	Monochlorobenzene		
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bic acid	8-11-62	Monochloroaceticacid	A haloscetic acid	
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sufficiency be		Paratins, chlorinated	Chlorinated waxes	Waxes, chlorinated
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WATER QUALITY GOALS FOR ORGANIC CONSTITUENTS in ug/l (ppb) unless noted

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Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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Water Quality Goals - August 2000

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#### **One-in-a-Million Incremental USEPA Integrated Drinking Water Health Advisories or** California **Risk Information** Suggested No-Adverse-Response Cancer Risk Estimates for Drinking Water **Proposition 65** National Academy Regulatory **Cal/EPA Cancer** USEPA USEPA System (IRIS) Levels (SNARLs) for toxicity other than cancer risk Integrated **Drinking Water** of Sciences (NAS) Level as a Agricultural **Reference Dose Potency Factor** Health Advisory ANIC as a Drinking National Academy as a Drinking **Risk Information Drinking Water Orinking Water** Water Quality STITUENT Water Level (102) Level (14) Goals (78) Water Level (60) USEPA of Sciences (NAS) System (IRIS) or SNARL and Health 12/40(7) picrin # hioroprene ropropene 1.7 (C) 15 2 (10-day) 1.5 (B2) 100 / 30 # (68) thalonit 11 140 100 (D) rotolvene 100 (D) rotoluene 1.5# ro-o-toluidine 0.13 0.0015# 0.00015 zotocin 1400 ropham yrifos 21 20 (D) R 350 ulfuron 0.1 # (68) 0.29 (93) (B2) (B2) :ne isic Red 9 0.00015 1.5 # ydrochloride nyt anthranilate 100 # 7.6 2.5# 0.23 idine ;ol 35 (C) 0 35 (Ĉ) (C) io rotonaldehyde (C) 700 11,000 (10-day,68) (D) (D,68) 18 1.5# 0.16 ron 1 (68) (C,68) R zine 280 gen exane R exanol 35,000 exanone exene 1400 exylamine entadiene 0.061 0.5 #R hosphamide 35 thrin\_ nethrin 70 əzinə 53 70 87.5 (D) 70 azine 0.00071 0.005 #R I (DCPA) 70 70 (D) 210 200 (D) n. 20 / 40 # (68) 1050 1.9 ozide 180 0.46 4.5# n 50 # ed No. 9 6.6 0.1 (B2) 1 # (50) 0.15 0.1 (B2) 0.1 1 # (50) 3.5 0.1 0.1 (B2) 0.042 1 #R (50) romodiphenyl ether 7 (C) 0.3 on one alcohol minoanisole 1.5 15# 25 # iminoanisole sulfate 2.7 2.5 # 0.25 aminodiphenyl ether

## WATER QUALITY GOALS FOR ORGANIC CONSTITUENTS in ug/l (ppb) unless noted

Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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UENT.	(smainegro otteupe bris	(Auo uondunsuoo	(өрезөүд үер-э)	(9perevA ruori-1)	mumixeM	Auo uondunsuoo	(egerevA ysb-*)	(epereva non-t)	winwixen
	(courumption of water	mainago offaupa)	Concentration	Concentration	sucensineteni	mainagno ottanpa	Concentration	Concentration	sucenstrateri
	Drinking Water Sources	Other Waters	snonunaoo	mumixeM		(egerevA ysb-05)	Suouninoo	ng eff.JoitsupAn mumbreM	
	<ol><li>theol nomult</li></ol>	n s i n i (955784 Average)	atewd 2617	9 efil olfsupA 1	LOLBCLION I	diset remut	1010#1 EC	JJ BICT STIERDY J	U0113810.

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Organics Page 22

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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	Human Health (30-day Average)		Marine Ar	uatic Life I	Protection		R e Continuous	<u>commend</u>	ed Crite Maximum	<u>ria</u>	Taxi	city informa	
ANIC	aquatic organism	6-month	30-day	7-day	Daily	Instantaneous	Concentration		Concentration	Instantaneous		bserved Eff	
STITUENT	consumption only	Median	Average	Average	Maximum	Maximum		24-hour Average		Maximum	Acute	Chronic	Other
picrin	1						1	<u> </u>					
hloroprene													
opropene				-		1							
halonit						1							
rotoluene													
rotoluene							1						
ro-o-toluidine			1.										
zotocin											· · · ·		
opham													
							0.009 / 0.0056						
rifos							(151)		0.02 / 0.011 (151)				
ulfuron									ļ				
ne	0.0088 # (33)										300 (52)		
isic Red 9 ydrochioride													
yl anthranitate		<u></u>											
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exanone			· · · · · · · · · · · · · · · · · · ·			·	1	1	1		[···· — — —		
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	0.00017 # (50)		1			1	0.001 (114)		1	0.13			
omodiphenyl ether			1		1		1		1				
			1							0.1 (51)			
one alcohol			1		1	1	1		1				
minoanisole					1	1			1	<u> </u>			
minoanisole sulfate					1		1		1				
minodiphenyl ether													

Water Quality Goals - August 2000

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Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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## Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

Organics Page 24

nodiphenyl ether	101-80-1	4,4'-Oxydianiline	Bis(4-aminophenyl)ether	
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elosinson	7-50-519	enimsibenelynendyxortteM	enimsibenezned-E, f-yxottjeM-4	
ioricolis e	153-45-5	enonstneq-S-lythem-A-yxonbyH-A		
	8065-48-3	Systox		
nodiphenyl ether	9-61-5911	DBDEE	Bis(pentabromophenyl) ether	
	20-23-3	4* <b>4</b> -DD1	Dichlorodiphenythrichloroethane	
	15-22-6	4'4-DDE	Dictylorodiphenydichloroethylene	
	13-24-8	4*4-DDD	Dichlorodipheryldichloroethane	ensrite(lynerigonolrb-g)sid-2,2-orolrbiO-1,1
6 'ON	2092-56-0			
	2-01-211	Chrysazin	enoniupentineyxorbyriiQ-8,1	
	8-14-21265	ninthsqongnea	Fenpropanate	
ep	9691	Oszide	-Alar Alar	Butanedioic acid mono(2,2,2dminy hydrazide)
	0-66-92	Dowpon	2.2-Dichloropropionic acid	
(A900	1-26-1981	DCPA		
eu	4345034			
	2-52-76	2,4-Dichlorophenoxyacetic acid		
eu	8-27-51-2-51-2-8	soridintemisA		
uhit	8-20-51625	Stockade		
	8-58-58089	etersy 		
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	2-8 <del>7-</del> 96	lonerdiv/tieM-S		
	108-39-4	lonerigit/theM-5		
ð.	120-71-8	enilinsiyriyeM-2-yxoyrijeM-2	enibisins-o-iytheM-C	
stelinentins	9-62-29			
ephohoo	6-19-695	Basic paratuchaine		
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upo:	9-06-67279	GIUCOPYIANOSe		
enibiulot-o	82-69-56			
evenjo	108-43-4	p-Chiomotomene		
euenjo	8-61-56	o-Chiorotokiene		
linoli	9-57-2681	OABIG	Decord	
euedox	1-90-201	ebinoido MIA	S-propeny chloride	
eueudou	866921	2-Chlorobutachene,1,3		
	2-90-92			
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Mater Quality Coals - 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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			(541) 0021				(641) 0021	10 (143)	enege
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	·• · · · · · · · · · · · · · · · · · ·		(2112,143)				(541,611) 9.8	(EAT,ETT) 8.1	etsisrtind(ty
			120,000 (143)			· · · · · · · · · · · · · · · · · · ·	(241) 000,021	53,000 (143)	en etels

10488

Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

				Ocean P Quality (		8 5	US	EPA Nation			ont Water Qu Protection		rla
	Human Health						Re	commend	ed Crite	ria			
	(30-day Average)		Marine Ag	quatic Life	Protection		Continuous		Maximum		Toxi	ity inform	ation
ANIC	aquatic organism	6-month	30-day	7-day	Daily	Instantaneous	Concentration		Concentration	Instantaneous	(Lowest O	<u>bserved Ef</u>	fect Level)
STITUENT	consumption only	Median	Average	Average	Maximum	Maximum	(4-day Average)	24-hour Average	(1-hour Average)	Maximum	Acute	Chronic	Other
ninotoluene					T					·			
יייייייייייייייייייייייייייייייייייייי									0.82 (68)				
a,h)acridine													
a,j)acridine													
a,h)anthracene	0.0088 # (33)									•	300 (52)	. <u> </u>	
nzo(c,g)carbazole											300 (52)		
o(a,e)pyrene											300 (52)		
o(a,h)pyrene											300 (52)		
x(a,i)pyrene											300 (52)		
o(a,l)pyrene											300 (52)		
pacetic acid												<u> </u>	
oacetonitrile													
romobenzene													
ochloromethane	130 # (13)										12,000 (20)	6400 (20)	11,500 (20,82)
ochloropropane (DBCP)													1
romoelhane									<del>_</del>				
phthalate	3500										2944 (45)		3.4 (38,45)
a		······					1						
acetic acid							1						
oacetonitrile					· · · ·				T				
hlorobenzene	5100 (77)	·····									1970 (24)	129 (22)	
hlorobenzene	5100 (77)					-					1970 (24)	129 (22)	
hlorobenzene	18#										1970 (24)	129 (22)	
obenzenes	5100 (77)										1970	129 (22)	
hlorobenzidine	0.0081#			1	<u> </u>				<u> </u>				
odifluoromethane	0.0001#	· · · · ·				1	<u>† · · · · · · · · · · · · · · · · · · ·</u>			<u> </u>	12,000 (20)	6400 (20)	11,500 (20,82)
hioroethane											12,000 (20)		11,000 (20,02)
hloroethane	130 #								<u> </u>		113,000	····.	
hloroethylene	7100				<u> </u>		<u>+</u>		<u>†                                    </u>		224,000 (27)		
Dichloroethylene							<u> </u>		<u>├───</u> ─		224,000 (27)		
2-Dichloroethylene				·   · · ·	<b></b>		· · · · ·	· · ·	<u> </u>		224,000 (27)		
					+		· · · · · · ·		<u>+</u>		224,000		
oethylenes	450 #								<u> </u>	· · · · · · · · · · · · · · · · · · ·	12,000 (20)	6400 (20)	11,500 (20,82)
omethanie	400 #	1 (87)			4 (87)	10 (87)			<u> </u>		12,000 (20)		(1,000 (20,02)
hlorophenol	<u>  </u>	1 (87)			4 (87)	10 (87)				· · · · · · · · · · · · · · · · · · ·	+		·
hiorophenol	┟───╂		·			10 (87)		1	<u>}                                     </u>	<u>                                      </u>			· · · · · ·
hiorophenol		1 (87)			4 (87)	10 (87)	<u> </u>				+	<b>—</b> ———	
hlorophenol	+	1 (87)			4 (87)		· · ·		<u>├</u>		1		+
hiorophenol	. · · · · · · · · · · · · · · · · · · ·	1 (87)			4 (87)	10 (87)		·····	<u> </u>	<u> </u>		<b></b>	
Dichlorophenoxy)butyric ack	믹				+				<u> </u>		40 200 (20)	2040 (00)	
hloropropane	- <del> </del>				+				<u>├</u> ─────────		10,300 (28)	3040 (28)	····
opropanes	+								╞─────	· · · · · ·	10,300		
hloropropene	8.9#				╄────				<u> </u>		790 (29)	<b></b>	
propenes					<u> </u>		· · ·	<u> </u>	<u> </u>	L	790	L	4
/05					┢────				<u> </u>		L		
) <u> </u>	0.00004 #	· · ·			<b>_</b>		0.0019 (114)		<u> </u>	0.71		L	<u> </u>
<u>0il</u>							· · · · ·		<u> </u>			<u> </u>	
nolamine									ļ			L	
amine									<b></b>		I	L	
iylhexyl) adipate								1	L	L	L	L	L
ylhexyl)phthalate	3.5 #						(138)		ļ				
ketone									1	<u> </u>	I		
phthalate	33,000								1		2944 (45)		3.4 (38,45)

Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

	Chemical	1		
	Abstracts			
	Service			
ANIC	Registry			
STITUENT	Number	]		lations
minotoluene	95-80-7	2,4-Toluenediamina		
n	333-41-5	Basudin	Neocidol	
a,h)acridine	226-36-8			
a,j)acridine	<u></u>	1,2;5,6-Dibenzanthracene	Dibenzo(a,h)anthracene	a polynuclear aromatic hydrocarbon
a,h)anthracene	194-59-2	1,2,3,0-Didenzandiradene	Choento(81) Banda Boosho	a polynuclear aromatic hydrocarbon
enzo(c.g)carbazole	192-65-4	<u>}</u>		a polynuclear aromatic hydrocarbon
o(a,b)pyrene	189-64-0			a polynuclear aromatic hydrocarbon
x(a,i)pyrene	189-55-9			a polynuclear aromatic hydrocarbon
xa,/pyrene	191-30-0			a polynuclear aromatic hydrocarbon
Dacetic acid	191-00-0	A haloacetic acid		a portriacioar alternatic injeriocarbon
bacetonitrile	3252-43-5			
romobenzene	106-37-6	<u> </u>		
ochloromethane	124-48-1	Chlorodibromomethane		a trihalomethane (THM)
ochloropropane (DBCP)	96-12-8	1,2-Dibromo-3-chloropropane	DBCP	
romoethane	106-93-4	Ethylene dibromide	EDB	
phthalate	84-74-2	Bis-butyl phthalate	Di-n-butyiphthalate	A phthalate acid ester (PAE)
a	1918-00-9	Banvel		
Dacetic acid	79-43-6	A heloacetic acid		
pacetonitrile	3018-12-0			
hlorobenzene	95-50-1	o-Dichlorobenzene	o-DCB	
hlorobenzene	541-73-1	m-Dichlorobenzene		
hlorobenzene	106-46-7	p-Dichlorobenzene	PDB	D-DCB
obenzenes	25321-22-6	Benzenes, dichloro-		
hlorobenzidine	91-94-1	DCB		
odifluoromethane	75-71-8	Diffuorodichloromethane	Freon 12	
hloroethane	75-34-3	1,1-DCA		
hloroethane	107-06-2	1.2-DCA	Ethylene dichloride	Freon 150
hloroethylene	75-35-4	1,1-Dichloroethene	1,1-DCE	Vinyfidene chloride
Dichloroethylene	156-59-2	cis-1.2-Dichloroethene	cis-1.2-DCE	
2-Dichloroethylene	156-60-5	trans-1,2-Dichloroethene	trans-1.2-DCE	
pethylenes		Ethylenes, dichloro-	Dichloroethenes	
omethane	75-09-2	Methylene chloride		
hlorophenof	576-24-9			
hlorophenol	120-83-2			
hlorophenol	583-78-8			
hiorophenol	87-65-0			
hlorophenol	95-77-2			
Dichlorophenoxy)butyric acid	94-82-6	2,4-D butyric acid		
hloropropane	78-87-5	Propylene dichloride	component of D-D	minor component of Telone
opropanes	26638-19-7	Propanes, dichloro-		
hioropropene	542-75-6	1,3-Dichloropropylene	component of D-D	major component of Telone
propenes		Propenes, dichloro-		
/0\$	62-73-7		Dichlorodimethylvinylphosphate	
	60-57-1			
N N	68476-34-6	Fuel oil #2		a petroleum hydrocarbon
olamine	111-42-2	DEA		
amine	109-89-7			
ythexyt) adipate	103-23-1	L	<u></u>	
hylhexyt)phthalate	117-81-7	Bis(2-ethylhexyl) phthalate	DEHP	A phthalate acid ester (PAE)
ketone	96-22-0	3-Pentanone		
phthalate	84-66-2	Bis-ethyl phthalate	A phthalate acid ester (PAE)	

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Water Quality Goals - August 2000 Iter

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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l	Risk Information	-old betsepping	esnoqseA-estevb	ue)	otemital Jais 10:	s tor Drinking W	Yater	28 notiisogor9	

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Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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### WATER QUALITY GOALS FOR ORGANIC CONSTITUENTS in ug/l (ppb) unless noted

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Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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Organics Page 33

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Water Quality Goals - August 2000

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Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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Water Quality Goals - August 2000

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	Chemical			
	Abstracts	<b>\</b>		
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ANIC	Registry		<b>A</b>	
STITUENT	Number		<u>Synonyms and Abbrevi</u>	ations
tilbestrol	56-53-1	DES		
sulfate	64-67-5			
quat	43222-48-6	Avenge		
ובטוסה	35367-38-5		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
lyl resorcinol ether	101-90-6	DGRE		
safrole	94-58-6	1,2-{Methylenedioxy}-4-propylbenzene	1.3-Benzodioxole	
tyl ketone	108-83-8	2,6-Dimethyl-4-heptanone	1,5-06120404010	
	108-18-9			
pylamine		DIMP		
pyl methyl phosphonate	1445-75-6			
pin	55290-64-7	Harvade		
oate	60-51-5	De-Fend	Cygon	Fosfamid
ethoxybenzidine	119-90-4	o-Dianisidine		
nethoxybenzidine				
horide	20325-40-0	o-Dianisidine dihydrochloride		
in	70-38-2	2,4-Dimethylbenzytester	Chrysanthernumic acid	
/iamine	124-40-3	DMA		
hylaminoazobenzene	60-11-7	Methyl yellow	Butter yellow	
hylamino)methylimino]-5-[2-				
2-furyl)vinyl]-1,3,4-	55738-54-0			
nethylaniline	121-69-7			
methylbenz(a)anthracene	57-97-6	DMBA		a polynuclear aromatic hydrocarbon
nethylbenzidine	119-93-7	o-Tolidine		a polynoodar aromatic hydrocarboit
	110-00-7			
nethylbenzidine chloride	040 00 0	- Tallda - huden shtuda		
	612-82-8	o-Tolidine hydrochloride		
carbamoyt chloride	79-44-7	Dimethylcarbamyl chloride		
nethylformamide	68-12-2	DMF		
ethylhydrazine	57-14-7	UDMH	unsymmetrical-Dimethylhydrazine	
ethylhydrazine	540-73-8	symmetrical-Dimethythydrazine		
vi methyl phosphonate				
ethylphenol	105-67-9	asymmetrical-m-Xylenol	2,4-DMP	
ethylphenol	576-26-1			
ethylphenol	95-65-8			
/i phthalate	131-11-3	Bis-methyl phthalate	A phthalate acid ester (PAE)	
/l sulfate	77-78-1			
/i terephthalatø	120-61-6	DMT	Dimethyl p-phthalate	
ivinyichloride	513-37-1	1-Chloro-2-methylpropene	1-Chloroisobutene	
trobenzene	99-65-0	m-Dinitrobenzene		
tro-o-cresol	534-52-1	2-Methyl-4,6-dinitrophenol	4.6-Dinitro-2-methylphenol	
tro-o-cyclohexyl phenol	131-89-5	DNOHP		
	51-28-5			
trophenol		·		· · · · · · · · · · · · · · · · · · ·
henols	25550-58-7			
topyrene	42397-64-8	<u> </u>		
ropyrene	42397-65-9	· · · · · · · · · · · · · · · · · · ·		
trotoluene	121-14-2	<u>·</u>		
trotoluene	606-20-2			
luenes	25321-14-6	Toluenes, dinitro-		
) 	88-85-7	DNBP		
yl) phthalate	117-84-0	Bis-n-octyl phthalate	A phthalate acid ester (PAE)	
lane	123-91-1	p-Dioxane	Disthylene ether	
amid(e)	957-51-7	Diphenamide		
				······································
ylamine	122-39-4			

Water Quality Goals - August 2000

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Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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Water Quality Goals - August 2000

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Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

It aga vinage 41

	Chemical			
	Abstracts	1		
	Service			
ANIC	Registry	Į.		
STITUENT	Number		<u>Synonyms and Abbrevi</u>	ations
31110EN1				<u> </u>
	85-00-7	Aquacide	Regione	
Slack 38	1937-37-7	2-Naphthalenesulfonic acid		
Blue 6	2602-46-2	Diazine blue		
frown 95	16071-86-6			
e Blue 1	2475-45-8	1,4,5,8-Tetraminoanthraquinone		
n	298-04-4	Disutfoton	Ethythiodemeton	
iane	505-29-3			
	330-54-1	Crisuron	Diaton	Kamex
	2439103	Dodecylguanidine acetate		
lfan	115-29-7	Endosulfan I (alpha)	Endosulfan II (beta)	Thiodan
lfan sulfate	1031-07-8			
af	145-73-3	Endothall		
	72-20-8	Endrex	Hexadrin	
		1		
rohydnin	106-89-8	Chloropropylene	1-Chloro-2,3-epoxypropane	
a 17B	50-28-2	Altrad	Baridot	Femogen
	74-84-0			······
· · · · · · · · · · · · · · · · · · ·	64-17-5	Ethyl alcohol	·	
amine	141-43-5	2-Aminoethanol	MEA	Monoethanolamine
n	16672-87-0	2-Chloroethylphosphonic acid		
	563-12-2	Diethion		
yethanoi	110-80-5	Ethylene glycol monoethyl ether		
yethyl acetate	111-15-9	Ethylene glycol monoethyl ether acetate		
cetate	141-78-6			
xylate	140-88-5			
nine	75-04-7	Aminoethane		
amyl ketone	106-68-3	EAK	5-Methyl-3-heptanone	
nzene	100-41-4	Phenylethane		
romide	74-96-4	Bromoethane		
4'-dichlorobenzilate	510-15-6	Chlorobenzilate		
dipropylthiocarbamate	759-94-4	EPTC	Eptam	
e	74-85-1			
ediamine	107-15-3	1,2-Diaminoethane		
e glycol	107-21-1	1,2-Ethane diol		
e glycol monobutyl ether	111-76-2	2-Butoxy ethanol	Ethylene glycol butyl ether	EGBE
eimine	151-56-4	Aziridine		
e oxide (ETO)	75-21-8	ETO	Epoxyethane	Oxirane
e thiourea (ETU)	96-45-7	ETV		
her	60-29-7			
mate	109-94-4			
ercaptan	75-08-1	Ethanethiol		
nitrophenyl				
hosphorothicate	2104-64-5	EPN		
thalyl ethylglycolate	84-72-0	EPEG	Ethyl carbethoxymethyl phthatate	A phthalate acid ester (PAE)
	101200-48-0	IN L5300		
ohos	22224-92-6	Nemacur	Phenamiphos	
	14484-64-1	Fermate		
turon	2164-17-2	Cotoron	Cottonex	Lanex
thene	206-44-0			a polynuclear aromatic hydrocarbon
8	86-73-7			a polynuclear aromatic hydrocarbon
0	59756-60-4	Sonar	· · · · · · · · · · · · · · · · · · ·	
nidol	56425-91-3	Cuttass		

Water Quality Goals - August 2000

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Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

Other Taste & Odor	te Action Levels   Health Services)		in Drinking Water (Office of Environmental Health Hazard	Jency .					
	Taste & Odor	Toxicity	()nemeseseA	MCL Goal	Mironmental Protection Ac	Primary MCL	Secondary MCL	California Dept. o California Dept. o	TUENT
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Agricultural	Regulatory Regulatory Proposition 65	Vational Academy	s for Drinking W USEPA Uthrking Weter	er Risk Estimate USEPA Disperated	Cal/EPA Cancer	r than cancer risk SNARLs) - than cancer risk	) sjener	Risk Information System (IRIS)	
Coals (78)	s as level as a Drinking Water Level (14)	of Sciences (NAS) Drinking Water Alfeet bus	HISEN BUILDING	integrated Risk Information System (IRIS)	Potency Factor es a Drinking Water Level (102)	National Academy Vational Academy of Sciences (NAS)		Reference Dose as a Drinking Water Level (60)	ITUENT IC
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#### i scelate θU w 11,000 (20) (1) ++00.0 eneryq(b,o-£,C,f) (14) 610.0 uiu 1 euõu эu epituleuoudsoudikupa lorophene 075 086 6.8 6.1 **BURTIBOTO** uixoip-d-ozuaqipoloji 5.2 ٢ 000'21 540 Ilorocyclopentadiene 0.7 £.6 06 (124) (#91) Acceleration and a second and a 6010/210/05 9#00/11/0/##0 20 (55'53) 550 (22) 2200010 \$200010 **OCODERZENDE** aneznedomo hlor epoxide 0.52 (111) 8600.0 11000.0 01000.0 0.0038 (114) 12000.0 0.00021 JOIL 0.52 ١e Ti Muneu-do, BUI 11,000 seueup SJEH 155 360 uuq UIVU eisz ۲ өрлүөр muinomme-eten Ð XOPA: 1 -si eloze -S-onin-2)-4-(onisenbydiym BOS өрлцөр s **uej**e (SASM) sineps p əfer lir **Dehio** Chronic Acute mumixeM (epereva non-f) epereva mon-AS (epereva veb-A) Or Melfare (water+organisms)| consumption only)| (water+organisms)| consumption only)| TNBUTITS (Lowest Observed Effect Level) suconsingrations Concentration Concentration TobO & etseT meinegra otteupe) | tetew prinking Drinking Water (aquatic organism **DINA** Toxicity Information suoundinoo Sources of mumixeM Other Waters Cither Waters Sources of Riseria bebnemmozeR One-in-a-Million Cancer Risk Estimate Non-Cancer Health Effects Freshwater Aquatic Life Protewiter7 Human Health and Welfare Protection <u>strefing tenoisely winelded bebremmozen lanoisel Agazi</u>

WATER QUALITY GOALS FOR ORGANIC CONSTITUENTS in ug/l (ppb) unless noted

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

Crganics Page 45

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Water Quality Goals - August 2000

			Ca	lifornia Tox	les Rule Cr	Iteria (USEP	A)		
		Inlan	d Surface W	laters				s & Estuari	0 S
	Human Health	(30-day Average)	Freshwat	er Aquatic Life	Protection	Human Health		r Aquatic Life P	
	<b>Drinking Water Sources</b>		Continuous	Maximum		(30-day Average)	Continuous	Maximum	
ANIC	(consumption of water	(aquatic organism	Concentration	Concentration	instantaneous	aquatic organism	Concentration	Concentration	Instantaneous
STITUENT	and aquatic organisms)	consumption only)	(4-day Average)	(1-hour Average)	Maximum	consumption only	(4-day Average)	(1-hour Average)	Maximum
nit nate	τ			· · · · · · · · · · · · · · · · · · ·	<u>}</u>	\	····	1	
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ng agents (MBAS)	· · · · · · · · · · · · · · · · · · ·								
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fop-methyl		· · · · · · · · · · · · · · · · · · ·				<u> </u>			<u> </u>
ny								· · · · · · · · · · · · · · · · · · ·	
hlor	0.00021 (113)	0.00021 (113)	0.0038 (114)		0.52	0.00021 (113)	0.0036 (114)	· · · · · · · · · · · · · · · · · · ·	0.053
hlor epoxide	0.00010 (113)	0.00011 (113)	0.0038 (114)		0.52	0.00011 (113)	0.0036 (114)		0.053
18		0.000.11(110)				0.00011(110)		1	
omobenzenø									
nlorobenzene	0.00075 (113)	0.00077 (113)				0.00077 (113)			
nlorobutadiene	0.44 (113,143)	50 (113,143)				50 (113,143)			
nlorocyclopentadiene	240 (143)	17,000 (143)		······································		17,000 (143)	· · · · · · · · · · · · · · · · · · ·		
Norodibenzo-p-dioxin				1					
loroethane	1.9 (113,143)	8.9 (113,143)				8.9 (113,143)			
1lorophene									
ethylphosphoramide	ļ								
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none	<u> </u>	<u> </u>		<u> </u>	<u></u>			<u> </u>	· · · · · · · · · · · · · · · · · · ·
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Paris			·····		·				
(1,2,3-c,d)pyrene	0.0044 (113)	0.049 (113)				0.049 (113)		· · · · · ·	<b> </b> -
70	1		· ·····						
ne						1			
/ acetate				1					

Water Quality Goals - August 2000

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Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

#### A acetate əu 11,500 (20,82) P400 (20) 12000 (20) ш 300 (SZ) enervg(b,o.5,S,F) (22) # 8800.0 uiuj 1 9000 ÐUI ethylphosphoramide energonoir 01/6 5.5# enertieonoli nixolb-q-osnediborolr 0.7 85 norocyclopentadiene 32 ensibetudonolr # 7L 160 (22) (ZZ) 6ZL # 12000.0 eneznedonoli euezuegowo. 8 hlor epoxide 6.053 (411) 9600.0 0.00072 # (30) 6,053 (+11) 9600.0 000012 # (30) - JOJ4 L 9 Τū top-methyt ƏUE 11,500 (82) 00+9 12000 130 # (13) SOUCHE SJƏL uitti UIAN etez 1 epAyepit Z <u>າກນ່າວຕາກຣະອາຣາ</u> θι xopAc 1 18-1 ejozej -S-otin-2)-4-(oniserbyfitymr DOB : aby de s neie (SABM) sinepe pr eten \_lin Chronic mumixsiii (eperevA toor-f) eperevA toor-AS (eperevA vsb-+) mumixell **BERIOVA** AVBERGE Kuo uogduinsuos THEUTHE Acuta mumixeM ODA nsibem (istantaneous (Lowest Observed Effect Level) Concentration Concentration Kep-1 30-993 aquado organism *cuoensineten* **Daily** e-month SINA continuous noisemtoint vilaixoT. wnwpæ**g** Marine Aquatic Life Protection (30-day Average) <u>Recommended</u> Criteria Human Health Saltwater Aquatic Life Protection Numerical Water Quality Objectives siteting yilloug ater Water Qubient Water Quality Criteria nsi9 neeso sintollas

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

### WATER QUALITY GOALS FOR ORGANIC CONSTITUENTS in ug/ (ppb) unless noted

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Water Quality Goals - August 2000

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1 acetate	153-65-5	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	
	9-96-08192	eniloniup(i-č, klossbimilyniem-č-onim4-S		
eu	2-61-76296	IETVO S		
w	8-27-92	Triodomethane		
energe(b,2-6,2,1)	9-68-661			a polynuclear aromatic hydrocarbon
	9-21-56			
uint	2-28-58818	Scepter		
1	32224-44-0			
	569141-0	Cyclotetramethylene tetranina	enicosettet-7,2,5,1-ortinettet-7,2,5,1-orbynistoO	
DODE	21532-04-5	Velpar		
	110-24-3			
ethylphosphoramide	6-12-089			
energene	1-02-02	·····		
ອາເຣານີອອກອາເ	1-72-29	Perchloroethane		
nixolb-q-oznediborofr	£-72-80761	HXCDD		
eneibsinegolayoonotr	¥1771	HEX	HCCPD	
eneiberudoroli	£-89-78	Perchlorobutadiene	HCBD	
1				
euezuegooji	1-47-811	Perchérobenzene	ВЭН	
euezuegowo.	1-28-78			
	145-85-2			
hior epoxide	1054-67-3	····		
Plot	8 11 94			
L O	5784-94-3			
	\$-12-11261	DPX-M6316		
(ob-weith)	2-07-90869			······································
GUE	2-29-191	ensitieorouiliti-1,1,1-orolito-S-omor8-S		
SeuBrite		-olsh ,senshield	· · · · · · · · · · · · · · · · · · ·	
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ւլա	16568-02-8	enozerbythynnollynbem ebyneblateoA		
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ejes	9-28-1201	dnpunog	Glyphosate Isopropylamine salt	· · · · · · · · · · · · · · · · · · ·
н.	226-25-2			
ildehyde	1-12-592		· · · · · · · · · · · · · · · · · · ·	
2	E-01-0E229	elozebimi-[b-'S,'S:e-S, r]obhygonimA-S		
	7-11-02/29	elozebimi-[b-S, C.s-S, r jobnyqibiyitiem-8-onimA-S		· · · · · · · · · · · · · · · · · · ·
nate-ammonium	11185-85-5	H <sup>06</sup> 338866	eqseg	
	6-19-9008	00000 - 11		e betrolerum hydrocarbon
хорла	0-90-89909	Ept 500	Cempogran	Fumetamide
	1-10-86			
	6-00-011	uenungi		
JB-(	30148-24-8	etteitA		
ejozej	0-51-0250	ejozejujunjiN	ENT	·····
-2-onin-2)-4-(onizerbylity			2.12	
bbe	9-81-19			
qeµÀqe	20-00-05	lensitieki		· · · · · · · · · · · · · · · · · · ·
S	844-55-8	Ditorate	Dytonate	Dyphonate
uəje	0-20-82122			
	E-20-EE1	Folpan		
(SASM) streeps or	6 20 661	Methylene blue active substances	SABM	
	S-1-6-601-69	Wavrik	3V8M	
8121	ee335-96-2	Moncut		
iiii	3 20 00023			
TN 3 UTITS	Number	T T	oltsiverdd <u>A bûs</u> smyno <u>ny</u>	s u
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TN 3 UTITS	Service Service		oltsiverdd Abns zmynony	5 U
TN 3 UTITS	Registry		olfsiverdd bûs zmynony	<b>.</b> .

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4.11.0	California Dant	Maximum	Standards (Calif Contaminant Lev	els (MCLs)		California Public Health Goal (PHG) In Drinking Water (Office of Environmental Health Hazard	California State Action Levels (Department of Health Services)		Other Taste & Odor
ANIC	Primary MCL	Secondary MCL	Primary MCL	nvironmental Protection / Secondary MCL	MCL Goai	Assessment)	Toxicity	Taste & Odor	Thresholds
		Secondary MCL		Gecondary MCL		Assessment)	TOXICITY		
1 alcohoł									270 (126)
1 acetate									150 (126)
1 alcohot						-l		· · · · · · · · · · · · · · · · · · ·	10,000 (126)
rone		<u> </u>					+·		5400 (126)
pafin									
panol						· · · · · · · · · · · · · · · · · · ·			160,000 (126)
yl acetate		<u> </u>							1000 (126)
ylamine						<u> </u>			4900 (126)
pyl ether		\	· · · · · · · · · · · · · · · · · · ·	<u>├────</u> ───			+·		0.8 (126)
yr methylphosphonate						++		· · · · · · · · · · · · · · · · · · ·	
yi methyl phosphonic acid			<u> </u>				······		
<u>en</u>			· · · · · · · · · · · · · · · · · · ·						
J							· · · · · · · · · · · · · · · · · · ·		100 (49)
<u>ne</u> រា		l		· · · · · · · · · · · · · · · · · · ·					100 (49)
arpine					···				
cetate			· · · · · · · · · · · · · · · · · · ·				······		
ubacetate									
					······································				
· · · · · · · · · · · · · · · · · · ·			1					·	
on	· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·			1	160		
anhydride									
hydrazide	······································								
			· · · ·						
Ipha-C									
ilan									
iat chloride									
xs	·····					_	·		
is oxide									
oxide									1000 (126)
xyt	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·						
rylonitrile			Į						
nidophos		· · · · · · · · · · · · · · · · · · ·	ļ						
iol									740,000 (126)
athion	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·			·			·	
nyt									
ychlor	40 / 30 (100)		40		40	30			4700 (125)
acetate	<u></u>		<u>}</u>	<u>}</u>	···				
acrylate				·					2.1 (126)
acrylonitrite			· · · · · · · · · · · · · · · · · · ·	<u> </u>					2100 (126)
amine	÷÷=		<u>├</u>			- <u>}</u>			2400 (126) 280 (126)
n-amyl ketone		· · · · · · · · · · · · · · · · · · ·							18,000 (126)
t huthd offens (MtRE)	13	5	<u>├────</u> ────	<u> </u>	<del> </del>	13			15 to 95 (10)
t-butyl ether (MtBE)	10			<b>├</b> ─────────					250 (126)
n-butyr ketone ylcholanthrene				<del> </del>				· · · · · · · · · · · · · · · · · · ·	(120)
ylchrysene									<u> </u> ·
cyclohexane		<u> </u>		<u>+</u>	<u> </u>				150 (126)
lethytoyclobexanol		<u> </u>							6.000.000 (126)

Water Quality Goals - August 2000

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Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

	USEPA Integrated		ealth Advisories or			on incremental	· · · · · · · · · · · · · · · · · · ·	California	
ANIC	Risk Information System (IRIS) Reference Dose as a Drinking	Levels ( for toxicity othe	dverse-Response SNARLs) r than cancer risk National Academy	Cal/EPA Cancer Potency Factor as a Drinking	USEPA Integrated Risk Information	USEPA Drinking Water Health Advisory	National Academy of Sciences (NAS) Drinking Water	Proposition 65 Regulatory Level as a Drinking Water	Agricultural Water Quality Goals (78)
STITUENT	Water Level (60)	USEPA	of Sciences (NAS)	Water Level (102)	System (IRIS)	or SNARL	and Health	Level (14)	Goals (76)
t alcohol									
l acetate					L				
1 alcohol	2100								
rone	140	100		<u> </u>	40 (C)	40 (C)			<u></u>
palin	100	·							
banol									
yi acetate					· · · · · · · · · · · · · · · · · · ·				
oylamine									
yl ether	<b>_ \</b>			· · · · · · · · · · · · · · · · · · ·	<u>}</u>	<u> </u>	· · · · · · · · · · · · · · · · · · ·		
yl methylphosphonate		700		<u> </u>		(D)		······································	
yf methyf phosphonic acid	700	· · · ·		<u> </u>				· - · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
en	35	<u> </u>	·	0.0000	<u>(C)</u>		-	0.00 #0	
<u>)</u>		100 /40 -1 101		0.0022			0.011	0.02 #R	
ne		100 (10-day,49)		<u>├──</u> ────────	<u> </u>	·	<u>}</u>	2 # (68)	
<u>n</u>	14							0.045 #	
arpine		·	<u>                                      </u>	0.0045	(62)		·	0.045# 1.5#	<u> </u>
cetate				0.13	(82)			1.5#	
ubacetate	1.4			0.92	(0)			R	
<u></u>	1400			ļ	(C)			······	
ion	1400	100	160	· · · · · · · · · · · · · · · · · · ·	<b></b>	(D)			
anhydride	700	100							
	3500	4000		<u> </u>		(D)			
hydrazide	35	4000	35			(0)		#	
	11	4	8.75	l	{·	(D)			
	70	} <b>-</b>					· ·		
	70	· · · · · · · · · · · · · · · · · · ·	···						
dpha-C				0.029				0.3 #	
llan				0.00027				0.0025 #R	
lat chloride	210			0.00021	f			0.002.57	
)\$	0.2			<u>}</u>	· · · · · · · · · · · · · · · · · · ·	<u>  .                                    </u>			
)s oxide	0.2								
oxide					·				
xyt	420				· · · · · · · · · · · · · · · · · · ·				
zylonitrile	0.7		· · · · · · · · · · · · · · · · · · ·						
niciophos	0.35				1				
10	3500				T				
athion	0.7				(C)				
nyl	180	200	175	I	T	(E)			
ychlor	35	40	700		(D)	(D)			
acetate					1				
acrylate					(D)				
acrylonitrile									
amine									
n-amyl ketone									
vlanitine									
t-butyl ether (MtBE)		200		19					
n-butyl ketone									
ylcholanthrene				0.0016				0.015 #	
ylchrysene				0.0029 (93)				0.0025 # (68)	
cyclohexane									
leinylcyclohexanol	l	l	<u> </u>				_ <b></b>	L	

Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

### ethylcyclohexanol Syciohexane AjcutAzeue Alcholanthrene u-pn(A) keroue (381W) Jegge (MIBE) Alaniine n-amyl ketone **OULUF** acrytonitrile etelynoe aletace (15) 001 Action 0.03 (51) (151) 5.5 (131) 23.0 ιÁU noidte ю soudopiu Ŵ **ebixo** ebixo st S epholido 361 uer **D-Brid** Pydrazide sunydrae (15)10 (131) 54.0 uo elisteceste etate euidii U<sup>4</sup> θU ŧ UE yr methy phosphonic acid ył methyłphosphonate yyl ether enimetyc etelecelette 10LIEC ugec eno 000,711 5600 96 1 slcohol alsteckie Iodools h (epereva ruon-1) epereva ruon-42 (epereva veb-4) (water+organisms) consumption only) (water+organisms) consumption only) TNAUTITE Other Chronic Acute mumixsM or Welfare (Lowest Observed Effect Level) Concentration Concentration Taste & Odor Drinking Water (aquatic organism mainagno obsupe) matew gobining succentaneous VNIC snonuguoo Toxicity Information mumixe**M** Other Waters **Cither Waters** to secred of Sources of <u>Recommended</u> Criteria One-in-a-Million Cancer Risk Estimate Non-Cancer Health Effects noisseshwater Australia Protection Human Health and Welfare Protection USEPA Nation Recommended Ambient Water Quality Criteria

### WATER QUALITY GOALS FOR ORGANIC CONSTITUENTS in ug/l (ppb) unless noted

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Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

### vichrysene eneritinslortaly n-buty ketone (-butyl ether (MtBE) enilinsky n-amyl ketone enime elintinolyncis atelynae acetate Acupor μλι nolitte 101 soudopiu elininoly: 10 еріхо epixo si S ebholdo te uep D-PUGP hydrazide ерирличе uю ateleosdu etereo enique ш eu ŧ ЦE bios oknorid sorid tyritem tyr ył methytphosphonate Tethe fiver outmety ył acetate **JOUR** nilec (600 (113,143) (641,611) 009 (541,511) 4.8 **BUO** scopo 1 acetate 4 sicopol mumbesi (aperevA ruor-1) (4-day Average) consumption only mumixelii (1-hour Average) (4-day Average) consumption only) (smainegro odeupe bris TNEUTITS sucentaneous Concentration nodentneonoO aquadic organism shoouequeque Concentration Concentration mainagno citaupa) (consumption of water VAIC suounneoo (s0-day Average) Drinking Water Sources mumbush mumixeM suoundanoo Other Waters Saltwater Aquatic Life Protection Freshwater Aquatic Life Protection (epereva yeb-05) (thiseH namuh thiseH nemuH steteW eperius braini Enclosed Bays & Estuaries (A938U) siretia Criteria (USEPA)

WATER QUALITY GOALS FOR ORGANIC CONSTITUENTS in ug/l (ppb) unless noted

lethylcyclohexanol Actonexane:

Water Quality Goals - August 2000

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Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

### Water Quality Goals - August 2000 Aethylcyclohexanol chcjopexsue - Alchrysene ycholanthrene u-privi ketone (Ebutyl ether (MtBE) enilineivi u-smy ketone enime: eintinotype ect Alate acetate xAcujoL 0.03 (51) μMu nointisi юч sonqobim orylonitrile IXX epixo ebixo so SO abholido fiel UBİE <u> J-eqdi</u>e pizelot epupAque (15)10 (SSF) 45.0 UOP x Ū etslebedu: efsteor anique UG əUK ə 113 by methyl phosphonic acid by methylphosphonate bài eguer enimetyq oyi acetate lonsq uiliso 15,900 120'000 SHOW V sloohol Al acetate Vi alcohol Other Chronic Acute mumixaM (epereva non-r) epereva non-hS (epereva vsb-h) **AVETBOR** AVERAGE Coursemption only **INBUTITRI** mumixeli winwijxejij nsibeM (Loved foelte beviesdo isewod) циюш-9 mainegro ottempe ខាបចណនាពនាខារ Concentration Concentration succentaneiani VileC Y-day 30-qsX SINVE Toxicity Information unwpxew snonuguog noltostor9 etil olisupA enirsM (30-day Average) Recommended Criteria rttleeH nemuH sitsetorg atil sitsupA retextion Numerical Water Quality Objectives sitetity Criteup teseW treldmA bebnemmozeR IsnoitsN A932U cell nseco einrofiled

### WATER QUALITY GOALS FOR ORGANIC CONSTITUENTS in ug/ (ppb) unless noted

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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(M H IJ 0

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Nicyclohexanol	5-2 <del>7-3</del> -3-3			
ensxerio	2-78-801	······································		
euesAu	2692-24-3	····		
อกอากมาย่อก	S-67-95	<u> </u>		······
enotext type	9-82-165			······································
(381M) terher (MBE)	1634-04-4			
eriline	8-19-001			
inyi ketone	110-43-0	enonsteleh-S		
<del>0</del> 0	9-68-92	enertemonimA		· · · · · · · · · · · · · · · · · · ·
9intinoly	126-96-7			
etely.	8-33-3			
etate	10-50-6		· · · · · · · · · · · · · · · · · · ·	
.ioir	5-61-22		· · · · · · · · · · · · · · · · · · ·	
	9-11-25191			·····
	8-26-096			· · · · · · · · · · · · · · · · · · ·
	1-95-29	Methyl alcohol		
soudo	10565-92-6	Monitor		
eihting	126-98-7	S-Cyanopene		
	1-61-26829	Subdue		
epi	2-62-171	Methy isobuteny ketone		
ebixe	8-81-82	Builphos		
	120-20-2	sotudinT	DED XeloF	
epholide	24307-26-4			
	148-85-3	bristeum nagortin eninela	Nevenia	
0-6	2-68-90089	elobni[d-E,S]-obhyg-He-lyrtiem-E-onimA-S	·	
	<del>33-65-2</del>	2-(2-Methyl-4-chlorophenoxy)propionic acid		
······································	S-18-96	4-(2-Methy-4-chlorophenoxy)butytic acid		
-	9-12-26	2-Methy-4-chlorophenoxyacetic acid		
	15451-38-5	Dithane M-22	elsznsM	
ebizet	153-33-1	nogretnA	Сретіот	ර්ෂාව
epupAu	9-16-801			······································
	151 12 2	CAMOU		
	9-66-99028	DPX-F6384		
	330-22-5			
918163	1332-35-9	Basic lead acetate	Ala	
eje	301-04-5	Sugar of lead		· · · · · · · · · · · · · · · · · · ·
eu	303-34-4			· · · · · · · · · · · · · · · · · · ·
	12201-63-4	Cobra		
	8008-20-6	Kerosine	1# No leu 3	a petroleum hydrocarbon
	143-20-0	Chlordecone		
	82558-50-7	201-13		· · · · · · · · · · · · · · · · · · ·
pos ojuodood kuseu	1835-24-8	AdMI		
elendrosphonate	6 F3 Coor			
	108-50-3	Di-tsopropylether	DIGE	
enim Todic	0-18-54	ensoryonimA-S		
eleteoe	108-51-4			
	0-69-29	loncole tygoridosi		·····
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TNEUTI	Number	3	ynonyms and Abbrevlatio	\$U
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Organics Page 54

	-t t aoke		California Public (PH9) Coal (PH6) in Drinking Water (Office of Environmental	Ditional de la constant de la constant de la constant de la constant de la constant de la constant de la const Dificient de la constant Levels (MCLs) ((Cls))					
nertiO ObO & etssT	aith Services)	(Department of Health Services)		California Dept. of Health Services U.S. Environmental Protection Agency					AIC
spicuseJul	Tob <u>O &amp; ette</u>	Toxicity	(trientessesA	NCT GOSI	Secondary MCL	Frimary MCL	Secondary MCL	Primary MCL	TNBUTI
									(entineorolito-S)zidene)
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						<u>↓</u>			entifinelynen-S)sidenel
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120'000 (JSE								<u></u>	enizsi enizsi
						<u> </u>		<u> </u>	ejejjns euizej
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(921) 051									louidriss lybud
1300 (158)		150							(XBIM) errore (MBK)
3100 (156)						1			otobył ketone
0.024 (126)					-t	1 .		<b></b>	ueideo
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Agricultural Water Quality	Durvidag Water Level as a Regulatory	Vational Academy of Sciences (NAS) Drinking Water	AGEDA Drinking Water Yosiyb Advisory	A93SU hetergetni nottermotoli yizi9	Cal/EPA Cancer Potency Factor as a Drinking	MARLs) than cancer risk Mational Academy		ss a Drinking System (RUS)	41C
(87) also	(11) level		OL SNARL	System (IRIS)	Water Level (102)	of Sciences (NAS)	NSEPA	(09) level retsW	ITUENT
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	#10				850.0				(eniknskydem-S)zidene
	#20		<u> </u>		0.022				endinsibene
	#80				620.0				eniinsibene ebix
		<u> </u>	(a)	(0)		<u> </u>	(Veb-01) 0027	+500	A ketone
	(R2) # £ U		<u>├</u> ·	<u> </u>	<u> </u>	<u> </u>			
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	(99) # 9'7	6800.0			0 73 (83)				LGUG

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Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

0<sup>2</sup> 92<sup>2</sup> 82<sup>2</sup> 82<sup>2</sup> 82<sup>2</sup> 8<sup>2</sup>

#### **eue**uon aug eues/üu: 30 ƏUƏZU 000 ZZ 0061 21 eupisins-o enenthenene BCBRC BCIQ Arate ecetate, trisodium ebime enimelynt ənəfe 620 2300 BUOUI -S-fonime-(enebilyru enilato e 13 (121) <u>O up</u> 0.001 (51) (8) 260000.0 (8) 260000.0 enotexi a alozab (8) 0525 uiz (8) 001 (8) ++ JOJ4 (8) 001 pionuscy enervisiviene u-blopyl ketone (221) 80.0 noithsuso Alactylamide enibineur -N-ODIN-N-N enoniuperdineodin-1-1/ etsnohusensmen memecryate mercury nerceptan isobuobAl ketone izopruki keroue (MIBK) isobuty carbinol soamy ketone entities entitate **Adrazine** elismno) ethy ketone chloride euguegeueráu enilinsibenelyrib (enilinsiyitemets)zidenetyite eniline(1/ -N,N)sidenely(t): (eniinsonoka-2)sideneive) TNBUTITS (epereva ruor-r) epereva ruor-AS (epereva veb-a) (vater+organismo) (consumption only) (vater+organismo) (consinention only) Acute mumixeM or Welfare Jetho Chronic Concentration (aquetic organism Taste & Odor Drinking Water (equatic organism Drinking Water (Lowest Observed Effect Level) **VIIC** suoonsingtant notientneono0 snonupuog Toxicity information Other Waters Sources of Other Waters Sources of mumixeM Recommended Criteria One-in-a-Million Cancer Risk Estimate Non-Cancer Health Effects Freshwater Aquatic Life Protection Human Health and Welfare Protection stretlering the water of the state of the stretle stre

# WATER QUALITY GOALS FOR ORGANIC CONSTITUENTS in ug/l (ppb) unless noted

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Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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	<b>Drinking Water Sources</b>	Other Waters	Continuous	Maximum		(30-day Average)	Continuous	Maximum		
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Water Quality Goals - August 2000

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Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

Organics Page 60

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Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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#### (5) uo 30 2.4 õ (c) j6 9'69 30 32 ioze.ur 16 0Z ueu ensbro (E) 500 180 uoz ਖ# 32 (5) SC Ł əsea. modiphenyl ether (D) 51 (89) # \$10.0 A nixc G 280 UOZE jouer, onachor eneulot S.5 # (68) BUISOOJESOS (28) 20.0 euipijoukdos # \$1.0 710.0 euipuedidos 2000.0 # SE0'0 sonomicotine S20.0 0.25 # # 90'0 0.0052 eujjoyduouios enimerynivlynemos (89) # 200.0 ensitientyturem-M-oz 2£000.0 # £003 # £00'0 0.00029 so-N-methylurea (28) 200.0 enimisiyithelythemos # SL0'0 9100.0 # \$10.0 0.0013 convertige-V-oz euimsiyqorqibos # 90'0 0.005 (82) 900.0 #SL (za) 9.F enimisivengibos #07 (Z8) L **6**.E enimetynendibos (28) 7000.0 0.0022 socimetry/amine # 20.0 (28) 2000.0 26000.0 enimelymeibos #10.0 (28) (0.0 0.013 enimelonartielbos # \$1.0 enimelyind-mibos # 60.0 \$900.0 0.006 (B2, 121) 0.0032 Seulu (66) 620.0 eueuxc (89) # 910.0 (89) # 2.0 (56) 620.0 **BRIBITY** (89) # \$1 **BURGOK enedox** sjoua (15. yeb-7) 062 (a) 09 **KOUGU**C (75, VBD-7) 065 oueuc (Yeb-7) 092 IOUe even 0 6 002 004 enibine #92.0 £20.0 ()scetamide -2-(1/712-2-01111-#20 610.0 enonibile -2-[onime-(enebilyunniou) **euoze** #920 720.0 System (IRUS) TNAUTITS (11) Hevel disel bus ARANZ 10 Water Level (102) of Sciences (NAS) A932U Water Level (60) (87) #800 Water Quality Tetra Providing Thinking Water Yealth Advisory Risk Information BupluhQ s se **ушерьза Івлойви** publica e se **DINA** Potency Factor **Agricultural** betergetni Reference Dose 6 25 16V0. (CAM) asometod to DeteW gebier for toxicity other than cancer risk Regulatory KmobsoA IsnobsN A932U ASB CallEPA Cancer (&JAANC) atevel System (IRIS) 29 notitizogor9 Cancer Risk Estimates for Drinking Water esnoqse9-estevbA-oM betseggu2 Risk Information betergetni A932U simolileO Istnemerani noittiM-s-ni-enO Drinking Water Health Advisories or

### WATER QUALITY GOALS FOR ORGANIC CONSTITUENTS in ug/l (ppb) unless noted

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Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

			USEP	A Nationa	I Recom	mmended Ambient Water Quality Criteria							
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	Non-Cancer Health Effects		One-in-a-Million Cancer Risk Estimate			Recommended Criteria							
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Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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#### WATER QUALITY GOALS FOR ORGANIC CONSTITUENTS in ug/l (ppb) unless noted

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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Water Quality Goals - August 2000

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#### WATER QUALITY GOALS FOR ORGANIC CONSTITUENTS in ug/ (ppb) unless noted

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Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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Water Quality Goals - August 2000 It

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Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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WATER QUALITY GOALS FOR ORGANIC CONSTITUENTS in ug/l (ppb) unless noted

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#### WATER QUALITY GOALS FOR ORGANIC CONSTITUENTS in ug/1 (ppb) unless noted

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Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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#### WATER QUALITY GOALS FOR ORGANIC CONSTITUENTS in ug/l (ppb) unless noted

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Water Quality Goals - August 2000

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#### Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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WATER QUALITY GOALS FOR ORGANIC CONSTITUENTS in ug/l (ppb) unless noted

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#### WATER QUALITY GOALS FOR ORGANIC CONSTITUENTS in ug/l (ppb) unless noted

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Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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#### ensitiemon peel ly/r hyldithiopyrophosphate SOLICIANOIO Tetrachtorophenol 3130 (68) (89) 067 IoneriqonolitasteT. F 01/8 2280 28.8 8.0 (BCE) Horoethylene (PCE) 2400 (27) 0726 11 21.0 ensitieoriokosusT. (2+) 0226 -Tetrachioroethane eneznedonolnosteľ-20 (55'53) (ZZ) 092 5.9 2.3 uλ sc I LIOIU (nixoid) (Dioxin) 10000.0> <0.01 8-311 1.3E-8 ə. **Ə**ļ epixo ( **OU** U(00)02 **nibecystin** etstectate diethyldithiocarbamate 10 (24) 91 miby n'n (#5) 01 əu loni üμu **8**0 9 Actonite) souk e 11,000 096 houracit eledin h ebixo en: enimien 60 Ionoola h elstece h bice acid enobeloigo əjozeui (epereva nuor-1) epereva nuor-45 (epereva yeb-4) Officer Chronic (water+organisms) consumption only) (water+organisms) consumption only) THENT etucy munitation or Welfare (Lowest Observed Effect Level) snoouequetsuj Concentration Concentration Taste & Odor (ednatic organism (squatic organism Drinking Water TeheW Britishing **DINV** Toxicity Information mumixelii suounnaci Other Waters Sources of CIDer Waters Sources of Number State< One-In-a-Million Cancer Risk Estimate Non-Cancer Health Effects Human Health and Welfare Protection

#### WATER QUALITY GOALS FOR ORGANIC CONSTITUENTS in ug/l (ppb) unless noted

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Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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#### WATER QUALITY GOALS FOR ORGANIC CONSTITUENTS in ug/l (ppb) unless noted

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Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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Water Quality Goals - August 2000

#### ensitiemens bset lyr etendoorygointiblyn 2010011000 Tetrachiorophenol (28) # (78) 01 (28) 1 000 (28) 01 (28) 1 (28) 1 Tetrachlorophenol 440 (BCE) ensityene (PCE) 420 10'500 # 66 Fetrachloroethane 0Z06 1500 -Tetrachloroethane (22) 621 160 (22) -Tetrachlorobenzene υŃ SC n. uoni (nixoid) OOOT-(92) # 6600000000.0 əu e. θριχο ε - F **OUII** ricotor istocystin eterection i alemedisocirbiblyrubib r θĽ wibγ щл 90 300 (86) 120 (88) 30 (96) loui üüq eur (atinoby) æ souc ə 300 (2S) (EE) # 8800.0 hiouradi etertin ly abixo ene enimiene BÜG Vi sicohol Al acetate hic acid opiolacione OCZEUK Chronic Acute (epereva ruor f) epereva ruor AS (epereva veb-4) mumixeM Average **AVerage NHHO** munmhxelli WINUIXEW Kino notigmusnos TNBUTITS nsibelii Yeb-7 (Lowest Observed Effect Lovel) Concentration Concentration succentingian snoouejuejsuj Viled 30-qəX Atrioni-a wsjuebio openbe **VIIC** Toxicity Information mumbell snonuguog noitsetorg etil sitsupA enirsM (30-day Average) Recommended Criteria dtiseH nemuH Saltwater Aquatic Life Protection Numerical Water Quality Objectives sitetito villaug teteW freidmA bebremmopes Isnolfsu A932U california Ocean Plan

#### WATER QUALITY GOALS FOR ORGANIC CONSTITUENTS in ug/l (ppb) unless noted

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Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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Water Quality Goals - August 2000

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Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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WATER QUALITY GOALS FOR ORGANIC CONSTITUENTS in ug/l (ppb) unless noted

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#### WATER QUALITY GOALS FOR ORGANIC CONSTITUENTS in ug/l (ppb) unless noted

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Water Quality Goals - August 2000

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Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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ofluoromethane		9800	0.19			·				( <u>20)</u>	<u> </u>				
chlorophenol	2600	9800	2.1	6.5	2	<u>                                      </u>		<u> </u>	·		970				
ichlorophenoi			2.1	0.0	2						9/0				
ichloropropane				·				<u> </u>		ļ					
ichloropropane				<u> </u>											
ichloro-1,2,2-triffuoroethane	r	·	•												
ne		· · · · · · · · · · · · · · · · · · ·						· · · · · · · · · · · · · · · · · · ·							
amine	<b></b>	<u> </u>					· · · · · · · · · · · · · · · · · · ·				- <u></u>				
<u>n                                    </u>											· · · · ·				
/lamine	<u> </u>	ļ	4	4		<u> </u>	l	<u> </u>	<u> </u>	ļ	<u> </u>				
imethylbenzene	. <u> </u>	<u> </u>	<u> </u>	↓				<u> </u>	<u> </u>	ļ	<u> </u>				
initrobenzene										ļ					
lycerol			L					L			·				
henol						<u> </u>				230 (88)		150 (38,88			
pluene (TNT)															
ziridiny!)phosphine sulfide										·					
dibromopropy!)phosphate															
										Γ					
nan-P-1	1	1		1		· · · · · · · · · · · · · · · · · · ·	· · · · ·		1	<u>ا</u>	1				
nan-P-2	1	1			·					1					
B	<b>†</b>	<u> </u>	1	1		· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·	<u>                                      </u>			1			
ldehyde		<u> </u>		1		· · · · · · · · · · · · · · · · · · ·	1	······			· · · · · · · · · · · · · · · · · · ·				
1991 <b>119</b>	1		· · ·	<u>+</u>	<b></b> _	<b></b>	+		·	<u>+</u>	····	1			
lin		<u> </u>	<u>+</u>	+		<u>+</u>	+	1	<u>├</u>	+	1	-1			
		<b>├──</b> ───	+	+		<del> </del>	t	<u>↓</u>	<u> </u>	<u>├</u>	<u> </u>				
etate	- <del> </del>	<u> </u>	· · · · · · · · · · · · · · · · · · ·			· · · · · · · · · · · · · · · · · · ·	<u> </u>		<u>↓</u>	+					

Water Quality Goals - August 2000

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Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

#### कोक्सेक्ट ерхцерке. əu 2-9-05 1-9-medic . g-qipromopropy)phosphate epijins euiudsoud(j/uipuiza (TNT) ensulot pueric divcerol eneznedovinn eneznediyrtiemn Animety Цġ enime OUE enertieorouffit)-2,2,1-crothain **ensongropane** ensongorohbin (511) 2.8 (211) 59 (211)1.5 Jonengonoliton iculorophenol enschemoroullo (2113,143) (2113,143) (541,511) 7.5 (ECE) energy (TCE) nchloroethane 42 (113,143) 42 (113,143) (541,511) 03.0 enertechoroethane Seuezuego. euezuequiolitoh eneznedonolnbin elninoteceo bice offection uoj. up euezuegowouqu uoini 8 GUUDS (Xevits) 9 12.0 0.0002 (211) 9200010 67.0 2000.0 (0.00075 (113) (ELL) E2000.0 909 dine hydrochloride enib e diisocyanate 200,000 200,000 0089 Ð εŧ Kujacu-ajeue enilineiboi ດາຮວມ ebimete (egenevA nod-1) (+-day Average) (aperava ruod-1) TITUENT wnwyxejy Kuo uopduinsuoo munulxel (ecereta) (Auo uondunsuoo (smainspro otteupe bns Concentration mainagro obeupa (usjuefuo ogenbe) sucentingent Concentration sucentaneous Concentration notientneono. (consumption of water SINA suoundinoo unupregg (30-day Average) mumixeM snonuguog Other Waters Drinking Water Sources noitcetory etta siteupa retewile? Reshwater Aquatic Life Protection Human Health (egenevA ysb-05) AtlaeH namuH Enclosed Bays & Estuaries stetsW epeirus breint <u>California Toxics Rule Criteria (USEPA)</u>

#### WATER QUALITY GOALS FOR ORGANIC CONSTITUENTS in ug/l (ppb) unless noted

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Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

<u> </u>				Ocean P Quality (		e s			Saltwater A	nded Ambie quatic Life		uality Crite	ria
	Human Health (30-day Average)		Warine A	quatic Life	Protection		R e Continuous	commend	ed Crite Maximum	ria	Tori	city Informa	
ANIC	aquatic organism	6-month	30-day	7-day	Daily	instantaneous	Concentration	Į	Concentration	Instantaneous		bserved Eff	
STITUENT	consumption only	Median	Average	Average	Maximum	Maximum		24-hour Average		Maximum	Acute	Chronic	Other
etamide				1	r	1							
ncarb						· · · · · · · · · · · · · · · · · · ·							
iodianiline											·		
anate-methyl			· · · · · · · · · · · · · · · · · · ·								<u> </u>		
3a				· · · · · · · · · · · · · · · · · · ·	<b></b>					· · · · · · · · · · · · · · · · · · ·			
7a		<i></i>	<u> </u>					<u> </u>					
e	85,000				<b> </b>			<u> </u>	<u> </u>		6300	5000	
e diisocyanate					<u> </u>			<u> </u>	<u> </u>				
dine	++							<u> </u>					
dine hydrochloride	·							<u>+-</u>	<u> </u>				
	0.00021 #						0.0002	+	0.21				
P (Silvex)	0.00021#		· · · · · · · · · · · · · · · · · · ·		·		0.0002						
ethrin			· · ·					<u></u>					
ð	<u>∱</u> -†				<del> </del>			<u> </u>					i
luron	<u> </u>			+			· · · · · · · · · · · · · · · · · · ·		1			· · · · · · · · · · · · · · · · · · ·	
ribromobenzene					· · · · · ·								
tin	0.0014						0.010		0.37				
fon							0.010		0.07				
roacetic acid	1	· · · · · ·						<b>+-</b>					
roacetonitrile						1		<u> </u>					
richlorobenzene	<b></b> +										160 (22)	129 (22)	
richlorobenzene						*				···· ·	160 (22)	129 (22)	
obenzenes				- <b></b>		· · · · -	<b></b>		1		160 (22)	129 (22)	
richloroethane	540,000										31,200	120 (22)	
richloroethane	43,000				· · · · · · · · · · · · · · · · · · ·						01,200		
oethylene (TCE)	27 #				<u> </u>		<b></b>				2000		
ofluoromethane					1			·			12,000 (20)	6400 (20)	11,500 (20,82)
richlorophenol		1 (87)			4 (87)	10 (87)			1				
richlorophenol	0.29#	1 (87)			4 (87)	10 (87)	·						
richloropropane			· · · · · · · · · · · · · · · · · · ·				1		· · · · · ·				
richloropropane	1						1						
richloro-1,2,2-trifluoroethane							1					· · · · · · · · · · · · · · · · · · ·	
ane													
amine				1		1							
lin					1								
iylamine												1	
rimethylbenzene					·····		1	1					
rinitrobenzene										1	i	[	
glycerol					1		1		·				
phenol		30 (86)	<u> </u>		120 (86)	300 (86)					4850 (88)		
toluene (TNT)					1			1			· · · ·		
ziridinyl)phosphine sutfide											i	<u> </u>	
i-dibromopropyl)phosphate				1				1		<u> </u>			
1	1 1									[			
han-P-1	1							·					
han-P-2				1									
10	j 1									1			
aldehyde													
1									· · ·				
olin	1												
petate	1		•					T		L			
omide	1		7	1	T	1	1		· · · · · · · · · · · · · · · · · · ·			1	

Water Quality Goals - August 2000

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Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

Water Quality Goals - August 2000

#### Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

WATER QUALITY GOALS FOR ORGANIC CONSTITUENTS in ug/l (ppb) unless noted

epiu	2-09-269	Bromoethene	Bromoethytene	
etet	108-02-4			
ui	20411-44-8	Ronian	······································	
<u></u>	L-11-6261	etsiomeV		·····
ер/цәр	110-62-3	ebyneity aldebia fymA	Pentanal Isnahred	
	9-62-19	Ethy carbamate		· · · · · · · · · · · · · · · · · · ·
3-1-5	1-20-05#29	Trp-P-2		
1-9-06	62450-06-0	1-9-0T		······································
	9-61-982	Cerpobyeuothion		
eteridsorid(tyqorqomordi	126-72-7			
ebilluz enindzond(lynibi	25-54-4	Thiotepa		
(INI) anau	2-96-811	1NL	· · · · · · · · · · · · · · · · · · ·	······································
	1-68-88	Picric acid		
/cero/				
eneznedotin	7-SE-66			
euezueqi/ujeu	8-29-801	Mesitylene	enezneciyntemnT-leordemmys	·····
enime	£-09-94			
	9-60-2951	nsilarT		·····
enin	121-44-8			···· • · · · · · · · ·
0010	2-80-98-189	mebraT		
ensitieorouthit-S.S.1-orold	19-13-13	Trichlorothikkmeinene Teshan	Elt noen	
Prisquedus and a subsequence of the subsequence of	7-81-96	Sinchical and a second		
anegorgorold	9-22-865	estropolari bala		
lonerdonoirt	88-02-5			· · · · · · · · · · · · · · · · · · ·
horendoreld	*-96-96			
ensitiemorout			11 UOBU <u>3</u>	
(ICE)	9-10-62	Trichloroetherie Fluorotrichlorymethene	LCE	······································
ensitieonolit			Viny thehoride	
ensrtecroid	<u>\$-00-62</u>	1,1,2-TCA		·····
seuezued	9-55-12	Benzenes, trichloro- Li,1,1,1	Methyl chloroform	· · · · · · · · · · · · · · · · · · ·
	12002-48-1	-Coltin second		
anaznadorokt anaznadorokt	£-02-901			
	120-82-1	unsymmetrical-frichiorobenzene		
scetic acid	242-06-05			
hine offend	6-20-92	Thickness and the second secon	CO1000000	
	9-89-25 2-62-889		Tin, tributyl- Chlorofos	Dipterex
อบอวนอดุฉนเม	E-#9-519		-htticht diT	·····
UQ	9-09-26028	19dmA	·	
	5303-11-2			
	9-52-1-899	KU 25474		
(Xaviik)				
(vedi2)	5-92-66	Camphechlor 2,4,5-Trichlorophenoxypropionic acid	Xevis	
e pydrochloride	8001-32-5		Chlorocamphene	
epindrodyd er	636-21-2	ebhołdochyń eneutolonimA-S		
lisocyanate	82-23-4	ensulationimA-S		
etenevoosiit	5-29-12+92			
· · · · · · · · · · · · · · · · · · ·	108-88-3	eneznediyiteMi		
	132-36-8			· · · · · · · · · · · · · · · · · · ·
	62-56-6			
Ndiem-eis	53264-02-8	etenstoiutityitisM		
eniinei eniinei	1-59-681	0.0000 0.000		· · · · · · · · · · · · · · · · · · ·
dhe Che	58249-17-6	Benthlocarb	Bolero	· · · · · · · · · · · · · · · · · · ·
əbimi	62-55-5			
TITUENT	JedmuN		ynonyms and Abbrevisio	
NIC	<b>Ynsige</b> <i>R</i>			
	Service			
	stoentedA			
	lecimed) strented&			

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		Drinking Water S Maximum C	Standards (Calli Contaminant Lev	California Public Health Goal (PHG) In Drinking Water (Office of Environmental	California Sta	Other			
ANIC	California Dept.	of Health Services	U.S. E	Invironmental Protection Ag					
STITUENT	Primary MCL	Secondary MCL	Primary MCL	Secondary MCL	MCL Goal	Assessment)	Toxicity	Taste & Odor	Thresholds
nloride	0.5		2		zero	0.043 (100)			3400 (126)
Juene		1 1							420 (126)
in									
(s)	1750		10,000	20 (100)	10,000	1800		1	17 (26,126)
idine									1800 (126)
idine				-					

Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

	USEPA integrated Risk Information	Drinking Water Health Advisories or Suggested No-Adverse-Response		Cano	One-in-a-Millic er Risk Estimate	California Proposition 65			
ANIC	System (IRIS) Reference Dose as a Drinking	for toxicity othe	(SNARLs) er than cancer risk National Academy	Cal/EPA Cancer Potency Factor as a Drinking	USEPA Integrated Risk Information	USEPA Drinking Water Health Advisory	National Academy of Sciences (NAS) Drinking Water	Regulatory Level as a Drinking Water	Agricultural Water Quality
STITUENT	Water Level (60)	USEPA	of Sciences (NAS)	Water Level (102)	System (IRIS)	or SNARL	and Health	Level (14)	Goals (78)
nloride	21	3000 (10-day)		0.13	0.048 / 0.096 (156)	0.02 (A)	1.1	1.5#	
luene									
n	2							R	· · · · · · · · · · · · · · · · · · ·
(s)	14,000	10,000 (68)			(D) ·	(D,68)			· · · · · · · · · · · · · · · · · · ·
idine									
idine								50 # (68)	
	350		35						
			87.5						[

Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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					F					· · · · · · · · · · · · · · · · · · ·		
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				l								
												909
						L		979	5.0			epino
<b>Tertio</b>	Chronic	Acute	muminal	(1-POIL AVERAGE)	St-hour Average	(4-day Average)	or Welfare	(ฟุมอ แอมูส์เมกระเอะว	(SERSINE (200419/km)	(Aluo nondrinsnoo	(SUISIUEBIO+JOJEM)	THENT
(INVOJ TOB	113 berved Ett	1 1 8 0 MO 1 ]	auconameteri	Concentration	ļ	Concentration	Taste & Odor	mainagro obsupe)	Neter gabland	mainegro otteupe)	NoteW Britishin	3 I N I C
nolt	smyotal ytisi.	xoT	l	mumixeM		Continuous		Office Waters	Sources of	Other Waters	jo secunos	
					puemmos	• ¥		etemitel keis recimate	60 noilith-s-ni-sn0	ealth Effects	Non-Cancer	
		ejol4 et	(J Sitsup	<u>A letswid</u>	Fres		1	Profiserong	erellew bre	isleeH nemuH		
		<u>e [] e</u>	1114 C 111	sup retev	V Jneldm/	Г рерчеш	moseX i	«nois»N A	4350			

Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

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			Ca d Surface W		Iteria (USEPA) Enclosed Bays & Estuarles					
	Human Health (		Freshwater Aquatic Life Protection			Human Health	Saitwater Aquatic Life Protection			
ANIC Stituent	Drinking Water Sources (consumption of water and aquatic organisms)		Continuous Concentration (4-day Average)	Maximum Concentration (1-hour Average)	instantaneous Maximum	(30-day Average) aquatic organism consumption only	Continuous Concentration (4-day Average)	Maximum Concentration (1-hour Average)	instantaneous Maximum	
hlaride	2 (113,143)	525 (113,143)			· · · · · · · · · · · · · · · · · · ·	525 (113,143)				
luene										
n										
(s)										
dine										
dine							·			
						<u> </u>		<u>}</u>		

Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

	Nu	California Ocean Plan Numerical Water Quality Objectives						USEPA National Recommended Ambient Water Quality Criteria Saltwater Aquatic Life Protection						
	Human Health (30-day Average)		Marine A	quatic Life	Protection		R e Continuous	commend	ed Crite Maximum	<u>rla</u>	Tox	city inform:	ation	
ANIC Stituent	aquatic organism consumption only	6-month Median	30-day Average	7-day Average	Daity Maximum	Instantaneous Maximum	Concentration (4-day Average)	1	Concentration (1-hour Average)	Instantaneous Maximum	(Lowest C Acute	bserved Eff Chronic	iect_Level) Other	
hloride	36#				<b></b>								·	
sluene						·			1					
in													L	
(s)														
idine														
idine					ļ								<u> </u>	
				<u> </u>									<b> </b>	
			L	<u></u>	1		L	<u> </u>		L	l		<u>i                                    </u>	

Water Quality Goals - August 2000

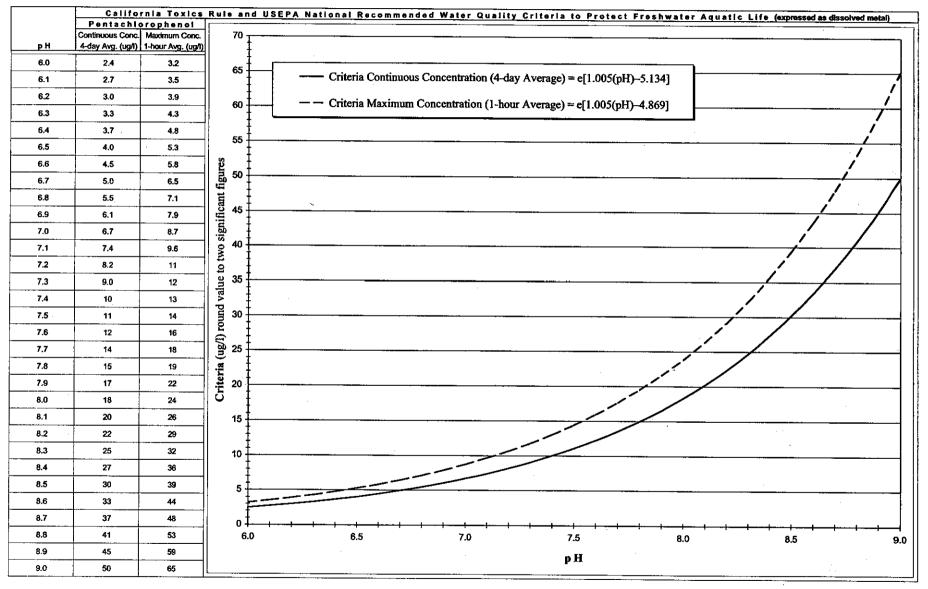
Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

ANIC Stituent	Chemical Abstracts Service Registry Number		Synonyms and Abbre	viations	
ntoride	75-01-4	vc	Chloroethene	Chloroethylene	
luene	25013-15-4	Methyl styrene			
n	81-81-2	Coumadin	Coumafen		
(s)	1330-20-7	o-Xytene	m-Xylene	p-Xytene	
idine	1300-73-8	Amino-2,4-dimethylbenzene	2,4-Dimethylaniline		
idine	87-62-7	2,6-Dimethylaniline	Amino-2,6-dimethylbenzene		
	12122-67-7	Dithane Z-78			
	137-30-4				

Water Quality Goals - August 2000

Items in parentheses are footnotes. # = carcinogen. R = reproductive toxin.

# WATER QUALITY GOALS FOR ORGANIC CONSTITUENTS FRESHWATER AQUATIC LIFE - PENTACHLOROPHENOL



Water Quality Goals - August 2000

From References 17 and 26.

# FOOTNOTES

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A Compilation of Water Quality Goals — August 2000 Edition

#### **EOOTNOTES**

(83) Adverse effects on a fish species exposed for 168 days.

For oxychiordane and alpha and gamma isomers of chiordane, chiordane and nonachior.

Recommended tevel: Upper level = 1600 umbos/cm; Short-term fevel = 2200 umbos/cm.

At pH 6.8, caused 50% reduction in growth of yearling sockeye salmon in 56-day test.

Draft / tentative / provisional; applies only to second value if more than one value listed.

may be present as decomposition product in Federal, Maneh, Nabam, Thran, Zineh, and Ziram.

For "TCDD equivalents" calculated as the sum of 2,3,7,8-chloringted dibenzotioxin and dibenzoturan concentrations

12/17/03 for all other systems; maximum residual disinfectant level and goal; apply only if this disinfectant is used. As CIO2; federal limit effective 12/17/01 for surface water systems serving >10,000 people; federal limit effective

12/17/03 for all other systems; maximum residual disinfectant level and goal; apply only if this disinfectant is used.

Assumes 70 kg body weight, 2 fiters/day water consumption, and 20% relative source contribution from othinking water.

ni eulsy aud-42 betall erti narti revol biol-001 ed ol bescrinicae asw leves LevendesA-esterba-old-betaeggu2 cinorid?

Guidance level assumes relative source contribution of 10% from drinking water, Reference 3.

As CI; federal limit effective 12/17/01 for surface water systems serving >10,000 people; federal limit effective

A decrease in the number of algal cells occurs.

For elemental phosphorus; marine or estuarine.

multiplied by their respective USEPA Toxicity Equivalency Factors.

Value for the technical grade of chemical or mixture of isomers.

Average chain length, C12; approximately 60% chlorine by weight.

An additional uncertainty factor of 10 is used for Class C carcinogens.

. Kecommended level; Upper level = 1000 mg/L; Short-term level = 1500 mg/L.

Recommended level; Upper level = 500 mg/L; Short-term level = 600 mg/L.

.(N sts) 1/gu 000,01 = shiftin suid atstiin latot tot JOM, notitible ni ;CON aA

Unless otherwise noted, from Reference 19.

For 1,2- and 1-3-dichlorobenzenes.

UNDERIGENCE RECEIPTING

For Arochlor 1260.

Based on kepone.

P-month median.

For haloethers.

For nitrosamines.

From Reference 30.

From Reference 20.

For dinitrotoluenes.

.9 ecrements mon 7

For DDT, DDD, and DDE.

For chicroality! ethers.

For white phosophorus.

For chlorinated systems.

Toxicity to algae occurs.

For mononitrophenois.

For chiomated happing energy

For sum of philhalate esters.

-OL DEUZEUG UEXSCUOUDE IZOUDELZ'

For polynuclear aromatic hydrocarbons.

Ievel: EPA Suggested-No-barseponse 1. 2. U 0861

For endosultan-signe, endosultan-bets and endosultan sultate.

For carcinogenic polynuclear aromatic hydrocarbons.

Celculated from com of gevage animal study / from drinking water animal study.

"IAA8! SILL DUNBINGED

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(99)

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(85)

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(99)

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(ZS)

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(09)

(67)

(84)

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(97)

(57)

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(1.4)

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(28)

I aga 2 solonoo J

For exposure of 7 days or less.

Probable numan carcinogen.

- (Yeb-7)

- (Yeb-01) For exposure of 10 days or less.
- (24-hr) For exposure of 24 hours or less.

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- (Z) .eldenevocen listot als bessengua

.eonebive eleupedent or stab on tytoinegonions namund of as beilizzats toll

Probable human carcinogen; limited epidemiologic evidence in humans.

Known human carcinogen; sufficient epidemiologic evidence in humans.

Possible human carcinogen; fimited evidence from animal studies; no human data.

Probable human carcinogen; sufficient evidence from animal studies; no or inadequate human data.

- Vertes from 1.4 to 2.4 mg/t, with air temperature; see Title 22, CCR, Section 64435, Table 4. (c)
- For dissolved chloride associated with sodium; criterion probably will not be adequately protective when chloride is (+)
- sesociated with potassium, calcium, or magnesium, rather than sodium.
- Based on reproductive toxicity; applies only to second value if more than one value is listed. (<u>c</u>)
- Pentavalent arsenic (As(V)) effects on plants. (9)
- Calculated for child / for adult. ω

Evidence of non-carcinogenicity for humans.

Water Quality Goals - August 2000

Flavor impairment in a fish species occurs.

For heptachior and heptachlor epoxde.

phenanthrene, and pyrene.

ror dictrioropropenes.

For dichlorophopenes.

For dichloroethylenes.

.seneznedoroldbib to f

For chloringted benzenes.

Based on limited evidence.

-rom Reterence 8.

For halomethanes.

Mortality to early life stages of a fish species occurs.

Adverse behavioral effects occur to one species.

Toxicity to a fish species exposed for 7.5 days.

.ebyfies separately to endrin and endrin aldehyde.

Toxicity to one species of fish after 2600 hours of exposure.

Mortality in a fish species after 30 day exposure.

solution of the secti

risk estimate unless otherwise noted.

Eased on organoleptic considerations (taste, odor, color, laundry staining, etc.)

As CaCO<sub>3</sub>; minimum criterion except where natural concentrations are less.

1983 Suggested-No-Adverse-Response Level; to be reviewed in the future.

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(0Z)

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(91)

(31)

- As CaCO<sub>3</sub>; minimum concentration except where natural concentrations are less. (6) .Et eonerelest ; yrosivba yffsug retsW A93 .2.U ;notterneonoo yrosivba (8)
- From Reference 1. (01)
- (11) For dinitrophenols.
- . When developed for chromium (VI); may be applied to total chromium if valence unknown. (21)

Determined not to pose a risk of cancer through ingestion (Title 22, CCR, Section 12707).

- Regulatory dose level divided by 2 liters per day average consumption; represents a 1-in-100,000 incremental cancer (#L)

For total trihatometranes (sum of bromotom, bromodichlorometrane, chloroform and ditormochlorometrane); based

benzo(g,h,i);erytere, benzo(s)pyrene, chrysene, dibenz(a,h)antinacene, fluorene, indeno(1,2,3-c,d)pyrene, For sum of acenaphthylene, anthracene, benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene,

- For sum of bromotorm, bromomethane, chloromethane, dibromochloromethane, and bromodichloromethane.

- (£1)

#### FOOTNOTES

- (84) At no time exceed 5 NTU; systems that filter must not exceed 1 NTU (0.5 NTU for conventional or direct filtration) in at least 95% of daily samples in any month. Effective December 2001, 0.3 NTU for conventional or direct filtration systems serving >10,000 people. Proposed 0.3 NTU 95th percentile and 1 NTU maximum for systems serving <10,000 people.</p>
- (85) Expressed as total recoverable; this National Toxics Rule criterion applies to SF Bay through Susuin Bay and Sacramento-San Joaquin Delta, Salt Slough, Mud Slough (north), and San Joaquin River, Sack Dam to mouth of Merced River; does not apply to San Joaquin River, mouth of Merced to Vernalis; see reference 23.
- (86) For nonchlorinated phenolic compounds.
- (87) For chlorinated phenolic compounds.
- (88) For nitrophenols.
- (89) Expressed as nitrogen.
- (90) For total chlorine residual; for intermittent chlorine sources see Chapter IV, Table B of Reference 28.
- (91) Second value from Reference 16.
- (92) For 3,3'-Dichlorobenzidine and its salts.
- (93) Based on toxicity of benzo(a)pyrene and Potency Equivalency Factors of Cal/EPA, OEHHA; see Reference 18.
- (94) Criterion refers to the inorganic form only.
- (95) For the pentavalent form.
- (96) EC50 for eastern cyster embryos.
- (97) Expressed as total recoverable; this National Toxics Rule criterion applies to SF Bay through Susuin Bay and Sacramento-San Joaquin Delta, Salt Slough, Mud Slough (north), and San Joaquin River, Sack Darn to mouth of Merced River; does not apply to Grassland Water District, San Luis National Wildhife Refuge, and Los Banos State Wildhife Refuge; see reference 23.
- (98) For total residual chlorine.
- (99) For sum of chlorine-produced oxidants.
- (100) Proposed; applies only to second value if more than one value is listed.
- (101) MFL = million fibers per liter; limited to fibers longer than 10 um.
- (102) Assumes 70 kg body weight and 2 fiters/day water consumption.
- (103) As nitrogen (N); in addition, limit for total nitrate + nitrite = 10,000 ug/L (as N).
- (104) Based on endosulfan; USEPA Water Quality Advisory; Reference 13.
- (105) No more than 0.05% monomer when dosed at 1 mg/L for drinking water treatment; see Reference 2.
- (106) For five haloacetic acids (sum of mono-, di-, and trichloroacetic acids and mono- and dibromoacetic acids).
- (107) Unleaded; based on benzene.
- (108) For molecules with 60% chlorine or greater by molecular weight; applies only to second value if more than one value listed.
- (109) Optimal fluoride level and (range) vary with annual average of maximum daily air temperature; 50.0 to 53.7 degrees F 1.2 (1.1 1.7) mg/L; 53.8 to 58.3 degrees F 1.1 (1.0 1.7) mg/L; 58.4 to 63.8 degrees F 1.0 (0.9 1.5) mg/L; 63.9 to 70.6 degrees F 0.9 (0.8 1.4) mg/L; 70.7 to 79.2 degrees F 0.8 (0.7 1.3) mg/L; 79.3 to 90.5 degrees F 0.7 (0.6 1.2) mg/L;
- (110) Picocuries per liter, including Radium-226 but excluding Radon and Uranium,
- (111) MCL includes this "Action level" to be exceeded in no more than 10% of samples at the tap.
- (112) Criterion expressed as unionized ammonia; criteria based on total ammonia are shown on inorganics Page 14.
- (113) Based on carcinogenicity at 1-in-a-million risk level.
- (114) Developed as 24-hour average usinig 1980 USEPA Guidelines; but applied as 4-day average in the National Toxics Rule, reference 22,
- (115) Criterion most appropriately applied to the sum of alpha-Endosulfan and beta-Endosulfan. Reference 26.
- (116) Applies separately to Aroclors 1242, 1254, 1221, 1232, 1248, 1260, and 1016; based on carcinogenicity at 1-in-amillion risk level.
- (117) Effluent limitation for wastes discharged to waters.
- (118) For the sum of Aroclors 1016, 1221, 1232, 1242, 1248, 1254, and 1260.
- (119) Cancer classification not supported by ingestion data.
- (120) For isomers with chlorines in 2.3.7 and 8 positions.
- (121) Cancer risk may not be linear with dose above 60 ug/L.
- (122) For the oxide form.

- (123) For the pentoxide form.
- (124) For the gas phase.
- (125) Applies to first value if more than one value listed. From Reference 7,
- (126) Applies to second value if more than one value listed. Water-dilution odor threshold calculated from air odor threshold using equilibrium distributions. From Reference 29.
- (127) For protection of consumers of marine moluscs.
- (128) Virtually free from oil and grease, particularly from the tastes and odors that emanate from petroleum products.
- (129) 0.01 of the lowest continuous flow 96-hour LC50 to several important freshwater and marine species, each having a demonstrated high susceptibility to oils and petrochemicals; surface waters shall be virtually free from floating nonpetroleum oils of vegetable or animal origin, as well as petroleum derived oils.
- (130) Waters shall be virtually free from substances producing objectionable color for aesthetic purposes; the source of supply should not exceed 75 color units on the platinum-cobalt scale for domestic water supplies.
- (131) Increased color, in combination with turbidity (suspended and settleable solids) should not reduce the depth of the compensation point for photosynthetic activity by more than 10% from the seasonally established norm for aquatic tife.
- (132) For open ocean waters where depth is substantially greater than euphotic zone, pH should not be changed > 0.2 units from naturally occurring variation or in any case outside of range 6.5 to 8.5. For shallow highly productive coastal and estuarine areas where naturally occurring pH variations approach the lethal limits of some species, change in pH should be avoided but in any case should not exceed limits for freshwater., i.e., 6.5 to 9.0.
- (133) For chlorides and sulfates in domestic water supplies,
- (134) Based on the assumption that 7.2% of Cr is Cr(VI),
- (135) Expressed as total recoverable; may be converted to a value expressed as dissolved by multiplying by 0.922,
- (136) The Maximum Concentration is equal to 1/ [((1/185.9) + (12/12.83)], where f1 and f2 are the fractions of total selenium that are treated as selenite and selenate, respectively.
- (137) Expressed as free cyanide (as CN).
- (138) Not toxic to aquatic organisms at or below the solubility limit of this chemical. Reference 26.
- (139) The derivation of this criterion did not consider exposure through the diet, which is probably important for aquatic life occupying upper trophic levels, Reference 26,
- (140) Criterion derived from data for inorganic mercury (II), but is applied to total mercury. It will probably be underprotective if a substantial portion of mercury in the water column is methylmercury. Derivation of criterion did not consider exposure through the diet, which is probably important for aquatic life occupying upper trophic levels. Reference 26.
- (141) See Reference 16.
- (142) Criteria do not apply to waters subject to water quality objectives in Tables III-2A and III-2B of the San Francisco Bay Regional Water Quality Control Board's 1986 Basin Plan. See Reference 17.
- (143) These criteria were promulgated for specific California waters in the National Toxics Rule, Reference 23.
- (144) Applies to "TCDD Equivalents" calculated from the concentrations of 2,3,7,8-chlorinated dibenzodioxins and 2,3,7,8-chlorinated dibenzodioxins and 2,3,7,8-chlorinated dibenzodioxins and their corresponding toxic equivalency factors (TEFs); see Reference 27,
- (145) No more than 0.01% monomer when dosed at 20 mg/L for drinking water treatment; see Reference 2.
- (146) From Reference 31.
- (147) Effective 12/17/01 for surface water systems serving >10,000 people; effective 12/17/03 for all other systems.
- (148) Effective date postponed.
- (149) 100 ug/L TTHM MCL effective until 12/17/01 for systems serving >10,000 people, then 80 ug/L MCL is effective; effective date for 80 ug/L MCL is 12/17/03 for all other systems.
- (150) Applies to the lithium salt.
- (151) Criterion derived by the California Department of Fish and Game; not a national recommended criterion. Applies to first value if more than one value is tisted. From Reference 32.
- (152) Interim criterion derived by the California Department of Fish and Game; not a national recommended criterion. Applies to first value if more than one value is listed. From Reference 32.
- (153) For the (+2) valence state.
- (154) Second and third values are draft criteria. Second value derived using nonlinear approach assuming a relative source contribution. Third value derived using linear approach without a relative source contribution.
- (155) A based on inhalation exposure data / D based on oral exposure data.
- (156) Adult exposure / exposure from birth.
- (157) Action Level temporarily at 1-in-100,000 risk level.

# Footnotes Page 3

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- California Public Health Goals (PHgs) in Drinking Water Reference 10.
- California State Action Levels Reference 5.
- Other Taste & Odor Thresholds References 8, 29, 30 and 31,
- USEPA Integrated Risk Information System Reference Doses Reference 6.
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- Agricultural Water Quality Goals Reference 19.
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References Page 1

# STATE OF CALIFORNIA — ENVIRONMENTAL PROTECTION AGENCY STATE WATER RESOURCES CONTROL BOARD

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CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY Winston H. Hickox, Secretary

#### STATE WATER RESOURCES CONTROL BOARD

Arthur G. Baggett, Jr., Acting Chair

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1 September 2000



	California Regional Water Quality Control Board Central Valley Region Steven T. Butler, Acting Chair	
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Sacramento Main Office Internet Address: http://www.swrcb.ca.gov/~rwqcb5 3443 Routier Road, Suite A, Sacramento, California 95827-3003 Phone (916) 255-3000 • FAX (916) 255-3015

TO: Technical Staff and Other Interested Persons FROM:

Jon B. Marshack, D.Env. Senior Environmental Specialist Environmental/Technical Support

**DATE:** 11 October 2000

Protection

SIGNATURE:

SUBJECT: NEW PUBLIC HEALTH GOALS FOR CHEMICALS IN DRINKING WATER

In September 2000, the California Office of Environmental Health Hazard Assessment (OEHHA) adopted six new Public Health Goals (PHGs) for chemicals in drinking water. PHGs are levels of drinking water contaminants at which adverse health effects are not expected to occur from a lifetime of exposure. The California Safe Drinking Water Act of 1996 (Health and Safety Code Section 116365) requires OEHHA to adopt PHGs based exclusively on public health considerations. PHGs adopted by OEHHA will be considered by the California Department of Health Services in establishing or revising primary drinking water standards (California Maximum Contaminant Levels, or MCLs).

PHGs and other toxicological criteria may be used to evaluate compliance with narrative water quality objectives for Toxicity in the Basin Plans, as these objectives relate to beneficial uses involving human exposures (e.g., municipal and domestic supply or "MUN"). Therefore, ambient groundwater or surface water with chemical concentrations above PHGs could be interpreted as violating water quality objectives if the waters are designated MUN.

The new Public Health Goals for drinking water are as follows:

Carbofuran	1. <b>7</b>	ug/L (ppb)
Carbon tetrachloride	0.1	ug/L (ppb)
Dichloromethane (Methylene chloride)	4	ug/L (ppb)
Diquat	15	ug/L (ppb)
Thiobencarb <sup>1</sup>	70	ug/L (ppb)
Vinyl chloride	0.05	ug/L (ppb)

Technical support documents for these PHGs are available in electronic format. Please contact me by phone (916-255-3123 or CalNet 8-494-3123) or by e-mail (MarshaJ@rb5s.swrcb.ca.gov) if you need one or more of these documents or if you have any questions.

cc: Frances McChesney, Office of the Chief Counsel, SWRCB Tim Regan, Office of the Chief Counsel, SWRCB

<sup>&</sup>lt;sup>1</sup> This PHG covers the parent compound, (thiobencarb), its chlorobenzyl and chlorophenyl moiety-containing degradation products and oxidation products such as thiobencarb sulfoxide, thiobencarb sulfone, and 4-chlorobenzosulfonic acid.

# California Regional Water Quality Control Board Central Valley Region



Gray Davis Governor

Winston H. Hickox Secretary for Environmental Protection

Sacramento Main Office Internet Address: http://www.swrcb.ca.gov/rwqcb5 3443 Routier Road, Suite A, Sacramento, California 95827-3003 Phone (916) 255-3000 • FAX (916) 255-3015

**TO:** Technical Staff and Other Interested Persons FROM:

Jon B. Marshack, D.Env. Senior Environmental Specialist Environmental/Technical Support

DATE: 5 December 2000

SIGNATURE:

SUBJECT: NEW ACTION LEVELS AND IRIS CRITERIA FOR DRINKING WATER

# **DHS** Action Levels

In October and November, the California Department of Health Services published eight new Action Levels for chemicals in drinking water. Action Levels are health-based advisory levels for chemicals that do not yet have primary Maximum Contaminant Levels (MCLs). The new Action Levels for drinking water are as follows:

Vanadium	. 15	ug/L (ppb)
sec-Butylbenzene	260	ug/L (ppb)
tert-Butylbenzene	260	ug/L (ppb)
Isopropylbenzene (Cumene)	770	ug/L (ppb)
N-Methyl dithiocarbamate (Metam sodium)	20	ug/L (ppb)
Methylisothiocyanate (MITC)	50	ug/L (ppb)
n-Propylbenzene	260	ug/L (ppb)
2,3,5,6-Tetrachlorotherephthalate	3500	ug/L (ppb)

# **USEPA IRIS Criteria**

Since August, USEPA has published revisions to their Integrated Risk Information System (IRIS) database. IRIS contains two types of toxicologic criteria, reference doses for non-cancer health effects and cancer risk levels. Drinking water concentrations may be derived from these criteria using standard toxicologic assumptions.<sup>1</sup> The new and revised IRIS criteria as drinking water concentrations are as follows:

<sup>1</sup> See "Selecting Water Quality Goals" in the CVRWQCB report A Compilation of Water Quality Goals (August 2000). California Environmental Protection Agency

	Refe	rence Dose	<u>10</u>	<sup>-6</sup> Cancer Risk Level
Chloral hydrate	70	ug/L (ppb)		
Chlorine dioxide	210	ug/L (ppb)		
Chlorite (sodium salt)	210	ug/L (ppb)		•
Vinyl chloride			0.048	ug/L (ppb) adult exposure
	-		0.024	ug/L (ppb) exposure since birth

The difference between the two vinyl chloride criteria is the assumed exposure duration.

Action Levels, IRIS criteria and other toxicologic limits may be used to evaluate compliance with narrative water quality objectives for Toxicity in the Basin Plans, as these objectives relate to beneficial uses involving human exposures (e.g., municipal and domestic supply or "MUN"). Therefore, ambient groundwater or surface water with chemical concentrations above DHS Action Levels could be interpreted as violating water quality objectives if the waters are designated MUN.

The above criteria and the six Public Health Goals adopted by OEHHA in September (see my memo of 11 October 2000) are not contained in the August 2000 edition of *Water Quality Goals*. The *Water Quality Goals* report and updates may be obtained on the internet at www.swrcb.ca.gov/rwqcb5/wq\_goals.

Please contact me by phone at (916) 255-3123 or CalNet 8-494-3123 or by e-mail at marshaj@rb5s.swrcb.ca.gov if you have questions.

cc: Frances McChesney, Office of the Chief Counsel, SWRCB Tim Regan, Office of the Chief Counsel, SWRCB

# California Regional Water Quality Control Board

Winston H. Hickox Secretary for Environmental Protection

TO:

Central Valley Region

Robert Schneider, Chair

Sacramento Main Office Internet Address: http://www.swrcb.ca.gov/rwqcb5 3443 Routier Road, Suite A, Sacramento, California 95827-3003 Phone (916) 255-3000 • FAX (916) 255-3015

Technical Staff and Other Interested Persons FROM:

Jon B. Marshack, D.Env. Senior Environmental Specialist Environmental/Technical Support

Grav Davis

Governor

DATE: 8 February 2001

SIGNATURE:

## SUBJECT: WATER QUALITY GOALS UPDATE

This is the third notice of changes since the publication of the August 2000 edition of *A Compilation of Water Quality Goals*. This notice contains an explanation of the most recent changes as well as instructions for updating your copy of that document to reflect all three notices. The *Water Quality Goals* report and all updates may be obtained on the internet at www.swrcb.ca.gov/rwqcb5/wq\_goals.

## New Arsenic MCL

On 22 January, USEPA adopted a new drinking water standard for arsenic. The new Primary Maximum Contaminant Level (MCL) of 10 ug/L is lower than California's current MCL of 50 ug/L. The Safe Drinking Water Act requires that State MCLs be equal to or lower than federal MCLs; so, expect to see a new California MCL for arsenic in the near future. MCLs are not purely health protective concentrations. They include technologic and economic factors associated with providing municipal water at the tap.

Arsenic in drinking water at concentrations lower than the MCL are associated with significant adverse health effects. Arsenic is a known human carcinogen. USEPA adopts MCL Goals at a level that represents no health risk. Because exposure to any amount of a carcinogen is theoretically associated with some risk of getting cancer, USEPA sets MCL Goals for known and probable human carcinogens at "zero." A new MCL Goal for arsenic has been set at this level. The one-in-a-million cancer risk level – the concentration of arsenic in drinking water associated with one additional cancer case in a million persons exposed over their lifetimes – has been estimated at 0.02 ug/L. In interpreting the narrative Toxicity objective in the Basin Plan for carcinogens, we normally cite the one-in-a-million cancer risk level as the *de minimis* or negligible level of cancer risk associated with involuntary exposure of humans to municipal and domestic water supplies. However, natural background concentrations of arsenic in most locations are expected to exceed this concentration.

California Environmental Protection Agency

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Arsenic exposure is also associated with other adverse health effects, including cellular necrosis, skin lesions and abnormal nerve conduction. USEPA's Integrated Risk Information System (IRIS) database includes a reference dose (RfD) for arsenic. The RfD can be converted into a concentration of arsenic in drinking water that should protect against non-cancer health effects. That concentration is 2.1 ug/L.

The state Office of Environmental Health Hazard Assessment is expected to propose a Public Health Goal for arsenic in drinking water in the near future.

## **Radionuclide MCLs**

On 7 December, USEPA revised the federal drinking water regulations for radionuclides. A new federal Primary MCL was adopted for uranium at 30 ug/L, with an effective date for community water systems of 8 December 2003. Because radionuclides are carcinogens, MCL Goals of "zero" were also adopted by USEPA for gross alpha particle activity, gross beta particle and photon activity, radium-226 plus radium-228, and uranium.

The current California Primary MCL for uranium -20 picocuries per liter (pCi/L) - is in different units than the new federal MCL. The Department of Health Services plans to propose adoption of a new California Primary MCL for uranium that is equal to the new federal MCL.

#### **Methylmercury Water Quality Criterion**

In late January, USEPA issued a new recommended Ambient Water Quality Criterion for methylmercury to protect human health from exposure to mercury from the aquatic environment. The new criterion is 0.3 mg methylmercury per kg of fish or shellfish tissue. It replaces older recommended human health criteria for total mercury in surface waters. The promulgated California Toxics Rule criteria for human health protection from mercury in sources of drinking water (0.050 ug/L) and in waters that are not sources of drinking water (0.051 ug/L) are unchanged, and still enforceable.

"[US]EPA concluded that it is more appropriate at this time to derive a fish tissue (including shellfish) residue water quality criterion for methylmercury rather than a water column-based water quality criterion . . . for many reasons. Such a criterion integrates spatial and temporal complexity that occurs in aquatic systems and that affects methylmercury bioaccumulation. A fish tissue residue water quality criterion is more closely tied to the Clean Water Act goal of protecting the public health because it is based directly on the dominant human exposure route for methylmercury. The concentration of methylmercury is also generally easier to quantify in fish tissue than in water and is less variable over the time periods in which water quality standards are typically implemented in water quality-based. Thus, the data used in permitting activities can be based on a more consistent and measurable endpoint. A fish tissue residue criterion is also consistent with how fish advisories are issued. Fish advisories for mercury are based on the amount of methylmercury in fish tissue that is considered acceptable, although they are usually issued for a certain fish or shellfish species in terms of a meal size. A fish tissue residue water quality criterion should enhance harmonization between these two approaches for protecting the public health."

USEPA is developing guidance for using the new methylmercury criterion, including procedures for translating methylmercury concentrations in fish to total mercury concentrations in ambient surface water or effluent.

#### Updating Water Quality Goals

Please make the following changes to your hard copy of *A Compilation of Water Quality Goals*, August 2000 edition, to reflect the above changes, changes discussed in my memoranda dated 11 October 2000 and 5 December 2000, and to correct a few errors and omissions:

#### **Inorganics** Page 1

Arsenic: Change USEPA Primary MCL to 10 ug/L and delete footnotes. Delete footnote for USEPA MCL Goal.

Boron: Add footnote (160) for California State Action Level - Toxicity.

#### **Inorganics** Page 2

Chlorine dioxide: Add entry of "210" for USEPA IRIS Reference Dose.

Chlorite: Change entry to "210" for USEPA IRIS Reference Dose.

Chromium (III): Add entry of "10,500" for USEPA IRIS Reference Dose. Delete entry, but keep footnote, for Cancer Risk Estimates – USEPA IRIS.

#### **Inorganics** Page 3

*Mercury, inorganic:* Delete entries in the first and second columns under Non-Cancer Health Effects.

## **Inorganics** Page 7

Radioactivity, Gross Alpha: Change footnote to (110) for USEPA MCL Goal.

Radioactivity, Gross Beta: Delete footnote for USEPA MCL Goal.

Radium-226 + Radium-228. Delete footnote for USEPA MCL Goal.

Uranium: Change USEPA Primary MCL to 30 ug/L and change footnote to (159). Delete footnote for USEPA MCL Goal.

Vanadium: Add entry of "15" for California State Action Level - Toxicity.

## **Organics** Page 13

Add new lines for *sec-Butylbenzene* and *tert-Butylbenzene*: Add entries of "260" for both chemicals under California State Action Level – Toxicity.

Carbofuran: Delete footnote for California Public Health Goal.

Carbon tetrachloride: Delete footnote for California Public Health Goal.

#### **Organics** Page 14

Chloral hydrate: Add the entry of "70" for USEPA IRIS Reference Dose.

## **Organics Page 25**

Dichloromethane: Change entry to "4" and delete footnote for California Public Health Goal.

## **Organics** Page 37

Diquat: Delete footnote for California Public Health Goal.

#### **Organics** Page 49

Add new line for *Isopropylbenzene*: Add entry of "260" for California State Action Level – Toxicity.

#### **Organics** Page 55

- Add new line for *N-Methyldithiocarbamate (Metam)*: Add entry of "20" for California State Action Level Toxicity.
- Add new line for *Methylisothiocyanate (MITC)*: Add entry of "50" for California State Action Level Toxicity.

### Organics Page 57

Methyl mercury: Add the entry of "0.3 mg/kg (161)" in the first and second columns under Non-Cancer Health Effects.

### **Organics** Page 73

- Add new line for *n-Propylbenzene*: Add entry of "260" for California State Action Level Toxicity.
- Add new line for 2,3,5,6-Tetrachloroterephthalate: Add entry of "3500" for California State Action Level Toxicity.

## **Organics Page 79**

Thiobencarb: Change footnote to (158) for California Public Health Goal.

## **Organics** Page 85

Vinyl chloride: Change entry to "0.05" and delete footnote for California Public Health Goal.

#### **Organics** Page 86

Vinyl chloride: Change entry to "0.048 / 0.024" for Cancer Risk Estimates - USEPA IRIS.

## Footnotes Page 2

Add footnote (158): This limit covers the parent compound (thiobencarb), its chlorobenzyl and chlorophenyl moiety-containing degradation products and oxidation products such as thiobencarb sulfoxide, thiobencarb sulfone, and 4-chlorobenzosulfonic acid.

Add footnote (159): Effective 8 December 2003 for all community water systems.

Add footnote (160): Value rounded from 0.6 mg/L.

Add footnote (161): Concentration in fish or shellfish tissue.

Please contact me by phone at (916) 255-3123 or CalNet 8-494-3123 or by e-mail at marshaj@rb5s.swrcb.ca.gov if you have questions.

cc: Frances McChesney, Office of the Chief Counsel, SWRCB Tim Regan, Office of the Chief Counsel, SWRCB

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# **California Regional Water Quality Control Board**

Winston H. Hickox Secretary for Environmental Protection

TO:

**Central Valley Region** Robert Schneider, Chair

Sacramento Main Office Internet Address: http://www.swrcb.ca.gov/rwqcb5

3443 Routier Road, Suite A, Sacramento, California 95827-3003 Phone (916) 255-3000 • FAX (916) 255-3015

Technical Staff and Other Interested Persons FROM:

Jon B. Marshack, D.Env. Senior Environmental Specialist Environmental/Technical Support

**Grav Davis** 

Governor

DATE: 18 April 2001 SIGNATURE:

# SUBJECT: WATER QUALITY GOALS UPDATE

This is the fourth notice of changes since the publication of the August 2000 edition of A Compilation of Water Quality Goals. This notice contains an explanation of the most recent changes as well as instructions for updating your copy of Water Quality Goals. The Water Quality Goals report and all updates may be obtained on the internet at www.swrcb.ca.gov/rwqcb5/wq goals/.

## **Revised Aquatic Life Criteria for Cadmium**

In early April, the U.S. Environmental Protection Agency (USEPA) released a new document entitled, 2001 Update of Ambient Water Quality Criteria for Cadmium. The document and a related fact sheet may be obtained on the internet at the following address:

http://www.epa.gov/waterscience/criteria/aqualife/cadmium/ The document contains new national recommended criteria to protect freshwater and saltwater aquatic life and their uses. The new criteria, especially for freshwater, are significantly more stringent than previous national criteria from USEPA. Freshwater criteria vary with hardness as shown on the attached table labeled "Inorganics Page 15b". Saltwater criteria include a 4-day average of 8.8 ug/L and a 24hour average of 40 ug/L, both expressed as dissolved metal. Note that the Criteria Maximum Concentrations for both saltwater and freshwater use a 24-hour averaging period instead of 1-hour.

National recommended water quality criteria are intended to provide states and tribes with information to help them develop water quality standards pursuant to the federal Clean Water Act. These criteria are not directly enforceable criteria, such as those in the National Toxics Rule and the California Toxics Rule. As such, they cannot currently be applicable to California surface waters. They may be used by the State and Regional Water Boards to develop future water quality objectives.

## **Public Health Goal for Aluminum**

In early April, the California Office of Environmental Health Hazard Assessment (OEHHA) released a Public Health Goal (PHG) of 0.6 mg/L or 600 ug/L for aluminum in drinking water. PHGs are levels of drinking water contaminants at which adverse health effects are not expected to occur from a lifetime of

California Environmental Protection Agency

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exposure. The California Safe Drinking Water Act of 1996 (Health and Safety Code Section 116365) requires OEHHA to adopt PHGs based exclusively on public health considerations. PHGs adopted by OEHHA will be considered by the California Department of Health Services in establishing or revising primary drinking water standards (California Maximum Contaminant Levels, or MCLs). Technical support documents for PHGs are available on the internet at the following address: http://www.oehha.org/water/phg/

PHGs and other toxicological criteria may be used to evaluate compliance with narrative water quality objectives for Toxicity in the Basin Plans, as these objectives relate to beneficial uses involving human exposures (e.g., municipal and domestic supply or "MUN"). Therefore, ambient groundwater or surface water with chemical concentrations above PHGs could be interpreted as violating water quality objectives if the waters are designated MUN.

#### Proposed Repeal of New Arsenic MCL

USEPA has proposed to repeal their new drinking water standard for arsenic, adopted on 22 January 2001. USEPA's final determination will be reported to you in a future Water Quality Goals update. Please see the 8 February 2001 Water Quality Goals Update for more information on water quality numerical limits for arsenic.

#### **Proposition 65 Listings**

The California initiative statute Proposition 65, the Safe Drinking Water and Toxic Enforcement Act of 1986, makes it illegal to discharge a significant amount of a chemical known to the State to cause cancer or reproductive toxicity to a source of drinking water. It also makes it illegal to expose persons to a significant amount of any of these chemicals without prior notification. In December 2000, bromoethane (ethyl bromide) was added to the list of chemicals known to the State to cause cancer. In February, the pesticide propachlor was also added to this list. Proposition 65 information may be found on the internet at the following address:

http://www.oehha.org/prop65.html

In February, OEHHA published a Prop. 65 Status Report, that provides updated information on safe harbor levels -- No Significant Risk Levels for carcinogens and Maximum Allowable Daily Levels for reproductive toxins.

## Updating Your Copy of Water Quality Goals

Please make the following changes to your hard copy of *A Compilation of Water Quality Goals*, August 2000 edition, to reflect the above changes:

#### Inorganics Page 1

Aluminum: Change the California Public Health Goal to read, "600" and delete the footnote.

#### **Inorganics** Page 3

Cadmium: Change the USEPA National Recommended Ambient Water Quality Criteria for Freshwater Aquatic life, 4-day Average and 24-hour Average to read, "see page 15b (1)", and delete the 1-hour Average entry.

#### **Inorganics** Page 4

Cadmium: Change the California Toxics Rule Criteria for Inland Surface Waters for Freshwater Aquatic Life Protection, Continuous Concentration (4-day Average) and Maximum Concentration (1-hour Average) to read, "see page 15a (1, 142)".

### **Inorganics Page 5**

Cadmium: Change the USEPA National Recommended Ambient Water Quality Criteria for Saltwater Aquatic Life Protection, 4-day Average to read, "8.8 (1)" and 24-hour Average to read, "40 (1)", and delete the 1-hour Average entry.

#### **Inorganics** Page 15

Replace this page with Page 15a and Page 15b, attached.

#### **Organics** Page 20

Chlorothalonil: Change the Proposition 65 entry to read "100 #" and delete the footnote.

Daminozide: Change the Proposition 65 entry to read "20 #" and delete the footnote.

#### **Organics** Page 38

Ethyl bromide: Place a pound sign (#) in the Proposition 65 column.

Ethylene thiourea (ETU): Change the Proposition 65 entry to read "10 / 15 #R".

#### **Organics** Page 56

Methyl mercury: Change the Proposition 65 entry to read "#R" and delete the footnotes.

#### **Organics** Page 68

*Polychlorinated biphenyls:* Change the Proposition 65 entry to read "0.045 #R" and delete the footnotes.

*Propachlor:* Place a pound sign (#) in the Proposition 65 column.

Please contact me by phone at (916) 255-3123 or CalNet 8-494-3123 or by e-mail at marshaj@rb5s.swrcb.ca.gov if you have questions.

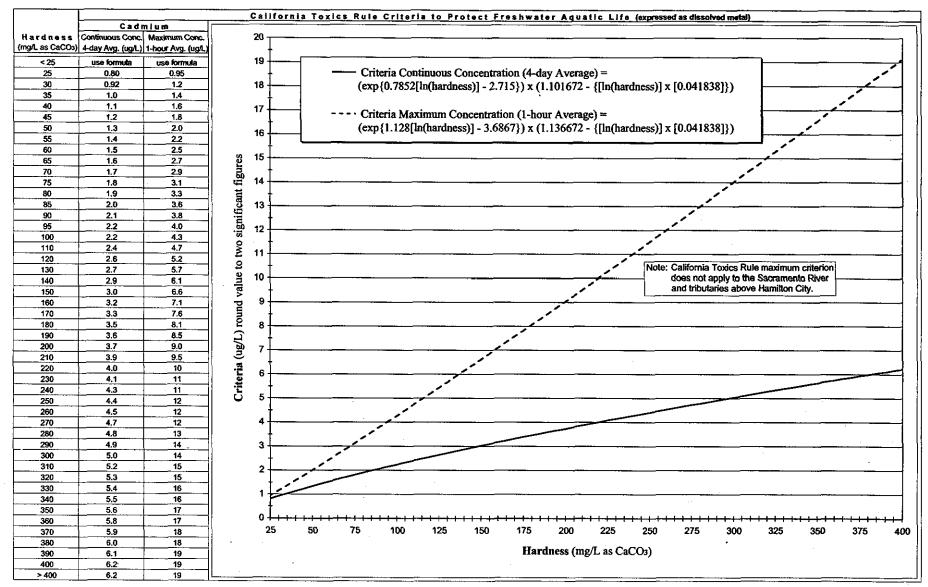
#### Attachments (2)

cc: Frances McChesney, Office of the Chief Counsel, SWRCB Tim Regan, Office of the Chief Counsel, SWRCB

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## WATER QUALITY GOALS FOR INORGANIC CONSTITUENTS FRESHWATER AQUATIC LIFE - CADMIUM



Water Quality Goals - April 2001

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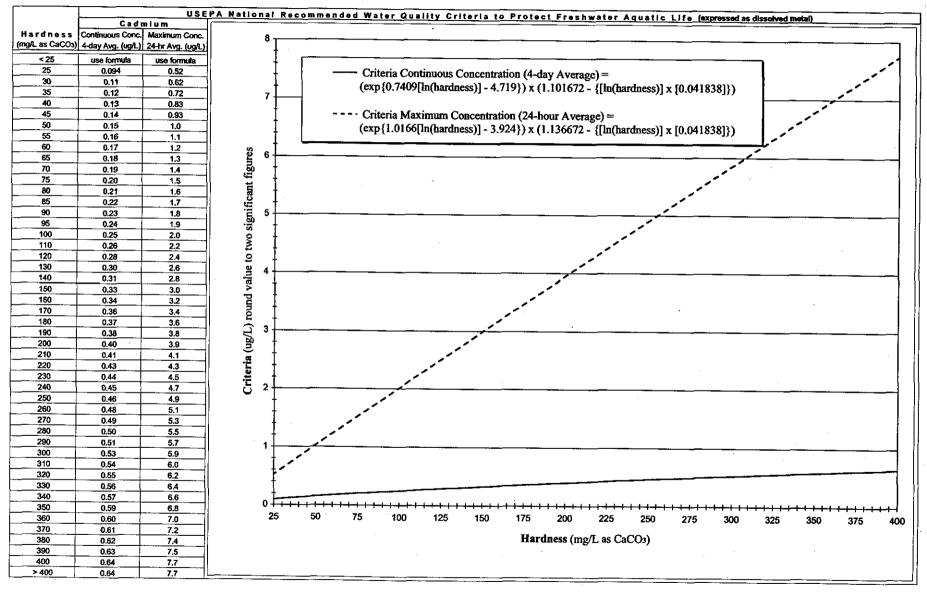
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From Reference 17.

Inorganics Page 15a

# WATER QUALITY GOALS FOR INORGANIC CONSTITUENTS FRESHWATER AQUATIC LIFE - CADMIUM



Water Quality Goals - April 2001

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From Reference 24.

Inorganics Page 15b



# **California Regional Water Quality Control Board**

Central Valley Region

Governor

Robert Schneider, Chair

Sacramento Main Office Internet Address: http://www.swrcb.ca.gov/rwqcb5 3443 Routier Road, Suite A, Sacramento, California 95827-3003 Phone (916) 255-3000 • FAX (916) 255-3015

TO: Technical Staff and Other Interested Persons FROM:

Jon B. Marshack, D.Env. Senior Environmental Specialist Environmental/Technical Support

**DATE:** 18 April 2001

SIGNATURE:

# SUBJECT: WATER QUALITY GOALS UPDATE

This is the fourth notice of changes since the publication of the August 2000 edition of *A Compilation of Water Quality Goals*. This notice contains an explanation of the most recent changes as well as instructions for updating your copy of *Water Quality Goals*. The *Water Quality Goals* report and all updates may be obtained on the internet at www.swrcb.ca.gov/rwqcb5/wq\_goals/.

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National recommended water quality criteria are intended to provide states and tribes with information to help them develop water quality standards pursuant to the federal Clean Water Act. These criteria are not directly enforceable criteria, such as those in the National Toxics Rule and the California Toxics Rule. As such, they cannot currently be applicable to California surface waters. They may be used by the State and Regional Water Boards to develop future water quality objectives.

# **Public Health Goal for Aluminum**

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# California Environmental Protection Agency

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exposure. The California Safe Drinking Water Act of 1996 (Health and Safety Code Section 116365) requires OEHHA to adopt PHGs based exclusively on public health considerations. PHGs adopted by OEHHA will be considered by the California Department of Health Services in establishing or revising primary drinking water standards (California Maximum Contaminant Levels, or MCLs). Technical support documents for PHGs are available on the internet at the following address: http://www.oehha.org/water/phg/

PHGs and other toxicological criteria may be used to evaluate compliance with narrative water quality objectives for Toxicity in the Basin Plans, as these objectives relate to beneficial uses involving human exposures (e.g., municipal and domestic supply or "MUN"). Therefore, ambient groundwater or surface water with chemical concentrations above PHGs could be interpreted as violating water quality objectives if the waters are designated MUN.

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*Polychlorinated biphenyls:* Change the Proposition 65 entry to read "0.045 #R" and delete the footnotes.

*Propachlor:* Place a pound sign (#) in the Proposition 65 column.

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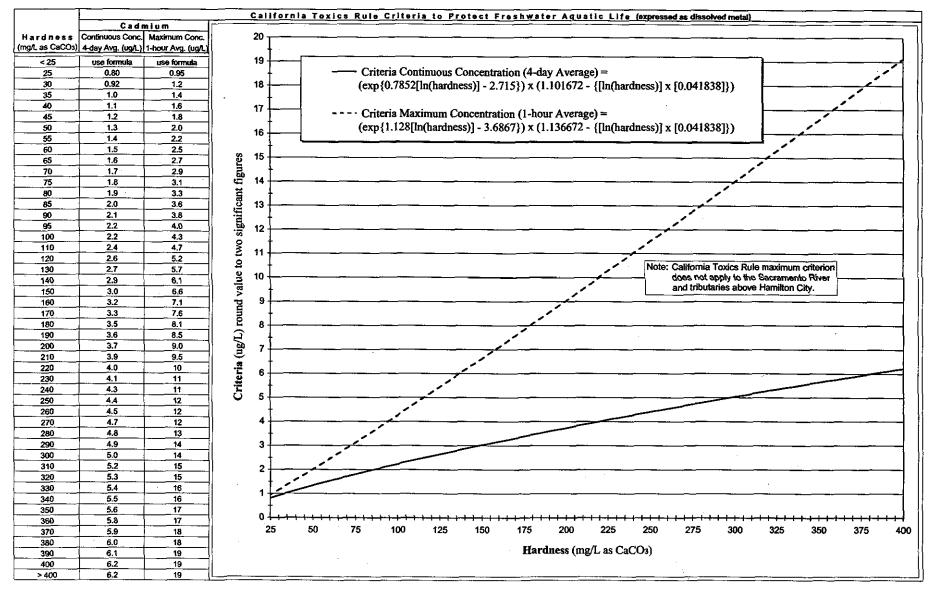
#### Attachments (2)

cc: Frances McChesney, Office of the Chief Counsel, SWRCB Tim Regan, Office of the Chief Counsel, SWRCB

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## WATER QUALITY GOALS FOR INORGANIC CONSTITUENTS FRESHWATER AQUATIC LIFE - CADMIUM



Water Quality Goals - April 2001

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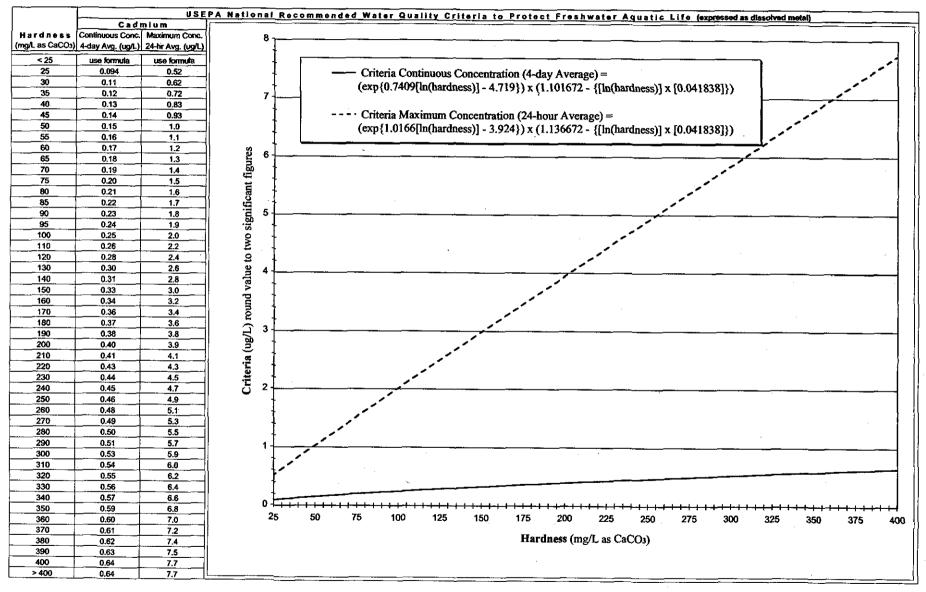
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Inorganics Page 15a

# WATER QUALITY GOALS FOR INORGANIC CONSTITUENTS FRESHWATER AQUATIC LIFE - CADMIUM



Water Quality Goals - April 2001

From Reference 24.

Inorganics Page 15b

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# Winston H. Hickox Secretary for Environmental Protection

TO:

# **California Regional Water Quality Control Board**

Governor

Central Valley Region Robert Schneider, Chair

Sacramento Main Office Internet Address: http://www.swrcb.ca.gov/rwqcb5 3443 Routier Road, Suite A, Sacramento, California 95827-3003 Phone (916) 255-3000 • FAX (916) 255-3015

Technical Staff and Other Interested Persons FROM:

Jon B. Marshack, D.Env. Senior Environmental Specialist Environmental/Technical Support

**DATE:** 26 July 2001

SIGNATURE:

B. May

# SUBJECT: WATER QUALITY GOALS UPDATE

This is the fifth notice of changes since the publication of the August 2000 edition of *A Compilation of Water Quality Goals*. This notice contains an explanation of the most recent changes as well as instructions for updating your copy of *Water Quality Goals*. The *Water Quality Goals* report and all updates may be obtained on the internet at www.swrcb.ca.gov/rwqcb5/wq\_goals.

## Public Health Goal for Benzene

In late June, the California Office of Environmental Health Hazard Assessment (OEHHA) released a Public Health Goal (PHG) of 0.15 ug/L for benzene in drinking water. PHGs are levels of drinking water contaminants at which adverse health effects are not expected to occur from a lifetime of exposure. The California Safe Drinking Water Act of 1996 (Health and Safety Code Section 116365) requires OEHHA to adopt PHGs based exclusively on public health considerations. PHGs adopted by OEHHA will be considered by the California Department of Health Services (DHS) in establishing or revising primary drinking water standards (California Maximum Contaminant Levels, or MCLs). DHS is required by the same law to review their MCLs every five years and to revise them to as close to PHGs as is practicable, considering economic factors and technical feasibility. Technical support documents for PHGs are available on the internet at www.oehha.org/water/phg.

The benzene PHG is based on the risk of getting cancer, in this case leukemia, from exposure to benzene through the municipal and domestic water supplies. Benzene is one of a very few chemicals considered to be *known human carcinogens*. For these chemicals, cancer cases in humans have been documented as being directly related to chemical exposure. This is the strongest type of evidence for the relationship between cause and effect. Other *known human carcinogens* include arsenic, vinyl chloride, and ionizing radiation.

PHGs for carcinogens are set at the concentration in water associated with a *de minimis* level of cancer risk – one extra cancer case per million persons exposed over their lifetimes. For volatile contaminants, such as benzene, the use of drinking water in the home can cause exposure through not only the ingestion of water, but also through dermal contact and the inhalation of vapors resulting from

California Environmental Protection Agency

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showering and other household water uses. Therefore, PHGs for benzene and other volatile chemicals are calculated by considering all of these exposures. For this reason these PHGs are often lower than other cancer risk estimates that consider only ingestion exposure. These additional exposure routes are relevant to the beneficial use of water for municipal and domestic supply (MUN).

PHGs and other toxicological criteria may be used to evaluate compliance with narrative water quality objectives for Toxicity in the Basin Plans, as these objectives relate to beneficial uses involving human exposures (e.g., municipal and domestic supply). Therefore, ambient groundwater or surface water with chemical concentrations above PHGs could be interpreted as violating water quality objectives if the waters are designated MUN.

#### **Action Levels for Trimethylbenzenes**

Also in June 2001, DHS published drinking water action levels of 330 ug/L for both 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene, also called pseudocumene and mesitylene, respectively. These chemicals are constituents of petroleum based fuels. They are also used in the manufacture of dyes and pharmaceuticals. 1,3,5-Trimethylbenzene is used as an ultraviolet oxidation stabilizer in plastics.

Action levels are health-based advisory levels for chemicals that do not currently have primary MCLs. An action level may be established by DHS when a chemical is either found in a drinking water source or is in close proximity to a source and guidance is needed should it reach the source. Like PHGs, drinking water action levels may also be used to evaluate compliance with narrative water quality objectives for Toxicity. Additional information on action levels may be found on the internet at www.dhs.ca.gov/ps/ddwem/chemicals/AL/actionlevels.htm.

#### **Reference Doses for Bromate and Hexachlorocyclopentadiene**

In early June, the U.S. Environmental Protection Agency (USEPA) added a reference dose for bromate  $(BrO_3^-)$  equal to 28 ug/L in drinking water to their Integrated Risk Information System (IRIS) database of chemicals health effects. Reference doses represent exposure limits below which non-cancer health effects are not expected to occur. Reference doses may be translated into concentrations in drinking water using standard assumptions for the amount of water ingested each day, average body weight and potential exposures to the chemicals from other sources. Bromate is also considered to be a probable human carcinogen, with a one-in-a-million incremental cancer risk estimate of 0.05 ug/L, also reported in IRIS.

USEPA also updated their reference dose for hexachlorocyclopentadiene. The new criterion is equal to 42 ug/L in drinking water. Hexachlorocyclopentadiene is used in the manufacture of flame retardant chemicals and pesticides.

IRIS may be found on the internet at www.epa.gov/iris.

#### **Drinking Water Standard for Arsenic**

The current drinking water MCL for arsenic of 50 ug/L was developed in the 1940s. It does not reflect current health effects information. USEPA's IRIS toxicologic database contains a reference dose for non-cancer health effects equal to 2.1 ug/L of arsenic in drinking water and a one-in-a-million incremental cancer risk estimate of 0.02 ug/L. OEHHA has published a cancer potency factor equal to 0.023 ug/L at the one-in-a-million risk level, and is expected to publish a draft Public Health Goal for arsenic in the near future. Arsenic is considered to be a "known human carcinogen" (see the discussion

of this term under *Public Health Goal for Benzene*, above). The epidemiologic data on which the cancer risk estimates are based directly link human exposure to arsenic in drinking water with cases of cancer.

In additional to man-made sources (e.g., arsenical pesticides, wood treatment chemicals, metal smelting) arsenic is a naturally occurring element. It is present in many source waters, especially in the western United States, in concentrations that are often equal to or higher than health-protective levels. For some drinking water supply systems, there would be significant costs if they were required to deliver water to customers below the current MCL.

On 22 January 2001, USEPA adopted a new federal MCL for arsenic of 10 ug/L. On 22 May, USEPA revised the new standard by delaying its effective date until 22 February 2002 in order to conduct reviews of the scientific and economic analyses on which the new MCL was based. On 19 July, USEPA proposed a range of MCL options for arsenic -3 ug/L, 5 ug/L, 10 ug/L, and 20 ug/L - and requested additional comment on the technical basis for the original 22 January rule. Comments are due by 31 October. More information on the federal arsenic MCL may be found on the internet at www.epa.gov/OGWDW/arsenic.html.

Allowable levels of arsenic in surface water and groundwater are governed by water quality objectives and natural background concentrations. For waters with the beneficial use of municipal and domestic supply (MUN), applicable water quality objectives include both the Chemical Constituents objective and the Toxicity objective. The Chemical Constituents objective requires that water not exceed California MCLs. The Toxicity objective prohibits toxic substances in toxic amounts. Where natural background levels exceed water quality objectives, the Regional Water Boards do not have the authority to require that water quality objectives be met. However, in such cases, controllable water quality factors, such as the discharge of waste, are not permitted to cause natural concentrations to increase.

#### Total vs. Dissolved

Recently, questions have arisen as to how to measure compliance with USEPA national recommended water quality criteria and USEPA promulgated (California Toxics Rule and National Toxics Rule) criteria for aquatic life protection and human health protection. For metallic constituents, the aquatic life criteria specify whether compliance is to be determined based on dissolved or total recoverable measurements. Human health criteria for metallic constituents and both human health and aquatic life criteria for non-metallic constituents do not specify. According to Phil Woods, Water Quality Standards Coordinator for Region 9 of USEPA, compliance with all criteria which do not specify dissolved or total recoverable are intended to be determined using total recoverable measurements. In *Water Quality Goals*, dissolved criteria for metallic constituents are footnoted (1) and total recoverable criteria are footnoted (2). For other constituents, use total recoverable concentrations.

#### Updating Your Copy of Water Quality Goals

Please make the following changes to your copy of *A Compilation of Water Quality Goals*, August 2000 edition, to reflect the new information discussed above:

#### Inorganics Page 2

Bromate: Add an entry of "28" under USEPA Integrated Risk Information System Reference Dose.

#### **Organics** Page 7

Benzene: Change the California Public Health Goal entry to read "0.15" and delete the footnote.

#### Organics Page 44

*Hexachlorocyclopentadiene:* Change the USEPA Integrated Risk Information System Reference Dose entry to read "42" and delete the footnote. Change the One-in-a-Million Cancer Risk Estimate – USEPA Integrated Risk Information System entry to read "E" and delete the footnote.

#### **Organics Page 79**

1,3,5-Trimethylbenzene: Add an entry of "330" under California State Action Level - Toxicity.

1,2,4-Trmethylbenzene: Add a new listing for this chemical and add an entry of "330" under California State Action Level - Toxicity.

Please contact me by phone at (916) 255-3123 or CalNet 8-494-3123 or by e-mail at marshaj@rb5s.swrcb.ca.gov if you have questions.

cc: Frances McChesney, Office of the Chief Counsel, SWRCB Catherine George, Office of the Chief Counsel, SWRCB Erik Spiess, Office of the Chief Counsel, SWRCB

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# 10580



# **California Regional Water Quality Control Board**

**Central Valley Region** 

**Robert Schneider, Chair** 

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TO: Technical Staff and Other Interested Persons FROM:

Jon B. Marshack, D.Env. Staff Environmental Scientist Program Support Unit Governor

DATE: 20 November 2001

SIGNATURE:

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# SUBJECT: WATER QUALITY GOALS UPDATE

This is the sixth notice of changes since the publication of the August 2000 edition of *A Compilation of Water Quality Goals*. This notice contains an explanation of the most recent changes as well as instructions for updating your copy of *Water Quality Goals*. In addition, new information is provided to help users select among available numerical limits to interpret narrative water quality objectives. The *Water Quality Goals* report and all updates may be obtained on the internet at www.swrcb.ca.gov/rwqcb5/available\_documents/wq\_goals.

## New Public Health Goals

In August and September, the California Office of Environmental Health Hazard Assessment (OEHHA) released four new Public Health Goals (PHGs) for chemicals in drinking water:

Nickel	12 ug/L (ppb)
Simazine	4 ug/L
Tetrachloroethylene (PCE)	0.06 ug/L
Uranium (from natural sources)	0.5 ug/L (0.43 pCi/L)

PHGs are levels of drinking water contaminants at which adverse health effects are not expected to occur from lifetime of exposure. The California Safe Drinking Water Act of 1996 (Health and Safety Code Section 116365) requires OEHHA to adopt PHGs based exclusively on public health considerations. PHGs adopted by OEHHA will be considered by the California Department of Health Services (DHS) in establishing or revising primary drinking water standards (California Maximum Contaminant Levels, or MCLs). DHS is required by the same law to review their MCLs every five years and to revise them to as close to PHGs as is practicable, considering economic factors and technical feasibility. Technical support documents for PHGs are available on the internet at www.oehha.org/water/phg.

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The PHGs for tetrachloroethylene and uranium are based on cancer risk. PHGs for carcinogens are set at the concentration in water associated with a *de minimis* or negligible level of cancer risk – one extra cancer case per million persons exposed over their lifetimes. For volatile contaminants, such as PCE, the use of drinking water in the home can cause exposure through not only the ingestion of water, but also through dermal contact and the inhalation of vapors resulting from showering and other household water uses. Therefore, PHGs for PCE and other volatile chemicals are calculated by considering all of these exposures. For this reason these PHGs are often lower than other one-in-a-million cancer risk estimates that consider only ingestion exposure. These additional exposure routes are relevant to the beneficial use of water for municipal and domestic supply (MUN).

PHGs and other toxicological criteria may be used to evaluate compliance with narrative water quality objectives for Toxicity in the Basin Plans, as these objectives relate to beneficial uses involving human exposures (e.g., municipal and domestic supply). Therefore, ambient groundwater or surface water with chemical concentrations above PHGs could be interpreted as violating water quality objectives if the waters are designated MUN.

#### Public Health Goals for Total and Hexavalent Chromium - An Update

In 1999, OEHHA published a Public Health Goal of 2.5 ug/L (ppb) for total chromium in drinking water. This PHG was based on the assumption that exposure to hexavalent chromium (Cr VI) in drinking water may cause cancer. The PHG technical support document included a health protective level of 0.2 ug/L for Cr VI, equal to the one-in-a-million cancer risk estimate in drinking water. The PHG for total chromium is based on the health protective level for Cr VI, assuming that total chromium contains no more than 7.2 percent Cr VI. Both the PHG for total chromium and the health protective level for Cr VI are reported in the August 2000 Edition of *A Compilation of Water Quality Goals*.

On 9 November 2001, OEHHA formally withdrew the PHG document for chromium. The PHG for total chromium and the cancer risk-based health protective level for Cr VI have been controversial. Recent data on drinking water sources collected by DHS and others have called into question the proportion of Cr VI in total chromium in California drinking water sources assumed by OEHHA. Many toxicologists, including those from the drinking water program of USEPA, disagree with OEHHA's assumption that Cr VI may cause cancer from drinking water exposure. As a result, OEHHA requested that the University of California (UC) convene a scientific panel of experts to provide guidance on health issues relating to the presence of Cr VI in drinking water. The Chromate Toxicity Review Committee, as the panel was called, has completed its review and has forwarded its report to OEHHA. The concluded that "we found no basis in either the epidemiological or animal data published in the literature for concluding that orally ingested Cr (VI) is a carcinogen."

OEHHA had asked the committee to examine the reliability of a key German study used by OEHHA to identify the health protective level for Cr VI and the PHG for total chromium. The study, published in 1968, is the only one of its kind that has examined long-term cancer risks from ingestion of Cr VI. Previous UC peer reviews of the PHG document had deemed the German study data as appropriate for deriving the PHG for total chromium. However, OEHHA was aware of the study's limitations and for that reason had asked the committee to examine it. The committee's report states that the study should not be used to assess cancer risks from Cr VI for several reasons. OEHHA no longer plans to use the study in future risk assessments on Cr VI because the committee presented information that a virus contracted by mice used in the study could have caused lesions observed by the German researchers and interpreted as chromium-induced tumors.

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The committee proposes that California should continue to consider its current drinking water standard (maximum contaminant level) of 50 ug/L for total chromium to be protective of public health.<sup>1</sup> OEHHA is in the process of developing a separate PHG for Cr VI, which is expected to be complete by the Spring of 2003. That PHG will be used by DHS to develop a California drinking water standard for Cr VI. Legislation recently signed into law requires DHS to adopt a Primary MCL for Cr VI by 1 January 2004.

## Arsenic – New Federal MCL and Information on Health Effects

On 31October 2001, USEPA adopted a new final drinking water MCL for arsenic of 10 ug/L The former MCL for arsenic of 50 ug/L (ppb) was developed by the US Public Health Service in 1942. It did not reflect current information on the health effects of arsenic, including bladder, lung and skin cancer, inhibition of tissue respiration, skin and mucus membrane irritation and necrosis, central and peripheral neurotoxicity, peripheral vascular disease, and reproductive and developmental toxicity. In January 2001, USEPA adopted the new federal MCL for arsenic of 10 ug/L. But in May, USEPA delayed the effective date of the new standard in order to conduct reviews of the scientific and economic analyses on which the new MCL was based.

In September 2001, a subcommittee of the National Research Council (NRC) released their review of the toxicologic basis for the new drinking water standard. The NRC report confirmed the finding that recent studies of arsenic in humans, taken together with earlier studies, "provide a sound and sufficient database showing an association between bladder and lung cancers and chronic arsenic exposure in drinking water, and they provide a basis for quantitative risk assessment." "In addition, recent studies increase the weight of evidence for an association between internal cancers and arsenic exposure through drinking water." "Taiwanese and other human studies include data on exposures at arsenic concentrations relatively close to some U.S. exposures. Consequently, the extrapolation is over only a relatively small range of arsenic concentrations." Shorter extrapolations decrease the uncertainty of numerical cancer risk estimates. The report also cited increasing evidence that chronic exposure to arsenic in drinking water may also be associated with health effects other than cancer.

"In summary, the subcommittee concludes that recent studies and analyses enhance the confidence in risk estimates that suggest chronic arsenic exposure is associated with an increased incidence of bladder and lung cancer at arsenic concentrations in drinking water that are below the current MCL of 50 ug/L. The results of this subcommittee's assessment ... suggest that the risks for bladder and lung cancer incidence are greater than the risk estimates on which EPA based its January 2001 pending rule." The subcommittee found that men and women who daily consume water containing 3 ug/L of arsenic have about a 1 in 1,000 increased risk of developing bladder or lung cancer during their lifetime. At 10 ug/L, the new drinking water standard adopted by USEPA, the risk is greater than 3 in 1,000. Additional information on the federal arsenic drinking water standard may be found on the internet at http://www.epa.gov/safewater/arsenic.html. The NRC report may be viewed on the internet at http://www.nap.edu/catalog/10194.html.

California legislation recently signed into law requires OEHHA to adopt a Public Health Goal for arsenic in drinking water by the end of 2002 and requires DHS to adopt a revised Primary MCL for arsenic no later than 30 June 2004. OEHHA is already in the process of preparing the draft PHG, which will consider the same epidemiologic studies cited in the NRC report. The high cancer potency from

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<sup>&</sup>lt;sup>1</sup> The USEPA Integrated Risk Information System (IRIS) database contains a reference dose for non-cancer health effects from Cr VI, which is equivalent to 21 ug/L in drinking water.

these studies "yields a 1-in-a-million risk level in the low part per trillion range," according to Dr. Robert Howd, Chief of the Water Toxicology Unit of OEHHA. "Protection against all other effects (particularly stroke, heart disease, and hypertension), including an adequate margin of safety, requires a level in the low part per billion range. It should be noted that the arsenic level which would be protective against cancer is far below the limit of detection, which is about three parts per billion." The new PHG and the new drinking water standard adopted by USEPA will be factored into the development of the revised California drinking water standard by DHS.

### **Cancer Risk Level for Quinoline**

In September, USEPA published new toxicologic criteria for the chemical quinoline in the Integrated Risk Information System (IRIS) database. The one-in-a-million incremental cancer risk level for quinoline in drinking water is 0.01 ug/L. Quinoline is a derivative of coal tar that is used in medicine and chemical manufacture. IRIS may be viewed on the internet at www.epa.gov/iris/.

#### **Cancer Risk Level for Chloroform**

In October, USEPA published new toxicologic information on chloroform in IRIS. Chloroform is one of the trihalomethanes formed when raw water containing organic matter is chlorinated to remove pathogens. USEPA has deleted the one-in-a-million incremental cancer risk level for chloroform from IRIS, based on new information regarding the mode of action for cancer from chloroform exposure. USEPA now considers the reference dose (RfD) for noncancer health effects from chloroform of 70 ug/L to be adequately protective of public health for cancer effects by the oral route because the mode of action for both cancer and noncancer health effects appears to be cytotoxicity — general toxicity to cells. This causes the dose-response relationship for cancer to have a threshold, below which cancer is not expected to occur. The RfD appears to be significantly below this cancer risk threshold.

#### New and Revised Drinking Water Action Levels

In August, DHS published a new toxicity-based Action Level for the solvent carbon disulfide of 160 ug/L. At the same time, the Action Level for vanadium was revised to 50 ug/L to account for data suggesting that a greater proportion of potential vanadium exposure for California residents comes from drinking water, as compared with other sources such as food. Action Levels are health-based advisory levels for chemicals that do not yet have primary Maximum Contaminant Levels (MCLs). More information on Action Levels may be found on DHS' web site at www.dhs.ca.gov/ps/ddwem/chemicals/AL/actionlevels.htm.

IRIS criteria, Action Levels and other toxicologic limits may be used to evaluate compliance with narrative water quality objectives for Toxicity in the Basin Plans, as these objectives relate to beneficial uses involving human exposures (e.g., municipal and domestic supply or "MUN"). Therefore, ambient groundwater or surface water with chemical concentrations above these criteria could be interpreted as violating water quality objectives if the waters are designated MUN.

#### **Selecting Among Available Numerical Limits**

The text Selecting Water Quality Goals at the beginning of the Water Quality Goals report provides information on how numerical limits may be used to implement narrative water quality objectives. However, it appears that many persons still have trouble selecting appropriate limits. The San Francisco Bay Regional Board has developed a manual of Risk Based Screening Levels for soil and water to guide

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the assessment of contaminated sites. That manual uses default rules or algorithms for selecting among numerical limits. Such algorithms may also help users of the *Water Quality Goals* report. The following concepts should guide the derivation of such algorithms.

To be defensible, selected limits should be chosen so as to implement all applicable water quality objectives in the appropriate Basin Plan. For each constituent, the process involves three steps:

- 1) Select a single numerical limit to satisfy each water quality objective or portion thereof.
- 2) Select the lowest of the numerical limits from step (1).
- 3) Select the larger of
  - a) the numerical limit chosen in step (2) and
  - b) the natural background level of the constituent.<sup>2</sup>

These steps should provide a water quality numerical limit which if equaled or exceeded in ambient water, indicates that pollution has occurred. This is the least stringent limit below which ambient water would be in compliance with applicable water quality standards. It should be noted that antidegradation policies may require that more stringent limits be applied to ambient water quality, where the natural background level was not selected in step (3) above.

In step (1), with respect to toxicity information, there is a preference for:

- Purely risk-based limits over risk-management based limits, unless the water quality objective mandates the use of a risk-management based limit (e.g., the Chemical Constituent objectives mandates compliance with California Primary and Secondary MCLs);
- Limits developed and/or published by California agencies over those developed by federal agencies or other organizations (to be consistent with regulatory actions of our sister agencies);
- Limits that reflect peer reviewed science (avoid using draft or provisional limits, unless nothing else is available);
- Limits that reflect current science (e.g., IRIS numbers over USEPA health advisories).

Avoid using Proposition 65 limits. These limits are in conflict with other health-based limits in drinking water in California (i.e., PHGs and other health-based criteria from which MCLs are derived). The intent of Proposition 65 is to do two things:

- Provide warnings to persons prior to significant exposure to carcinogens and reproductive toxicants, and
- Prohibit significant discharges of these chemicals into sources of drinking water.

The intent of Proposition 65 is not to designate "safe" levels of these chemicals in drinking water. Other programs exist in California for that purpose, including the Public Health Goal program.

For the NPDES program and for other situations where it is not clear that background conditions represent true "natural background" (i.e., conditions have not been influenced by controllable water quality factors), the limit chosen in step (2) should be imposed even where background levels are less stringent. According to the SWRCB *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (SIP), the water quality objective becomes the effluent limit in such cases. In SIP Section 1.4, Calculation of Effluent Limitations, Step 2 (page 6), when the water quality criterion (C), is less than the background concentration (B), then the effluent limit (ECA) is set at the criterion (C), not at the background concentration (B).

The general guidance above may be used to generate algorithms to help in selecting the most appropriate water quality numerical limits. Because some limits for groundwater and surface water differ significantly, separate algorithms are presented below.

#### An Algorithm for Groundwater

For chemicals in groundwater, the following water quality objectives and applicable numerical limits normally apply:

- Chemical Constituents Objective (each of the following apply separately)
  - California Primary and Secondary MCLs (lowest of these)
  - > Numerical water quality objective from the Basin Plan
  - > Concentrations that indicate impairment of any beneficial use
    - Agricultural use protective limits

### Toxicity Objective

- > Purely human health-risk based limits, normally in the following hierarchy
  - OEHHA Public Health Goal
  - Cal/EPA cancer potency factor at the one-in-a-million risk level
  - California State Action Level based on toxicity
  - USEPA IRIS criteria, select the lowest of
    - one-in-a-million cancer risk estimate
    - reference dose
  - USEPA Health Advisory, select the lowest of
    - one-in-a-million cancer risk estimate
    - lifetime non-cancer limit
  - USEPA MCL Goals (non-zero values only)
  - Other health-risk based limits (check dates and basis before using these)
    - National Academy of Sciences criteria
      - one-in-a-million cancer risk estimate
      - drinking water health advisory
    - Proposition 65 levels

#### Tastes and Odors Objective

- > Taste- and odor-based limits, normally in the following hierarchy
  - California Secondary MCL
  - California State Action Level based on taste & odor

- Federal Secondary MCL
- USEPA National Ambient Water Quality Criterion based on taste & odor (do not use if limit is based on tainting of fish flesh)
- Other taste & odor thresholds from the peer reviewed literature

First, select one limit for each of the items above that begin with an arrow ( $\geq$ ). Second, take the lowest of those limits. The result should be a limit that applies all applicable water quality objectives. (Note: Natural background levels and antidegradation policies may modify this selection.) See also *A Note of Caution*, below.

#### An Algorithm for Inland and Estuarine Surface Waters

Different numerical limits apply to surface waters. Additional beneficial uses – for example, those that protect aquatic life – normally apply. There are additional constraints on surface water standards than on groundwater standards. The California Toxics Rule (CTR) and National Toxics Rule (NTR) contain promulgated and enforceable numerical limits for California inland and estuarine surface waters. CTR and NTR criteria preempt our interpretation of the narrative water quality objectives with respect to the toxicity of chemicals to humans and aquatic life. For example, if the CTR contains a human health protective criterion for the chemical of interest, it has precedence over the use of the Public Health Goal to interpret the narrative Toxicity objective with respect to human health protection. Likewise, if the CTR includes an aquatic life protective criterion, it supersedes any USEPA recommended aquatic life criteria for the same chemical, even if the latter are newer or more stringent numbers. The CTR/NTR constraint does not apply to groundwater. In addition, the CTR, NTR and USEPA Recommended Ambient Water Quality Criteria for human health protection should not be applied to groundwater, because they are derived assuming exposure through consumption of both water and fish/shellfish.

- California Toxics Rule and National Toxics Rule
  - Criteria for human health protection (use criteria for drinking water sources, consumption of water plus aquatic organisms, unless the MUN beneficial use has specifically been de-listed for the water body)
  - Criteria for aquatic life protection (use the criterion with the longest averaging period unless more frequent sampling justifies using criteria with shorter averaging periods)
- Chemical Constituents Objective (each of the following apply separately)
  - California Primary and Secondary MCLs (lowest of these)
  - Numerical water quality objective from the Basin Plan (may supercede CTR or NTR criteria if approved by USEPA)
  - Concentrations that indicate impairment of any designated beneficial use
    - Agricultural use protective limits

- Toxicity Objective
  - Purely human health-risk based limits, normally in the following hierarchy (applies only if there are no CTR or NTR criteria for human health protection)
    - OEHHA Public Health Goal
    - Cal/EPA cancer potency factor at the one-in-a-million risk level
    - California State Action Level based on toxicity
    - USEPA IRIS criteria, select the lowest of
      - one-in-a-million cancer risk estimate
      - reference dose
    - USEPA Health Advisory, select the lowest of
      - one-in-a-million cancer risk estimate
      - lifetime non-cancer limit
    - USEPA MCL Goals (non-zero values only)
    - Other health-risk based limits (check dates and basis before using these)
      - National Academy of Sciences criteria
        - one-in-a-million cancer risk estimate
        - drinking water health advisory
      - Proposition 65 levels
  - Aquatic life protective limits, normally in the following hierarchy (applies only if there are no CTR or NTR criteria for aquatic life protection)
    - California Department of Fish and Game criteria
       (use the criterion with the longest averaging period unless more frequent
       sampling justifies using criteria with shorter averaging periods)
    - USEPA Recommended Ambient Water Quality Criteria (use the criterion with the longest averaging period unless more frequent sampling justifies using criteria with shorter averaging periods)
- Tastes and Odors Objective
  - > Taste- and odor-based limits, normally in the following hierarchy
    - California Secondary MCL
    - California State Action Level based on taste & odor
    - Federal Secondary MCL
    - USEPA National Ambient Water Quality Criterion based on taste & odor
    - other taste & odor thresholds from the peer reviewed literature

First, select one limit for each of the items above that begin with an arrow ( $\geq$ ). Second, take the lowest of those limits. The result should be a limit that applies all applicable water quality objectives. (Note: Natural background levels and antidegradation policies may modify this selection.)

#### A Note of Caution

Automatically selecting numerical limits by algorithm will not always generate the most appropriate limit. If specific beneficial uses do not apply, then limits protective of those uses should not be considered. It may make sense to deviate from the hierarchies listed above in specific cases. We may have information that certain numerical limits are outdated or are in dispute (see the discussion of PHGs for chromium, above). For example, boron has a DHS Action Level of 1000 ug/L and a reference dose from IRIS equal to 630 ug/L in drinking water. Normally, we would prefer using a California number over one from USEPA. However, the Action Level list from DHS cites the reference dose from IRIS as its source of the toxicologic information. Included is a note that DHS simply "rounded off" the value from 0.6 to 1 mg/L. This manner of rounding appears to defy logic. Perhaps a risk-management decision prevented the Action Level from being set at the toxicity -based level. In any case, the IRIS reference dose is more precise. So, for boron I would recommend using the IRIS reference dose instead of the DHS Action Level to implement the narrative Toxicity objective. What this example shows is that, while an algorithm may be a good place to begin the selection process, other information may need to be brought to bear on the final selection of water quality numerical limits.

#### Disclaimer

The recommended procedures discussed herein are not, nor intended to be Board policy, but rather an explanation of the staff practice of interpreting and applying standards and criteria for use in the Board's programs for water quality protection.

#### Updating Your Copy of Water Quality Goals

Please make the following changes to your copy of *A Compilation of Water Quality Goals*, August 2000 edition, to reflect the new information discussed above:

### **Inorganics** Page 1

Carbon disulfide: Add entry of "160" for California State Action Level - Toxicity.

Nickel: Change the California Public Health Goal entry to read "12" and delete the footnote.

Chromium (III): Delete the California Public Health Goal entry.

Chromium (VI): Delete the California Public Health Goal entry.

Chromium (total): Delete the California Public Health Goal entry of 2.5, leaving the footnote "(134)".

#### **Inorganics** Page 2

Chromium (VI): Delete the entry for Cal/EPA Cancer Potency Factor and replace it with the footnote "(134)".

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#### **Inorganics** Page 7

*Uranium:* Change the California Public Health Goal entry to read "0.5 ug/L = 0.43 pCi/L (162)". *Vanadium:* Change the California State Action Levels – Toxicity to read "50".

#### **Organics** Page 14

Chloroform: Add entry of "70(108)" for IRIS Reference Dose. Delete the entry for One-in-a-Million Incremental Cancer Risk Estimates for Drinking Water - USEPA Integrated Risk Information System (IRIS) and change the footnote to read "(B2,108)."

#### Organics Page 73

Simazine: Change the California Public Health Goal entry to read "4" and delete the footnote.

*Tetrachloroethylene (PCE):* Change the California Public Health Goal entry to read "0.06" and delete the footnote.

#### **Organics** Page 74

Add a new line for Quinoline and an entry of "0.01" under One-in-a-Million Incremental Cancer Risk Estimates for Drinking Water - USEPA Integrated Risk Information System (IRIS).

#### Footnotes Page 2

(108): Change this footnote to read "The reference dose (RfD) for noncancer health effects is also considered adequately protective of public health for cancer by the oral route of exposure, on the basis of the nonlinear dose response for this chemical and the mode of action for both cancer and noncancer effects having a common link through cytotoxicity."

(134): Change this footnote to read "Withdrawn."

Add footnote (162) that reads "For natural uranium."

Please contact me by phone at (916) 255-3123 or CalNet 8-494-3123 or by e-mail at marshaj@rb5s.swrcb.ca.gov if you have questions or comments on the information presented herein.

cc: Frances McChesney, Catherine George, and Emma Suarez, Office of the Chief Counsel, SWRCB

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