CMA

CHEMICAL MANUFACTURERS ASSOCIATION

JAN 27 1992

January 24, 1992

To: Vinylidene Chloride Panel Members

Re: California Proposed Drinking Water Rule

Attached is some information from Bruce Dickson regarding a notice of proposed rulemaking by the California Department of Health Services. If the Panel wishes to respond to this proposed rule, please let me know as soon as possible. In the same manner, if there are other issues which the Panel should address, please forward them to me.

Thank you for your attention to this matter. As always, feel free to call me at 202-887-1146 with any questions or concerns.

Regards,

Kathleen M. Roberts
Manager
Vinylidene Chloride Panel

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January 21, 1992

WRITER'S DIRECT DIAL NUMBER
202-457-9423

OUR FILE NO

MEMORANDUM TO THE CMA VINYLIDENE CHLORIDE PANEL

Re: California Proposed Drinking Water Rule

Enclosed is a Notice of Proposed Rulemaking by the California Department of Health Services. We requested a copy of the support document (Proposed Maximum Contaminant Level 1,1-Dichloroethylene (Vinylidene Chloride)), but received the enclosed "Action Level" instead. We will send the correct document when it arrives.

R. Bruce Dickson

RBD:cs

Enclosure

SL 062326

TITLE 22 CALIFORNIA DEPARTMENT OF HEALTH SERVICES

ACTION: Notice of Proposed Rulemaking

SUBJECT: Recommended Public Health Levels (RPHLs) for Contaminants in Drinking Water (R-29-91)

PUBLIC PROCEEDINGS: Notice is hereby given that the California Department of Health Services will hold a public hearing commencing at 10:00 a.m. on 19 February 1992 in the Auditorium at 714 P Street, Sacramento, CA, at which time any person may pr sent statements or arguments orally or in writing relevant to the action described in this notice. Any written statements or arguments must be received by the Office of Regulations, Department of Health Services, 714 P Street, Room 1000, P. O. Box 942732, Sacramento, CA 94234-7320, by 5:00 p.m. on 19 February 1992 , which is hereby designated as the close of the written comment period. It is requested but not required that written statements or arguments be submitted in triplicate.

CONTACT: Inquiries concerning the action described in this notice may be directed to Ron C. Wetherall, Chief, Office of Regulations at (916) 657-0692. In any such inquiries, please identify the action by using the Department regulation control number R-29-91.

INFORMATIVE DIGEST:

All suppliers of domestic water to the public are subject to regulation by the U.S. Environmental Protection Agency (USEPA) under the Safe Drinking Water Act (Public Law 093-523) as well as by the California Department of Health Services (Department) under the California Safe Drinking Water Act (Section 4010-4039.6, Health and Safety Code (H&S)).

The proposed regulations are specifically mandated by Sections 4018, 4019, 4023, 4023.1 and 4023.2 of the Health and Safety Code. These regulations established Recommended Public Health Levels (RPHLs), along with requirements for monitoring, RPHL compliance evaluations, Water Quality Improvement Plans and associated fees, and list the best available technology (BAT) for mitigation purposes for both RPHLs and MCLs.

The following paragraphs describe the proposed state regulations, to be located in Chapter 15 of Title 22, Division 4, section by section.

Article 5.5 is redesignated "Article 5.2".

Section 64446 lists the RPHLs for 32 organics and 2 inorganics and establishes that these standards apply to community water systems serving more than 10,000 service connections.

Section 64446.1 describes the type of prior data acceptable for determining compliance, enables retailers to use raw water data

from the wholesaler for compliance purposes if the data meets certain criteria, and establishes monitoring requirements for RPHLs, the basis of the compliance determination, and the basis on which a reduction in monitoring frequency may occur. The requirements are consistent with existing monitoring requirements for organics.

Section 64446.2 establishes the requirements for an RPHL Compliance Evaluation, which must be submitted to the Department annually when a water system is out of compliance with an RPHL. The section states the time allotted for evaluation preparation and describes the required content.

Section 64446.3 establishes the requirements for a Water Quality Improvement plan, which must be submitted to the Department when notified by the Department to do so. The section states the time allotted for plan preparation and describes the required content.

Section 64446.4 establishes the requirement for a fee to be submitted along with the Water Quality Improvement Plan. The total fee is the sum of a base fee which increases with the number of service connections and two surcharges related to the number of contaminant treatment objectives and contaminated sources.

Section 64455 establishes the best available technologies, treatment techniques, or other means available for achieving compliance with both MCLs and RPHLs for organic chemicals. Technologies are provided for those contaminants for which USEPA has established BAT.

Section 64456 establishes the best available technologies, treatment techniques, or other means available for achieving compliance with both MCLs and RPHLs for inorganic chemicals.

In summary, these proposed regulations do the following: Established Recommended Public Health Levels with associated monitoring requirements for systems with more than 10,000 service connections; describe compliance requirements for systems exceeding an RPHL, including the preparation of an RPHL compliance evaluation and, possibly, a Water Quality Improvement Plan with which fees must be submitted to the Department; and identify the best available technology, treatment techniques, or other m ans available for achieving compliance with both MCLs and RPHLs.

AUTHORITY: Sections 4018, 4019, 4023, 4023.2 and 4023.3, Health and Safety Code.

REFERENCE: Sections 4021, 4023, 4023.3, 4024 and 4025, Health and Safety Code.

FISCAL IMPACT ESTIMATE:

A. Fiscal Effect on Local Government: Additional annual expenditures of approximately $612,500 in the second year

after adoption and $485,000 in the third and subsequent years.

B. Fiscal Effect on State Government: No fiscal impact exists.

C. Fiscal Effect on Federal Funding of State Programs: No fiscal impact exists.

D. Fiscal Effect on Private Persons or Businesses Directly Affected: Additional annual expenditures of approximately $420,000 in the second year after adoption and $322,500 in the third and subsequent years.

E. Fiscal Effect on Small Businesses: No fiscal impact exists.

DETERMINATIONS: The proposed regulations do not impose a mandate on local agencies which requires state reimbursement pursuant to Part 7 (commencing with Section 17500) of Division 4 of the Government Code. Local agencies which operate public water systems with greater than 10,000 service connections will incur costs. However, these costs are not the result of a "new program or higher level of service" within the meaning of Article XIIIB, Section 6 of the California Constitution because they apply generally to all individuals and entities that operate public water systems with greater than 10,000 service connections in California and do not impose unique requirements on local government. Therefore, no state reimbursement of these costs is required.

There will be no costs incurred by local agencies for enforcement of the new regulations since the new regulations do not apply to the public water systems for which the local agencies are responsible (under 200 service connections).

The Department has also determined that the regulations would not have a significant adverse economic impact on small businesses.

AVAILABILITY OF STATEMENT OF REASONS AND TEXT OF REGULATIONS: The Department has prepared and has available for public review an initial statement of reasons for the proposed regulations, all the information upon which the proposed regulations are based, and the text of the proposed regulations. A copy of the initial statement of reasons and a copy of the text of the proposed regulations are available upon request by writing to the Office of Regulations at the address noted above, which address will also be the location of public records, including reports, documentation, and other materials related to the proposed regulations.

AVAILABILITY OF CHANGED OR MODIFIED TEXT: The full text of any regulation which is changed or modified from the express terms of the proposed action will be made available by the Department's Office of Regulations at least 15 days prior to the date on which the Department adopts, amends, or repeals the resulting regulation.

ADDITIONAL STATEMENTS AND COMMENTS: In accordance with Government Code Section 11346.5(a)(7), the Department must determine that no alternative considered by the Department would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the proposed action. Other regulation changes may be scheduled for hearing at the same time appointed for public hearing on the action described in this notice. An agenda for the public hearing will be posted at the time and place of hearing designated above.

DEPARTMENT OF HEALTH SERVICES

R-29-91

Dated: 4 December 1991

Molly Joel Coye, M.D., M.P.H.
Director

SL 062330

Initial Statement of Reasons

Recommended Public Health Levels

Chapter 15. Domestic Water Quality and Monitoring

Title 22, California Code of Regulations

Pursuant to California Health and Safety Code Sections 4018, 4019, and 4023, the California Department of Health Services (Department) is mandated to establish Recommended Public Health Levels (RPHLs) for contaminants in drinking water. The mandate includes requirements for monitoring, RPHL Compliance Evaluations, and Water Quality Improvement Plans.

Article 5.2 Primary Standards - Organic Chemicals

This article, currently designated "Article 5.5", is being redesignated "Article 5.2" to facilitate the appropriate sequential placement in Chapter 15 of the article on Recommended Public Health Levels.

Article 5.5 Recommended Public Health Levels

Section 64446. Recommended Public Health Levels (RPHLs).

The purpose of this section is to list the contaminants with RPHLs with which systems over 10,000 service connections must comply, pursuant to Section 4023, Health and Safety Code.

RPHLs are proposed only for organic and inorganic contaminants for which the Department has already adopted MCLs. However, there are some contaminants with MCLs for which RPHLs have not been proposed at this time. The reason is that these MCLs will be revised within the next 1 to 3 years, subsequent to USEPA's adoption of new standards. Consequently, the risk assessments will be updated, possibly changing some of the existing MCLs and, potentially, any proposed RPHLs. Considering the potential impacts of the RPHLs on public water systems in terms of public awareness via the annual reports and capital expenditures, the Department concluded that it would be best to defer establishing these RPHLs until the MCLs are updated. At that time, the Department will propose RPHLs for these contaminants simultaneously with the proposal of the new MCLs. Included in this list are arsenic, lead, cadmium, nitrate, trihalomethanes, and radioactivity. RPHLs for contaminants for which the Department has not yet adopted MCLs will be proposed in the future simultaneously with MCLs.

The Proposed Maximum Contaminant Level (PMCL) documents developed by the Department for each contaminant during the MCL proposal process detail the risk assessments from which most of the RPHLs were derived. RPHLs for carcinogens are proposed at a level which does not pose any significant risk

to health, i.e., the de minimis risk level (one excess cancer case in a million individuals exposed over a lifetime of 70 years). RPHLs for noncarcinogens are proposed at a level at which scientific evidence indicates that no known or anticipated adverse effects on health will occur, plus an adequate margin of safety.

Synergistic effects resulting from exposure to, or interaction by, two or more contaminants were considered in the derivation of RPHLs, when information was available. The Department also considered the existence of groups or individuals in the population which are more susceptible to adverse effects of contaminants than a normal healthy adult, and the contaminant exposure and body burden levels which alter physiological function or structure in a manner which may significantly increase the risk of illness, whenever information was available. And finally, when deriving RPHLs, the Department considered exposure to contaminants in media other than drinking water.

The RPHLs for most contaminants are the same as their MCLs. However, this is not always the case. For ten contaminants (benzene, chlordane, 1,2-dibromo-3-chloropropane, 1,2-dichloroethane, 1,3-dichloropropene, ethylene dibromide, heptachlor epoxide, tetrachloroethylene, trichloroethylene, and vinyl chloride) the RPHLs are more stringent, since factors other than health effects were involved in the MCL

derivations. These factors include analytical method detection limits and the cost impact of compliance.

The Department will review RPHLs on a five-year periodic basis. Health and Safety Code Section 4023(i) requires that RPHLs be reviewed periodically and since Section 4023.1(b) requires that primary drinking water standards be reviewed at least once every five years, it would be cost-effective to simultaneously review the RPHLs.

The following paragraphs provide the justification for th levels proposed for the RPHLs. The determination has already been made that the presence of these chemicals in drinking water should be regulated and has been justified in the Maximum Contaminant Level regulation packages, so that will not be done here. Since RPHLs will be established for all regulated constituents, and the levels must be at least as stringent as the federal drinking water standards and could not be less stringent than the existing state drinking water standards, based on the health criteria in Section 4023, Health and Safety Code, the details provided below ar brief.

Volatiles (VOCs)

Benzene - Benzene is a solvent used in gasoline, detergents, pesticides, plastics, nylon, and dyes. It is a known human carcinogen, causes leukemia and blood disorders,

and is toxic to the bone marrow. The state MCL of 0.001 mg/l was based on the geometric mean of four risk estimates developed by the Department; the mean was 0.63 ppb and was rounded up to 1.0 ppb, the level associated with an approximate risk of 10^{-6}. Recently the Department recalculated the level associated with a risk of 10^{-6} using a slightly different model and derived an RPHL level of 0.00035 mg/l (CDHS, 1991). This level meets the RPHL criteria listed in Section 4023, Health and Safety Code.

Carbon Tetrachloride - Carbon tetrachloride is a solvent used primarily in the manufacture of refrigerants. It is a suspected human carcinogen, causing liver tumors in animal studies (CDHS, 1988g). The RPHL is proposed at the MCL level of 0.0005 mg/l since this level meets the RPHL criteria listed in Section 4023, Health and Safety Code.

1,4-Dichlorobenzene - 1,4-Dichlorobenzene is used in mothballs, as a preservative and as a deodorizer. It is a potential human carcinogen, causing liver and kidney tumors, as well as leukemia, in animal studies (CDHS, 1988i). The RPHL is proposed at the MCL level of 0.005 mg/l since this level meets the RPHL criteria listed in Section 4023, Health and Safety Code.

1,1-Dichloroethane - 1,1-Dichloroethane is an extraction and degreasing solvent, a fumigant, and used in

various manufacturing processes. It is a non-carcinogen, based on animal studies in which it produced liver and kidney effects and reduced body weight (CDHS, 1989e). The RPHL is proposed at the MCL level of 0.005 mg/l since this level meets the RPHL criteria listed in Section 4023, Health and Safety Code.

1,2-Dichloroethane - 1,2-Dichloroethane is used in the manufacture of chlorinated solvents such as trichloroethylene (TCE) and tetrachloroethylene (PCE); it is also a lead scavenger, a solvent and a pesticide. It is a potential human carcinogen, causing cancer at various sites in animal studies (CDHS, 1988d). The state MCL was constrained to 0.0005 mg/l because it was the analytical quantification limit; this level does not meet all the RPHL criteria listed in Section 4023, Health and Safety Code. Hence, the proposed RPHL is more stringent at 0.0003 mg/l.

1,1-Dichloroethylene - 1,2-Dichloroethylene is used in the production of latexes for coatings, carpet, plastics, and extruded pipes. It is a non-carcinogen which causes adverse liver and kidney effects in animal studies (CDHS, 1987b). The RPHL is proposed at the MCL level of 0.006 mg/l since this level meets the RPHL criteria listed in Section 4023, Health and Safety Code.

cis-1,2-Dichloroethylene - cis-1,2-Dichloroethylene is a major biodegradation by-product of TCE and PCE groundwater contamination and has a limited use as a solvent. It is a non-carcinogen which causes adverse liver and kidney effects in animal studies (CDHS, 1989b). The RPHL is proposed at the MCL level of 0.006 mg/l since this level meets the RPHL criteria listed in Section 4023, Health and Safety Code.

trans-1,2-Dichloroethylene - trans-1,2-Dichloroethylene is a minor biodegradation by-product of TCE and PCE groundwater contamination, has limited use as a solvent, and is used to decaffeinate Instant coffee. It is a non-carcinogen which causes pulmonary, CNS, kidney, liver, cardiac, eye and dermal effects in acute, subacute and subchronic animals studies (CDHS, 1989g). The RPHL is proposed at the MCL level of 0.01 mg/l since this level meets the RPHL criteria listed in Section 4023, Health and Safety Code.

1,2-Dichloropropane - 1,2-Dichloropropane is a primary component on some fumigants. It is a potential human carcinogen which causes benign breat tumors in animal studies; it has also shown liver, kidney, lung and CNS toxicity in animal studies (CDHS, 1989h). The RPHL is proposed at the MCL level of 0.005 mg/l since this level meets the RPHL criteria listed in Section 4023, Health and Safety Code.

1,3-Dichloropropene - 1,3-Dichloropropene is a soil fumigant for the control of nematodes. It is a potential human carcinogen which causes stomach, liver, bladder and lung tumors in animal studies (CDHS, 1988h). Th establishment of the state MCL of 0.0005 mg/l was constrained by the analytical quantification limit and the state MCL level does not meet all the RPHL criteria listed in Section 4023, Health and Safety Code. Hence, the proposed RPHL is more stringent at 0.0002 mg/l.

Ethylbenzene - Ethylbenzene is a solvent and is used in the manufacture of styrene and as a dilutant for gasoline and insecticides. It is a non-carcinogen which causes liver, kidney and CNS effects in animal studies (CDHS, 1987e). The RPHL is proposed at the MCL level of 0.680 mg/l since this level meets the RPHL criteria listed in Section 4023, Health and Safety Code.

Monochlorobenzene - Monochlorobenzene is a solvent for degreasing and drycleaning, is used in the manufacture of resins, dyes and perfumes and in the synthesis of pesticides. It is a non-carcinogen which causes liver, kidney, respiratory system and CNS effects in animal studies (CDHS, 1986a). The RPHL is proposed at the MCL level of 0.030 mg/l since this level meets the RPHL criteria listed in Section 4023, Health and Safety Code.

1,1,2,2-Tetrachloroethane - Tetrachloroethane is a solvent and is used in the production of TCE, pesticies, varnish and lacquers. It is a non-carcinogen which causes liver and CNS effects in humans, and liver, kidney and CNS effects in animal studies (CDHS, 1986b). There is limited evidence of carcinogenicity, but 1,1,2,2-tetrachloroethane does not meet Department criteria for a carcinogen. The RPHL is proposed at the MCL level of 0.001 mg/l since this level meets the RPHL criteria listed in Section 4023, Health and Safety Code.

Tetrachloroethylene (PCE) - PCE is a solvent used in textile processing, drycleaning, and in metal degreasing. It is considered a carcinogen based on some evidence in human workers and tumors in animal studies. It may possibly be a fetotoxin at high doses (CDHS, 1988j). The state's MCL of 0.005 mg/l was constrained by economic considerations and the Department's decision to conform with the federal standard for PCE; it does not meet all the RPHL criteria listed in Section 4023, Health and Safety Code. Hence, the proposed RPHL is more stringent at 0.0007 mg/l.

1,1,1-Trichloroethane (1,1,1-TCA) - 1,1,1-TCA is used in the manufacture of food wrappings. It is a non-carcinogen which causes depression of the CNS, increase in liver weight and cardiovascular changes in animals and

humans. There is limited evidence of carcinogenicity, but it does not meet Department criteria for a carcinogen (CDHS, 1989f). The RPHL is proposed at the MCL level of 0.200 mg/l since this level meets the RPHL criteria listed in Section 4023, Health and Safety Code.

1,1,2-Trichloroethane (1,1,2-TCA) - 1,1,2-TCA is a solvent, a component of adhesives, and used in the manufacture of 1,1-dichloroethylene. It does not meet the Department's criteria for a carcinogen and is regulated as a non-carcinogen (CDHS, 1987i). The RPHL is proposed at the MCL level of 0.032 mg/l since this level meets the RPHL criteria listed in Section 4023, Health and Safety Code.

Trichloroethylene (TCE) - TCE is a solvent, a paint stripper, and a degreasing agent. It is a probable human carcinogen which causes liver, lung, and kidney tumors in animal studies (CDHS, 1988l). The state MC of 0.005 mg/l was constrained by economic considera ns and th Department's deci n to conform with the . eral standard for TCE; it does not quite meet all the RPHL criteria listed in Section 4023, Health and Safety Code. Hence, the proposed RPHL is slightly more stringent at 0.0025 mg/l.

Vinyl Chloride - Vinyl chloride is used in the production of polyvinyl chloride (PVC), and is a biodegradation by-product of TCE and PCE groundwater

contamination. It is a known human carcinogen which causes a rare form of malignant liver tumors in humans and animals and tumors at other sites in animals (CDHS, 1987h). The state MCL of 0.0005 mg/l was set at the limit of analytical quantification, but this level does not meet all the RPHL criteria listed in Section 4023, Health and Safety Code. Hence, the proposed RPHL is more stringent at 0.00015 mg/l.

Xylenes - Xylenes are solvents used in fuels, coatings, lacquers, enamels, cleaning agents, and resins and are also used in the manufacture of dyes, insecticides, and pharmaceuticals. They are non-carcinogens which cause irritation of the skin and lungs, CNS and immunological effects, and liver and kidney damage from acute and chronic exposure in both humans and animals; they have also shown developmental toxicity in animals studies (1987j). The RPHL is proposed at the MCL level of 1.750 mg/l since this level meets the RPHL criteria listed in Section 4023, Health and Safety Code.

Synthetic Organic Chemicals (SOCs)

Atrazine - Atrazine is an herbicide; it is used for non-selective weed control along highways and railroads and for selective weed control on sorghum, corn, and other crops. It is a non-carcinogen which causes a number of effects in animal studies: decreased food intake, increased heart and liver weights, changes in blood parameters, and

tremors in beagles; reproductive effects in female rats and rabbits, with developmental effects in offspring; marginal increase in mammary tumors in rats only, but does not m et Department criteria for a carcinogen (CDHS, 1986e). The RPHL is proposed at the MCL level of 0.003 mg/l since this level meets the RPHL criteria listed in Section 4023, Health and Safety Code.

Bentazon - Bentazon is an herbicide, predominately used on soybeans, corn, rice, dry beans, and peanuts. It is a non-carcinogen which causes adverse effects in animals studies: prostatis and signs of gastrointestinal distress in beagles; changes in hemoglobin in female rats and reproductive toxicity in male mice (CDHS, 1988f). The RPHL is proposed at the MCL level of 0.018 mg/l since this level meets the RPHL criteria listed in Section 4023, Health and Safety Code.

Carbofuran - Carbofuran is a broad spectrum carbamate insecticide, nematicide and miticide used mainly to control water weevil, alfalfa weevil, and nematodes in grape vineyards. It is a non-carcinogen which causes adverse effects in animal studies: depression of cholinesterase activity in three species; increased testicular degeneration in beagles (CDHS, 1988b). The RPHL is proposed at the MCL level of 0.018 mg/l since this level meets the RPHL criteria listed in Section 4023, Health and Safety Code.

Chlordane - Chlordane is an insecticide used especially for termites, cutworms, ants, root weevils, rose beatles, and greashoppers in residential, commercial and agricultural applications. It is a potential human carcinogen which has caused liver tumors in multiple animal studies; it also decreased fertility and viability of offspring in rats and mice (CDHS, 1988c). The state MCL of 0.0001 mg/l was set at the analytical quantification limit and does not meet all the RPHL criteria listed in Section 4023, Health and Safety Code. Hence, the proposed RPHL is more stringent at 0.0007 mg/l.

Dibromochloropropane (DBCP) - DBCP is a nematicide which was used for grapes, tomatoes, tree fruit and soy beans before it was banned in 1977 in California. It is a probable human carcinogen which causes stomach, nasal, liver, mammary, and renal tube tumors in animal studies; it is also a human testicular toxin at high doses, causing reduced sperm counts and hormonal disturbances with decreased libido or impotence (CDHS, 1987a). The state MCL of 0.0002 mg/l was constrained by economic considerations and the analytical quantification limit, so it does not meet the RPHL criteria in Section 4023, Health and Safety Code. Hence, the proposed RPHL is more stringent at 0.000002 mg/l.

Di(2-ethylhexyl)pthalate (DEHP) - DEHP is a plasticizing additive in the production of polyvinyl chloride (PVC) resin, an inert ingredient in pesticides, and a component of dielectric fluids. It is a potential human carcinogen which causes liver tumors in animal studies; it has also shown effects on the liver and testes, and reproductive and developmental effects in animal studies (CDHS, 1989d). The RPHL is proposed at the MCL level of 0.004 mg/l since this level meets the RPHL criteria listed in Section 4023, Health and Safety Code.

Ethylene dibromide - Ethylene dibromide was formerly used as a pesticide; it is currently used as fumigant for soil, grain and fruit; it is also used as a scavenger in leaded gasoline and aviation fuel. It is a probable human carcinogen which has caused tumors in animal studies and appears to be very pote[illegible] it is also a human reproductive toxin, causing reduced sperm counts in males (CDHS, 1987c). The setting of the state MCL at 0.00002 mg/l was constrained by the analytical quantification limit. Hence, the proposed RPHL is slightly more stringent at 0.00001 mg/l.

Glyphosate - Glyphosate is an herbicide used for agricultural, recreational, public area, roadside and home applications. It is a non-carcinogen which is toxic to kidneys in animal studies (CDHS, 1989c). The RPHL is proposed at the MCL level of 0.7 mg/l since this level meets

the RPHL criteria listed in Section 4023, Health and Safety Code.

Heptachlor - Heptachlor is an insecticide which was used at one time for soil insects and termites. It is a carcinogen which causes liver and other tumors in animal studies (CDHS, 1987d). The RPHL is proposed at the MCL level of 0.00001 mg/l since this level meets the RPHL criteria listed in Section 4023, Health and Safety Code.

Heptachlor epoxide - Heptachlor epoxide is a degradation by-product of heptachlor and is not commercially available. It is a carcinogen which causes liver and other tumors in animal studies (CDHS, 1987d). The setting of the MCL of 0.00001 was constrained by the analytical quantification limit. Hence, the proposed RPHL is more stringent at 0.000007 mg/l.

Molinate - Molinate is an herbicide used for weed control in rice fields. It is a non-carcinogen which causes adverse effects in animal studies; it is toxic to the male reproductive system in rodents, inducing infertility and interfering with sperm production (CDHS, 1987g). The RPHL is proposed at the MCL level of 0.02 mg/l since this level meets the RPHL criteria listed in Section 4023, Health and Safety Code.

Thiobencarb - Thiobencarb is an herbicide used for weed control in rice fields. It is a non-carcinogen which causes adverse effects in animals studies; it decreased fertility and fetal survival in one rat study (CDHS, 1987f). The RPHL is proposed at the MCL level of 0.07 mg/l since this level meets the RPHL criteria listed in Section 4023, Health and Safety Code.

Trichlorofluoromethane - Trichlorofluoromethane is an aerosol propellant and a refrigerant. It is a non-carcinogen which sensitizes the heart in certain animal species at high doses (CDHS, 1989j). The RPHL is proposed at the MCL level of 0.15 mg/l since this level meets the RPHL criteria listed in Section 4023, Health and Safety Code.

1,1,2-Trichloro-1,2,2-trifluoromethane - 1,1,2-Trichloro-1,2-2-trifluoromethane is used as a refrigerant, for degreasing and drying applications, as a cutting fluid, and for the removal of solder flux. It is a nor carcinogen sensitizes the heart in certain animal species at high doses (CDHS, 1989i). The RPHL is proposed at the MCL level of 1.2 mg/l since this level meets the RPHL criteria listed in Section 4023, Health and Safety Code.

Section 64446.1. Monitoring - Recommended Public Health Levels.

The purpose of this section is to establish the monitoring requirements for RPHLs and the basis of the compliance determination, pursuant to Section 4018, Health and Safety Code.

64446.1(a). This subsection describes the type of prior data acceptable for determining RPHL compliance. The intent is that data requirements for RPHLs be as consistent as possible with those for Maximum Contaminant Levels (MCLs). The limit on the age of data to 3 years is consistent with the requirements for organic chemical data for MCL compliance, as specified in Subsection 64444(b).

64446.1(b). This subsection enables retailers to use the raw water data obtained by the wholesaler for RPHL compliance purposes, as long as it has been collected and analyzed in compliance with the regulations. This is consistent with organic MCL compliance data requirements in Subsection 64444(d). Such data adequately characterizes the quality of the water provided by the retailer to the consumer.

64446.1(c-e). These subsections establish RPHL monitoring requirements which are consistent with MCL monitoring requirements and Subsection 4018(b), Health and Safety Code. When a chemical is detected and the RPHL is the same as the

MCL, no additional monitoring is required. For consistency and ease in implementation, the initial monitoring for RPHL compliance is simultaneous with the MCL monitoring. As systems monitor organics and inorganics pursuant to the existing regulations [Sections 64431, 64435(d)(2), 64445, 64445.1(b)(1), and 64447], results are compared to RPHLs, as well as MCLs. Confirmation of a result which exceeds an RPHL is as required when an MCL has been exceeded. Reporting is as required for MCL compliance in Section 64451(a).

When a chemical has been detected for which the RPHL is more stringent than the MCL, a confirmed finding exceeding an RPHL results in quarterly monitoring, regardless of the chemical. The requirement for quarterly monitoring is consistent with the existing monitoring requirements for organics [Section 64445.1(b)(1)] and enables the determination of compliance as required in Chapter 7, Section 4018(b). This section requires that RPHL compliance for organics be based on the average concentration of the most recent four consecutive quarters. For consistency and to evaluate any potential seasonal variations, quarterly monitoring for inorganics is also required and the compliance for inorganics will be established in the same way.

64446.1(g). This subsection establishes the basis on which a reduction in monitoring frequency may occur. Since a system must sample for a minimum of four quarters to establish compliance, any system with a confirmed finding exceeding an RPHL will be required to conduct a minimum of one year of quarterly monitoring. The Department believes that this will provide sufficient data, along with the vulnerability assessment and previous MCL monitoring data, to determine whether or not a reduction in monitoring is appropriate. Such a reduction would be appropriate if the contamination has either stabilized at a level meeting the RPHL or the most recent result meets the RPHL and the data is demonstrating a clear trend toward reduction.

Section 64446.2. RPHL Compliance Evaluation.

This section establishes the requirements for an RPHL Compliance Evaluation, which systems must submit to the Department annually when out of compliance with an RPHL, pursuant to Section 4018, Health and Safety Code.

64446.2(a). This subsection establishes the basis and frequency for the requirement for the RPHL compliance evaluation.

64446.2(b). This subsection establishes the length of time that a water supplier has to submit the RPHL compliance

evaluation to the Department, once the determination of noncompliance has been made. The Department believes that six months provides an adequate period of time for the water supplier to develop the evaluation. Also, the supplier has the year during which compliance data is being collected to anticipate the need for an evaluation and begin development.

64446.2(c). This subsection details the content requirements of the compliance evaluation. In order for the Department to evaluate the feasibility of mitigation for RPHL compliance, the evaluation needs to include all alternatives, as well as costs.

Section 64446.3. Water Quality Improvement Plan

This section establishes the requirements for a Water Quality Improvement Plan, which systems must submit to the Department when notified by the Department to do so, pursuant to Section 4018, Health and Safety Code. The requirements detailed in the regulation closely follow those listed in Section 4018, Health and Safety Code, which provides a very comprehensive outline of the plan. The regulations do not go into further detail because it is not necessary; however, it is necessary that the outline be in the RPHL regulations to provide the water supplier with a cohesive picture of the RPHL-related requirements.

64446.3(a). This subsection establishes the length of time that a water supplier has to submit the Water Quality Improvement Plan to CDHS, once notified by CDHS to do so, as well as the content of the plan. CDHS believes that six months provides an adequate period of time for the water supplier to develop the plan. The compliance evaluation provides the foundation for the plan, which is more thorough, and requires the additional elements of consumer costs and a proposed schedule of action, pursuant to subsection 4018(b)(2), Health and Safety Code.

64446.3(b). This subsection requires that if the water system is unable to reduce the level of the contaminant exceeding the RPHL, it must describe the basis for that determination in the plan, pursuant to subsection 4018(b)(2), Health and Safety Code.

Section 64446.4. Water Quality Improvement Plan Fee

This section establishes the requirement for a fee to be submitted along with the Water Quality Improvement Plan in order to cover Department costs for plan review, pursuant to Section 4019, Health and Safety Code. The total fee is the sum of a base fee and two surcharges. To develop the fee structure, the Department used the workload factors for review and implementation of an "average" plan detailed in

the Budget Change Proposal submitted for fiscal year 1990-91 to implement Chapter 823, Statutes of 1989, known as AB 21 (Health Services, 1989; also see Fiscal Impact Estimate Tables 1 and 2); then cost was factored in using unit costs for technical and clerical staff required; finally, the total number of plans to be submitted was estimated, based on contamination data, to derive the total cost of plan review and implementation to the Department. Next, the number of plans to be submitted by different size systems was estimated, along with the range of complexity. Starting with the "average" plan review and implementation cost (equivalent to the fee), the intervals for different size systems and different complexities of plans were developed by a process of distribution which considered increments of difficulty in review and implementation.

The base fee (Table 64446.4-A) increases with the number of service connections and, therefore, the amount of water purveyed. This fee is derived from the estimated minimum number of hours required by an associate engineer to review the basic elements of the plan. As systems get larger, they tend to be more complex. For this reason, the base fee increases with the size of the system to provide for the additional effort required for plan review.

The first surcharge (Table 64446.4-B) relates to the number of contaminant treatment objectives. When a single

treatment system will remove several different contaminants for which RPHLs are exceeded, this would be considered one contaminant treatment objective. If there were other contaminants for which a second treatment system must be evaluated, this would constitute a second treatment objective. To some extent, a contaminant treatment objective will translate into the number of different categories of contaminants which exceed RPHLs, e.g., volatile organics, pesticides, inorganics. For each category and potential subcategory, a separate treatment system with alternatives will need to be discussed in the plan and subsequently reviewed by CDHS. This surcharge is established to partially cover the time and effort required for review of the the various treatment alternatives.

The second surcharge (Table 64446.4-C) relates to the number of contaminated sources discussed in the plan. The two surcharges provide fee increments related to the level of complexity of the plan in terms of the number of raw water sources, to partially cover the additional time and effort required to review more complex plans.

Article 6.5 Best Available Technologies (BAT)

Section 64455. BAT - Organics

This section establishes the best available technologies, treatment techniques, or other means available for achieving

compliance with both MCLs and RPHLs for organics, pursuant to Section 4021, Health and Safety Code. Technologies are provided for those contaminants for which the USEPA has established BAT (40 Code of Federal Regulations Sections 141.61 and 141.62; see Federal Register (56)20: pp 3552-3556, January 30, 1991 and Federal Register (55)143: pp 30416-30424, July 25, 1990). BAT for the other contaminants will be adopted at a later date. The unavailability of BAT for some of the contaminants will not create regulation implementation difficulties because monitoring to establish RPHL compliance will not have been completed prior to January, 1993.

Section 64456. BAT - Inorganics

This section establishes the best available technologies, treatment techniques, or other means available for achieving compliance with both MCLs and RPHLs for inorganics, pursuant to Section 4021, Health and Safety Code. Technologies are provided for those contaminants for which the USEPA has established BAT (40 Code of Federal Regulations Sections 141.61 and 141.62; see Federal Register (56)20: pp 3552-3556, January 30, 1991 and Federal Register (55)143: pp 30416-30424, July 25, 1990).

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ALTERNATIVES TO THE PROPOSED REGULATION

No alternatives considered by the Department would be more effective in carrying out the purpose for which the regulations are proposed or would be as effective and less burdensome to affected private persons than the proposed regulations.