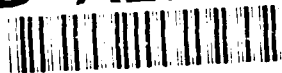


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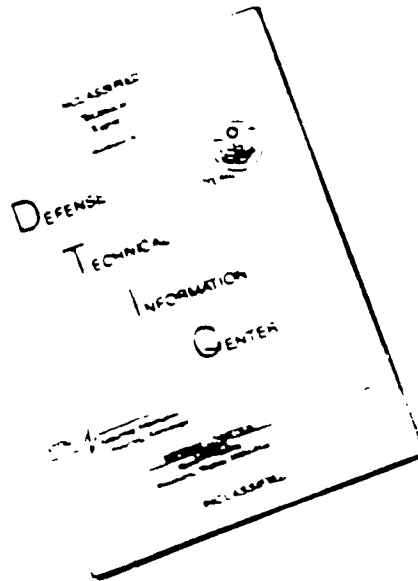
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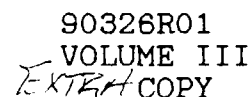
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**PROGRAM MANAGER**  
**RMA CONTAMINATION CLEANUP**

U.S. ARMY  
MATERIEL COMMAND

**— COMMITTED TO PROTECTION OF THE ENVIRONMENT —**

**Rocky Mountain Arsenal  
Proposed Final  
Rocky Mountain Arsenal  
Chemical Index  
Volume III  
Potential Chemical-Specific ARARs for  
On-Post Operable Unit, RMA**

**August, 1988**

**Prepared by :**

**Program Manager's Office for  
Rocky Mountain Arsenal  
Contamination Cleanup**

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ROCKY MOUNTAIN ARSENAL

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ROCKY MOUNTAIN ARSENAL

CHEMICAL INDEX

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VOLUME III

Potential  
Chemical-Specific ARARs for  
On-Post Operable Unit, RMA

August 1988

Prepared for

U.S. Army Program Manager's Office for  
Rocky Mountain Arsenal

THE INFORMATION AND CONCLUSIONS PRESENTED IN THIS REPORT REPRESENT THE OFFICIAL POSITION OF THE DEPARTMENT OF THE ARMY UNLESS EXPRESSLY MODIFIED BY A SUBSEQUENT DOCUMENT. THIS REPORT CONSTITUTES THE RELEVANT PORTION OF THE ADMINISTRATIVE RECORD FOR THIS CERCLA OPERABLE UNIT.

THE USE OF TRADE NAMES IN THIS REPORT DOES NOT CONSTITUTE AN OFFICIAL ENDORSEMENT OR APPROVAL OF THE USE OF SUCH COMMERCIAL PRODUCTS. THIS REPORT MAY NOT BE CITED FOR PURPOSES OF ADVERTISEMENT.

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## COMMENTS ON THE CHEMICAL-SPECIFIC ARARs

- I. EPA Comments
- II. CDH Comments
- III. Shell Comments

## INTRODUCTION

### A. Contents of Volume

This revised Volume III of the Rocky Mountain Arsenal (RMA) Chemical Index is a companion to Volumes I and II that are being simultaneously issued on this date to the Parties and the State.

For each of the chemicals identified in the prior two volumes, this volume sets forth the potential applicable or relevant and appropriate standards, requirements, criteria or limitations (ARARs) for air, ground water, soil, surface water or biota for the On-Post Operable Unit, as well as specifies whether: (i) the designated chemicals constitute CERCLA Hazardous Substances; (ii) are ranked as a potential human health risk on the priority-order list prepared by the U.S. Environmental Protection Agency (EPA) and the Agency for Toxic Substances and Disease Registry (ATSDR), 52 Fed. Reg. 12866 (1987); (iii) are air analytes; (iv) are ground water remedial investigation (RI) analytes; (v) are soil RI analytes; (vi) are soil EA analytes; (vii) are surface water RI analytes; or (viii) are biota RI analytes. (A separate but similar volume is being prepared to identify the potential chemical-specific ARARs for the Off-Post Operable Unit.)

Where potential duly promulgated ARARs exist at this time for the designated chemicals, these are identified in this volume by citation to both the controlling regulatory provision and the relevant ARAR limit, standard or criterium derived from that

regulation. For these purposes, all pertinent statutes and regulations of the EPA, U.S. Food and Drug Administration (FDA), and the Colorado Department of Health (CDH) promulgated through July 28, 1988, were reviewed to determine their suitability for inclusion in this document as potential ARARs.

#### B. Process for Selecting Chemical-Specific ARARs

By issuing this list of potential ARARs, the Army does not purport to determine which of these regulations are applicable and which are relevant and appropriate, or even to represent that all of these regulations warrant selection as some form of ARARs for the On-Post Operable Unit. Rather, this volume of potential ARARs is prepared solely to ensure that decisionmaking with respect to the On-Post Endangerment Assessment will be fully informed with respect to all existing regulations that merit consideration as ARARs.

It should be noted that the accompanying list of chemical-specific ARARs will be up-dated to reflect any additional Federal or State Chemical-Specific regulations promulgated prior to the issuance of the On-Post Endangerment Assessment draft product report in July 1990, and thereafter prior to the issuance of the proposed final version of that Endangerment Assessment Report. The list of On-Post chemical-specific ARARs will then be up-dated in the context of the Feasibility Study to reflect any ARARs promulgated prior to the issuance of the proposed final version of the On-Post Feasibility Study Report in 1992.

The actual selection of ARARs for this portion of the RI/FS will occur in the future in accordance with the terms of CERCLA Section 121(d)(2), 42 U.S.C. § 9621(d)(2), the National Contingency Plan (NCP), EPA guidance that is not inconsistent with CERCLA and the NCP, and the proposed Consent Decree (including the RI/FS Process document).

The first step in this process will be to determine the chemicals for which an ARAR determination is warranted since 42 U.S.C. § 9621(d)(2) provides that ARARs are to be selected only for hazardous substances, pollutants, or contaminants. Second, it will be necessary for the Army to determine whether ARARs exist for the designated hazardous substances, pollutants or contaminants. Third, the Army will determine the ARARs to be attained for purposes of remedial action on the On-Post Operable Unit and whether any ARARs should be waived in accordance with CERCLA's provisions. (Where either there is no existing ARAR or no ARAR is selected for a particular chemical compound, the Endangerment Assessment will set levels or standards of control through the risk assessment process that are to be protective of human health and the environment.) The On-Post Chemical-Specific ARARs selected by the Army will be set forth in the Endangerment Assessment Report.

The Parties and the State will have an opportunity for review and comment on the specific application of the Chemical

Index both in the context of the draft Endangerment Assessment Report and the draft Feasibility Study Report.

### C. Potential Air ARARs

For the potential air ARARs, all generally pertinent National Ambient Air Quality Standards (NAAQS) and Natural Emission Standards for Hazardous Air Pollutants (NESHAP) are identified.

No air ARARs have been expressly designated for particulate matter because such particulate standards are not chemical-specific. Nevertheless, for purposes of clean-up of the RMA On-Post Operable Unit, it should be noted that the provisions of 40 C.F.R. § 50.6 will be a potential ARAR: There will be no particulate matter (of whatever chemical) transported by air that is in excess of 75 micrograms per cubic meter--annual geometric mean and that 260 micrograms per cubic meter--maximum 24-hour concentration will not be exceeded more than once a year.

### D. Potential Ground Water ARARs

Potential ground water ARARs include Maximum Contaminant Levels (MCL) and Maximum Contaminant Level Goals (MCLG) from the National Primary Drinking Water Regulations (NPDW), 40 C.F.R. Part 141, the Clean Water Act's Toxic Pollutant Effluent Standards (TPES), 40 C.F.R. Part 129, the ground water protection standards of the Resource Conservation and Recovery Act, 40 C.F.R. Part 264 regulations (RCRA), the human health protection provisions of the Ambient Water Quality Criteria



(AWQC), 45 Fed. Reg. 79318 (1980)<sup>1</sup>, and FDA's Tolerances for Pesticides in Food Administered by EPA (TPF).<sup>2</sup>

#### E. Potential Soil ARARs

No potential chemical-specific ARARs were identified that might pertain to the chemicals in the RMA soils.

#### F. Potential Surface Water ARARs

Potential surface water ARARs for the RMA lakes and streams are similar to those for potential ground water (including the NPDW, the TPES, RCRA, the human protection provisions of the AWQC and the TPFA), as well as the fresh water aquatic life protection provisions of AWQC.

#### G. Potential Biota ARARs

While there are no chemical-specific ARARs that pertain to the wild flora and fauna found on RMA (except for the aquatic life AWQC set for surface water), the levels that EPA and FDA have set for domesticated crops and animals with respect to pesticides found on or in such raw farm commodities might have utility to ARAR-decisionmaking in the Endangerment Assessment.

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<sup>1</sup>It should be noted that whether the AWQC values designated herein as potential ground water ARARs are appropriate for utilization as ARARs is a matter that warrants serious consideration during the course of Endangerment Assessment decisionmaking. Since the indicated AWQC values are predicated on human consumption both of water and aquatic organisms in that water, and ground water does not contain aquatic life, use of alternative values (such as the adjusted AWQC found in the 1986 Superfund Public Health Evaluation Manual) may well be more appropriate in connection with RMA ground water.

<sup>2</sup>AWQCs and MCLGs are identified here as potential ARARs only where they are set at a level that is greater than zero. CERCLA Section 121(d)(2), 42 U.S.C. § 9621(d)(2), provides that remedial action attain a level of control that at least attains MCLGs and AWQCs where such goals or criteria are relevant and appropriate under the circumstances of the release or threatened release. At this time, zero level MCLGs and AWQCs are not relevant and appropriate under the circumstances of the releases that have occurred On-Post at RMA because they can not be attained for the pertinent compounds through the best available technology. In contrast, non-zero AWQCs and MCLGs are identified because they may possibly be met through well-established or innovative existing technology and thus at least warrant consideration as potential ARARs in this context.

Accordingly, EPA's Tolerances for Pesticide Chemicals On or In Raw Agricultural Commodities (TPCRAC), 40 C.F.R. Part 180, and the FDA's TPFA have been identified. It should be noted that the designated pesticide tolerances are not the same as action limits. As EPA has previously explained, "[t]here are major differences between tolerances and action levels. A tolerance is set before the fact to cover residues which will result from legal and purposeful use of the pesticide. An action level is a more appropriate mechanism for situations involving residues which persist in the environment after the once-legal use of that pesticide has been halted." 51 Fed. Reg. 46666 (1986). Thus, while EPA's pesticide tolerance level information is provided here (along with FDA action levels) to aid ARAR decisionmaking, it is only during the course of ARAR selection that the relevance, if any, of these tolerance levels to the RMA cleanup will be determined.<sup>3</sup>

#### H. Potential State ARARs

In accordance with CERCLA Section 121, State statutes and regulations warrant consideration as potential ARARs only where they meet the three-part test of being: (i) promulgated; (ii) generally applicable; and (iii) more stringent than any

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<sup>3</sup>With respect to certain of the chemicals that do not have designated tolerance levels, it should be noted that EPA has revoked the pesticide tolerances for which related registered uses have been cancelled, EPA has recommended action levels to FDA to replace the existing tolerances and EPA has made recommendations to the FDA and the U.S. Department of Agriculture regarding existing action levels for commodities bearing residues for which tolerances have not been established. Among the pesticides for which EPA has revoked tolerances are: (i) DDT (51 Fed. Reg. 46658 (1986)); (ii) TDE (id.); (iii) DOE (id.); (iv) Aldrin (51 Fed. Reg. 46662 (1986)); (v) Dieldrin (id.); and (vi) Chlordane (51 Fed. Reg. 46665 (1986)).

Federal ARAR. CDH did not identify any potential currently promulgated chemical-specific ARARs in the comments which CDH submitted on two different occasions with respect to the previous draft of this Index, and the Army has been unable to identify any existing CDH regulations that satisfied CERCLA's criteria. Thus, no State chemical-specific ARARs are cited in the current edition of this volume.

I. Exclusion of Worker Protection Regulations from Volume

It should be noted that work protection regulations are not treated as chemical-specific ARARs for purposes of this document. These will be separately addressed for purposes of the final response action for the RMA On-Post Operable Unit in accordance with the EPA regulations adopted pursuant to 42 U.S.C. § 9651(f) (which provides that the NCP is to be amended by December 11, 1988, to provide procedures for the protection of the health and safety of employees involved in response actions) and the provisions of the OSHA interim final rule at Fed. Reg. 45654 (1986) (as this may be subsequently finalized).

**POTENTIAL CHEMICAL-SPECIFIC ARARS**

**FOR ON-POST OPERABLE UNIT, RMA**

POTENTIAL  
CHEMICAL-SPECIFIC ARARS  
FOR ON-POST OPERABLE UNIT  
ROCKY MOUNTAIN ARSENAL

1. PRIMARY NAME: Acetone (Dimethyl ketone)  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
  
2. PRIMARY NAME: Acetonitrile  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
  
3. PRIMARY NAME: Acetylene tetrachloride  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

4. PRIMARY NAME: Adamsite  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
5. PRIMARY NAME: Adhesive VI and VIII  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
6. PRIMARY NAME: Aerozine 50  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

7. **PRIMARY NAME:** Akton  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
8. **PRIMARY NAME:** Aldrin  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: Priority Group 1  
Air Analyte: Yes  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: (a) 40 C.F.R. § 129.100(a)(3) (TPES) -- 0.003 µg/l;  
(b) 45 Fed. Reg. 79325 (1980) (AWQC) -- 0.74 ng/l (10<sup>-3</sup>), 0.074 ng/l (10<sup>-6</sup>), 0.0074 ng/l (10<sup>-7</sup>) (Human Health).  
  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: (a) 40 C.F.R. § 129.100(a)(3) (TPES) -- 0.003 µg/l;  
(b) 45 Fed. Reg. 79325 (1980) (AWQC) -- 0.74 ng/l (10<sup>-3</sup>), 0.074 ng/l (10<sup>-6</sup>), 0.0074 ng/l (10<sup>-7</sup>) (Human Health);  
(c) 45 Fed. Reg. 79325 (1980) (AWQC) -- 3 µg/l (Aquatic Life).  
  
Biota RI Analyte: Yes  
Potential Biota ARAR: No

9. PRIMARY NAME: Allyl alcohol  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
10. PRIMARY NAME: Aluminum hydroxide  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: Yes (Aluminum)  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes (Aluminum)  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
11. PRIMARY NAME: alpha-Amino-iso-butyronitrile  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No



12. PRIMARY NAME: Ammonia  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: Priority Group 3  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

13. PRIMARY NAME: Ammonium chloride  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

14. PRIMARY NAME: Ammonium nitrate  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

15. PRIMARY NAME: Ammonium sulfate  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
16. PRIMARY NAME: Ammonium sulfite  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
17. PRIMARY NAME: Antimony  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: 45 Fed. Reg. 79325 (1980)  
(AWQC) -- 146 µg/l (Human Health)  
  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: (a) 45 Fed. Reg. 79325 (1980)  
(AWQC) -- 146 µg/l (Human Health);  
(b) 45 Fed. Reg. 79325 (1980)  
(AWQC) -- 1,600 µg/l (Aquatic Life).  
  
Biota RI Analyte: No  
Potential Biota ARAR: No

18. PRIMARY NAME: Antimony (III) chloride  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: 45 Fed. Reg. 79325 (1980)  
(AWQC-Antimony) (Human Health)  
-- 146 µg/l

Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: (a) 45 Fed. Reg. 79325 (1980)  
(AWQC-Antimony) (Human Health) -- 146 µg/l;  
(b) 45 Fed. Reg. 79325 (1980)  
(AWQC-Antimony) -- 1,600 µg/l (Aquatic Life).

Biota RI Analyte: No  
Potential Biota ARAR: No

19. PRIMARY NAME: Arsenic  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: Priority Group 1  
Air Analyte: Yes  
Potential Air ARAR: (a) 40 C.F.R. § 61.162(a)(1) (NESHAP)  
-- uncontrolled total arsenic  
emissions from existing glass  
melting furnaces shall be less than  
2.5 Mg per year;  
(b) 40 C.F.R. § 61.162(b)(1) (NESHAP)  
-- uncontrolled total arsenic  
emissions from new or modified  
glass melting furnaces shall be  
less than 0.4 Mg per year.

Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: (a) 40 C.F.R. § 141.11(b)  
(NPDW -- MCL) -- 50 µg/l;  
(b) 40 C.F.R. § 264.94(a)(2)  
(RCRA) -- 50 µg/l;  
(c) 45 Fed. Reg. 79325-79326  
(1980) (AWQC) -- 22 ng/l  
(10<sup>-5</sup>), 2.2 ng/l (10<sup>-6</sup>),  
0.22 ng/l (10<sup>-7</sup>) (Human  
Health).

Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: (a) 40 C.F.R. § 141.11(b)  
(NPDW -- MCL) -- 50 µg/l;  
(b) 40 C.F.R. § 264.94(a)(2)  
(RCRA) -- 50 µg/l;  
(c) 45 Fed. Reg. 79325-79326  
(1980) (AWQC) -- 22 ng/l  
(10<sup>-5</sup>), 2.2 ng/l (10<sup>-6</sup>),  
0.22 ng/l (10<sup>-7</sup>) (Human  
Health);  
(d) 45 Fed. Reg. 79325 (1980)  
(AWQC) -- 440 µg/l  
(Aquatic Life).

Biota RI Analyte: Yes  
Potential Biota ARAR: No

20. PRIMARY NAME: Arsenic chloride (AT)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: Yes (Arsenic)  
Potential Air ARAR: (a) 40 C.F.R. § 61.162(a)(1) (NESHAP)  
(Arsenic) -- uncontrolled total  
arsenic emissions from existing  
glass melting furnaces shall be  
less than 2.5 Mg per year;  
(b) 40 C.F.R. § 61.162(b)(1) (NESHAP)  
(Arsenic) -- uncontrolled total  
arsenic emissions from new or  
modified glass melting furnaces  
shall be less than 0.4 Mg per year.

Ground Water RI Analyte: Yes (Arsenic)

Potential Ground Water ARAR: (a) (Arsenic) 40 C.F.R. §  
141.11(b) (NPDW -- MCL) --  
50 µg/l;  
(b) (Arsenic) 40 C.F.R. §  
264.94(a)(2) (RCRA) -- 50  
µg/l;  
(c) (Arsenic) 45 Fed. Reg.  
79325-79326 (1980) (AWQC)  
-- 22 ng/l ( $10^{-5}$ ), 2.2  
ng/l ( $10^{-6}$ ), 0.22 ng/l  
( $10^{-7}$ ) (Human Health).

Soil RI Analyte: Yes (Arsenic)

Soil EA Analyte: Yes (Arsenic)

Potential Soil ARAR: No

Surface Water RI Analyte: Yes (Arsenic)

Potential Surface Water ARAR: (a) (Arsenic) 40 C.F.R. §  
141.11(b) (NPDW --MCL) --  
50 µg/l;  
(b) (Arsenic) 40 C.F.R. §  
264.94(a)(2) (RCRA) -- 50  
µg/l;  
(c) (Arsenic) 45 Fed. Reg.  
79325-79326 (1980) (AWQC)  
-- 22 ng/l ( $10^{-5}$ ), 2.2  
ng/l ( $10^{-6}$ ), 0.22 ng/l  
( $10^{-7}$ ) (Human Health);  
(d) (Arsenic) 45 Fed. Reg.  
79325 (1980) (AWQC) --  
440 µg/l (Aquatic Life).

Biota RI Analyte: No

Potential Biota ARAR: No

21. PRIMARY NAME: Arsenic trioxide (ATO)  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: Yes (Arsenic)  
Potential Air ARAR: (a) (Arsenic) 40 C.F.R. § 61.162(a)(1)  
(NESHAP) -- uncontrolled total  
arsenic emissions from existing  
glass melting furnaces shall be  
less than 2.5 Mg per year;  
(b) (Arsenic) 40 C.F.R. § 61.162(b)(1)  
(NESHAP) -- uncontrolled total  
arsenic emissions from new or  
modified glass melting furnaces  
shall be less than 0.4 Mg per year.

Ground Water RI Analyte: Yes (Arsenic)

Potential Ground Water ARAR: (a) (Arsenic) 40 C.F.R. §  
141.11(b) (NPDW -- MCL)  
-- 50 µg/l;  
(b) (Arsenic) 40 C.F.R. §  
264.94(a)(2) (RCRA) -- 50  
µg/l;  
(c) (Arsenic) 45 Fed. Reg.  
79325-79326 (1980) (AWQC)  
-- 22 ng/l ( $10^{-5}$ ), 2.2  
ng/l ( $10^{-6}$ ), 0.22 ng/l  
( $10^{-7}$ ) (Human Health);

Soil RI Analyte: Yes (Arsenic)

Soil EA Analyte: Yes (Arsenic)

Potential Soil ARAR: No

Surface Water RI Analyte: Yes (Arsenic)

Potential Surface Water ARAR: (a) (Arsenic) 40 C.F.R. §  
141.11(b) (NPDW -- MCL)  
-- 50 µg/l;  
(b) (Arsenic) 40 C.F.R. §  
264.94(a)(2) (RCRA) -- 50  
µg/l;  
(c) (Arsenic) 45 Fed. Reg.  
79325-79326 (1980) (AWQC)  
-- 22 ng/l ( $10^{-5}$ ), 2.2  
ng/l ( $10^{-6}$ ), 0.22 ng/l  
( $10^{-7}$ ) (Human Health);  
(d) (Arsenic) 45 Fed. Reg.  
79325 (1980) (AWQC) --  
440 µg/l (Aquatic Life).

Biota RI Analyte: No

Potential Biota ARAR: No

22. PRIMARY NAME: Atrazine  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: Yes  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: 40 C.F.R. § 180.220(a) (TPCRAC) --  
tolerances for residues in raw  
agricultural commodities range from  
a high of 5 parts per million  
(e.g., corn fodder and forage) to a  
low of 0.02 parts per million  
(e.g., meat from cattle, horses,  
hogs, poultry and sheep).
23. PRIMARY NAME: 2H-Azepin-2-one, hexahydro  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
24. PRIMARY NAME: Azodrin  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

25. **PRIMARY NAME:** Barium  
**CERCLA Hazardous Substance:** No  
**Ranking on ATSDR Priority List:** No  
**Air Analyte:** No  
**Potential Air ARAR:** No  
**Ground Water RI Analyte:** No  
**Potential Ground Water ARAR:** (a) 40 C.F.R. § 141.11(b)  
(NPDW -- MCL) -- 1000  
µg/l;  
(b) 40 C.F.R. § 264.94(a)(2)  
(RCRA) -- 1000 µg/l.
- Soil RI Analyte:** No  
**Soil EA Analyte:** No  
**Potential Soil ARAR:** No  
**Surface Water RI Analyte:** No  
**Potential Surface Water ARAR:** (a) 40 C.F.R. § 141.11(b)  
(NPDW -- MCL) -- 1000  
µg/l;  
(b) 40 C.F.R. § 264.94(a)(2)  
(RCRA) -- 1000 µg/l.
- Biota RI Analyte:** No  
**Potential Biota ARAR:** No
26. **PRIMARY NAME:** Benzene  
**CERCLA Hazardous Substance:** Yes  
**Ranking on ATSDR Priority List:** Priority Group 1  
**Air Analyte:** Yes  
**Potential Air ARAR:** No  
**Ground Water RI Analyte:** No  
**Potential Ground Water ARAR:** (a) 40 C.F.R. § 141.61(a), 52  
Fed. Reg. 25716 (1987)  
(effective Jan. 9, 1989)  
(NPDW -- MCL) -- 5 µg/l;  
(b) 45 Fed. Reg. 79326 (1980)  
(AWQC) -- 6.6 µg/l  
( $10^{-3}$ ), 0.66 ( $10^{-6}$ ), 0.066  
( $10^{-7}$ ) (Human Health).
- Soil RI Analyte:** Yes  
**Soil EA Analyte:** Yes  
**Potential Soil ARAR:** No  
**Surface Water RI Analyte:** Yes  
**Potential Surface Water ARAR:** (a) 40 C.F.R. § 141.61(a); 52  
Fed. Reg. 25716 (1987)  
(effective Jan. 9, 1989)  
(NPDW -- MCL) -- 5 µg/l;  
(b) 45 Fed. Reg. 79326 (1980)  
(AWQC) -- 6.6 µg/l  
( $10^{-3}$ ), 0.66 ( $10^{-6}$ ), 0.066  
( $10^{-7}$ ) (Human Health);  
(c) 45 Fed. Reg. 79326 (1980)  
-- 5,300 µg/l (Aquatic  
Life).
- Biota RI Analyte:** No  
**Potential Biota ARAR:** No



27. PRIMARY NAME: Benzothiazole  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
28. PRIMARY NAME: Benzoyl peroxide  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
29. PRIMARY NAME: Bicyclo (2.2.1) hepta-2,5-diene  
(Bicyclopentadiene, BCHD)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: Yes  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: No  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

30. PRIMARY NAME: Biscarboxymethyl sulfone  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
31. PRIMARY NAME: Biscarboxymethyl sulfoxide (2,2-Sulfonylbisacetic acid)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
32. PRIMARY NAME: Bis-(2-chlorovinyl) chloroarsine  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

33. PRIMARY NAME: 2-[Bis(1-methylethyl)amino]-ethanethiol  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
34. PRIMARY NAME: Bisphenol A  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
35. PRIMARY NAME: Bladex  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

36. PRIMARY NAME: Bromic acid, potassium salt (Potassium bromate)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
37. PRIMARY NAME: Bromide  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
38. PRIMARY NAME: alpha-Bromoallyl alcohol  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

39. PRIMARY NAME: 3-Bromo-1-chloro-1-propene  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

40. PRIMARY NAME: 2-Butoxyethanol  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

41. PRIMARY NAME: Cadmium  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: Priority Group 1  
Air Analyte: Yes  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: (a) 40 C.F.R. § 141.11(b)  
(NPDW -- MCL) -- 10 µg/l;  
(b) 40 C.F.R. § 264.94(a)(2)  
(RCRA) -- 10 µg/l;  
(c) 45 Fed. Reg. 79327 (1980)  
(AWQC) -- 10 µg/l (Human Health).  
  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: (a) 40 C.F.R. § 141.11(b)  
(NPDW -- MCL) -- 10 µg/l;  
(b) 40 C.F.R. § 264.94(a)(2)  
(RCRA) -- 10 µg/l;  
(c) 45 Fed. Reg. 79327 (1980)  
(AWQC) -- 10 µg/l (Human Health);  
(d) 45 Fed. Reg. 79326-79327  
(1980) (AWQC) -- 24 hour average to be determined by  
e (1.05 [In(hardness)]-8.73), but not to exceed value of  
e (1.05 [In(hardness)]-3.73) at any one time (Aquatic Life).  
  
Biota RI Analyte: No  
Potential Biota ARAR: No
42. PRIMARY NAME: Calcium  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

43. PRIMARY NAME: Calcium bromate (Bromic acid, calcium salt)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes (Calcium)  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes (Calcium)  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
44. PRIMARY NAME: Calcium carbide  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes (Calcium)  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes (Calcium)  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
45. PRIMARY NAME: Calcium chloride  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes (Calcium)  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes (Calcium)  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

46. PRIMARY NAME: Carbon tetrachloride (Perchloromethane, Tetrachloromethane)

CERCLA Hazardous Substance: Yes

Ranking on ATSDR Priority List: Priority Group 2

Air Analyte: Yes

Potential Air ARAR: No

Ground Water RI Analyte: Yes

Potential Ground Water ARAR: (a) 40 C.F.R. § 141.61(a), 42 Fed. Reg. 25716 (1987) (effective Jan. 9, 1989) (NPDW -- MCL) -- 5 µg/l;  
(b) 45 Fed. Reg. 79327 (1980) (AWQC) -- 4.0 µg/l ( $10^{-5}$ ), 0.40 µg/l ( $10^{-6}$ ), 0.04 µg/l ( $10^{-7}$ ) (Human Health).

Soil RI Analyte: Yes

Soil EA Analyte: Yes

Potential Soil ARAR: No

Surface Water RI Analyte: Yes

Potential Surface Water ARAR: (a) 40 C.F.R. § 141.61(a), 42 Fed. Reg. 25716 (1987) (effective Jan. 9, 1989) (NPDW -- MCL) -- 5 µg/l;  
(b) 45 Fed. Reg. 79327 (1980) (AWQC) -- 4.0 µg/l ( $10^{-5}$ ), 0.40 µg/l ( $10^{-6}$ ), 0.04 ( $10^{-7}$ ) (Human Health);  
(c) 45 Fed. Reg. 79327 (1980) (AWQC) -- 35,200 µg/l (Aquatic Life).

Biota RI Analyte: No

Potential Biota ARAR: No

47. PRIMARY NAME: 2(1'-Carboxyl-1'-methyl-ethyl-amino)-4,6-dichloro-s-triazine

CERCLA Hazardous Substance: No

Ranking on ATSDR Priority List: No

Air Analyte: No

Potential Air ARAR: No

Ground Water RI Analyte: No

Potential Ground Water ARAR: No

Soil RI Analyte: No

Soil EA Analyte: No

Potential Soil ARAR: No

Surface Water RI Analyte: No

Potential Surface Water ARAR: No

Biota RI Analyte: No

Potential Biota ARAR: No



48. PRIMARY NAME: Chloral hydrate  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
49. PRIMARY NAME: Chlorate ion  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
50. PRIMARY NAME: Chlordane  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: Priority Group 2  
Air Analyte: Yes  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: 45 Fed. Reg. 79327 (1980)  
(AWQC) -- 4.6 ng/l ( $10^{-5}$ ), 0.46  
ng/l ( $10^{-6}$ ), 0.046 ng/l ( $10^{-7}$ )  
(Human Health).  
  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: (a) 45 Fed. Reg. 79327 (1980)  
(AWQC) -- 4.6 ng/l  
( $10^{-5}$ ), 0.46 ng/l ( $10^{-6}$ ),  
0.046 ng/l ( $10^{-7}$ ) (Human  
Health);  
(b) 45 Fed. Reg. 79327 (1980)  
(AWQC) -- 24 hour average  
0.0043  $\mu$ g/l and 2.4  $\mu$ g/l  
at one time (Aquatic  
Life).  
  
Biota RI Analyte: No  
Potential Biota ARAR: No

51. PRIMARY NAME: Chlorfenvinphos (Supona insecticide)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: Yes  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
52. PRIMARY NAME: Chloride  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: No  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
53. PRIMARY NAME: Chlorinated paraffin (Chlorococane)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

CERCLA Hazardous Substance: NO

Ranking on ATSDR Priority List:

Priority Group 4

(2,4,6-

Trichlorophenol and

2,4-Dichlorophenol)

Air Analyte: No

Potential Air ARAR: No

Ground Water RI Analyte: No

Potential Ground Water ARAR:

- (a) 2,4,5-trichlorophenol --  
45 Fed. Reg. 79329 (1980)  
(AWQC) -- 2600 µg/l  
(Human Health);
- (b) 2,4,6-trichlorophenol --  
45 Fed. Reg. 79329 (1980)  
(AWQC) -- 12 µg/l ( $10^{-5}$ ),  
1.2 µg/l ( $10^{-6}$ ), 0.12 µg/l  
( $10^{-7}$ ) (Human Health);
- (c) Sufficient data was not  
available to derive AWQC  
toxicity levels for other  
compounds that would be  
protective of human  
health, 45 Fed. Reg.  
79329 (1980).

Soil RI Analyte: No

Soil EA Analyte: No

Potential Soil ARAR: No

Surface Water RI Analyte: No

Potential Surface Water ARAR:

- (a) 2,4,5-trichlorophenol --  
45 Fed. Reg. 79329 (1980)  
(AWQC) -- 2600 µg/l  
(Human Health);
- (b) 2,4,6-trichlorophenol --  
45 Fed. Reg. 79329 (1980)  
(AWQC) -- 12 µg/l ( $10^{-5}$ ),  
1.2 µg/l ( $10^{-6}$ ), 0.12 µg/l  
( $10^{-7}$ ) (Human Health);
- (c) Sufficient data was not  
available to derive AWQC  
toxicity levels for other  
compounds that would be  
protective of human  
health, 45 Fed. Reg.  
79329 (1980);
- (d) 4-chloro-3-methyphenol,  
45 Fed. Reg. 79329 (1980)  
(AWQC) -- 30 µg/l  
(Aquatic Life);
- (e) 2,4,6-trichlorophenol, 45  
Fed. Reg. 79329 (1980)  
(AWQC) -- 970 µg/l  
(Aquatic Life);
- (f) Other chlorinated  
phenols, 45 Fed. Reg.  
79329 (1980) (AWQC)  
500,000 µg/l (Aquatic  
Life).

Biota RI Analyte: No

Potential Biota ARAR: No

55. PRIMARY NAME: Chloroacetaldoxime  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
56. PRIMARY NAME: Chloroacetic acid (Monochloroacetic acid)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: No  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
57. PRIMARY NAME: Chloroacetoacetic acid  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

58. PRIMARY NAME: Chloroacetophenone  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
59. PRIMARY NAME: Chlorobenzene (Monochlorobenzene)  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: Priority Group 3  
Air Analyte: Yes  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: 45 Fed. Reg. 79327-79328  
(1980) (AWQC-  
Monochlorobenzene) -- 488 µg/l  
(Human Health)  
Soil RI Analyte: Yes (Benzene)  
Soil EA Analyte: Yes (Benzene)  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes (Benzene)  
Potential Surface Water ARAR: (a) 45 Fed. Reg. 79327-79328  
(1980) (AWQC-  
Monochlorobenzene) -- 488  
µg/l (Human Health);  
(b) 45 Fed. Reg. 79327 (1980)  
(AWQC) -- 50 µg/l (7.5  
days exposure) (Aquatic  
Life).  
Biota RI Analyte: No  
Potential Biota ARAR: No
60. PRIMARY NAME: 4-Chlorobenzenethiol  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

61. PRIMARY NAME: Chlorobromopropane  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
62. PRIMARY NAME: 4-Chloro-3,5-dinitrophenyl methyl sulfone  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

63. **PRIMARY NAME:** Chloroform (Trichloromethane)  
**CERCLA Hazardous Substance:** Yes  
**Ranking on ATSDR Priority List:** Priority Group 1  
**Air Analyte:** Yes  
**Potential Air ARAR:** No  
**Ground Water RI Analyte:** Yes  
**Potential Ground Water ARAR:** (a) 40 C.F.R. § 141.12 (NPDW -- MCL) -- 100 µg/l (Note this is the total combined limit for this and all other trihalomethanes);  
(b) 45 Fed. Reg. 79330 (1980) (AWQC) -- 1.9 µg/l ( $10^{-5}$ ), 0.19 µg/l ( $10^{-6}$ ), 0.019 µg/l ( $10^{-7}$ ) (Human Health).  
**Soil RI Analyte:** Yes  
**Soil EA Analyte:** Yes  
**Potential Soil ARAR:** No  
**Surface Water RI Analyte:** Yes  
**Potential Surface Water ARAR:** (a) 40 C.F.R. § 141.12 (NPDW -- MCL) -- 100 µg/l (Note this is the total combined limit for this and all other trihalomethanes);  
(b) 45 Fed. Reg. 79330 (1980) (AWQC) -- 1.9 µg/l ( $10^{-5}$ ), 0.19 µg/l ( $10^{-6}$ ), 0.019 µg/l ( $10^{-7}$ ) (Human Health);  
(c) 45 Fed. Reg. 79330 (1980) (AWQC) -- 1240 µg/l (Aquatic Life).  
**Biota RI Analyte:** No  
**Potential Biota ARAR:** No
64. **PRIMARY NAME:** 2-Chloroisophorone  
**CERCLA Hazardous Substance:** No  
**Ranking on ATSDR Priority List:** No  
**Air Analyte:** No  
**Potential Air ARAR:** No  
**Ground Water RI Analyte:** No  
**Potential Ground Water ARAR:** No  
**Soil RI Analyte:** No  
**Soil EA Analyte:** No  
**Potential Soil ARAR:** No  
**Surface Water RI Analyte:** No  
**Potential Surface Water ARAR:** No  
**Biota RI Analyte:** No  
**Potential Biota ARAR:** No

65. PRIMARY NAME: 2-Chloro-3-oxo-butanoic acid, methyl ester  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
66. PRIMARY NAME: p-Chlorophenyl methyl sulfide (CPMS, PCPMS)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: Yes  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: No  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: (2-Chlorophenol) 45 Fed. Reg.  
79330 (1980) (AWQC) -- 4380  
µg/l (Aquatic Life).  
  
Biota RI Analyte: No  
Potential Biota ARAR: No
67. PRIMARY NAME: p-Chlorophenyl methyl sulfone (CPMSO<sub>2</sub>,  
PCPMSO<sub>2</sub>)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: Yes  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: No  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: (2-Chlorophenol) 45 Fed. Reg.  
79330 (1980) (AWQC) -- 4380  
µg/l (Aquatic Life).  
  
Biota RI Analyte: No  
Potential Biota ARAR: No



68. PRIMARY NAME: p-Chlorophenyl methyl sulfoxide (CPMSO,  
PCPMSO)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: Yes  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: No  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: (2-Chlorophenol) 45 Fed. Reg.  
79330 (1980) (AWQC) -- 4380  
µg/l (Aquatic Life).

Biota RI Analyte: No  
Potential Biota ARAR: No

69. PRIMARY NAME: 2-Chlorovinylarsonic acid  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

70. PRIMARY NAME: Chromic acid  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

71. PRIMARY NAME: Chromium  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: Priority Group 1  
Air Analyte: Yes  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: (a) 40 C.F.R. § 141.11(b)  
(NPDW -- MCL) -- 50 µg/l;  
(b) 40 C.F.R. § 264.94(a)(2)  
(RCRA) -- 50 µg/l.  
  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: (a) 40 C.F.R. § 141.11(b)  
(NPDW -- MCL) -- 50 µg/l;  
(b) 40 C.F.R. § 264.94(a)(2)  
(RCRA) -- 50 µg/l.  
  
Biota RI Analyte: No  
Potential Biota ARAR: No
72. PRIMARY NAME: Chromium III  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: Yes (Chromium)  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes (Chromium)  
Potential Ground Water ARAR: 45 Fed. Reg. 79331 (1980)  
(AWQC) -- 0.170 µg/l (Human Health)  
  
Soil RI Analyte: Yes (Chromium)  
Soil EA Analyte: Yes (Chromium)  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes (Chromium)  
Potential Surface Water ARAR: (a) 45 Fed. Reg. 79331 (1980)  
(AWQC) -- 0.170 µg/l  
(Human Health);  
(b) 45 Fed. Reg. 79331 (1980)  
(AWQC) -- to be  
determined by  
e (1.08 [In(hard -  
ness)] + 3.48) (Aquatic  
Life.  
  
Biota RI Analyte: No  
Potential Biota ARAR: No

73. PRIMARY NAME: Chromium VI  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: Yes (Chromium)  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes (Chromium)  
Potential Ground Water ARAR: 45 Fed. Reg. 79331 (1980)  
(AWQC) -- 50 µg/l (Human Health)  
Soil RI Analyte: Yes (Chromium)  
Soil EA Analyte: Yes (Chromium)  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes (Chromium)  
Potential Surface Water ARAR: (a) 45 Fed. Reg. 79331 (1980)  
(AWQC) -- 50 µg/l (Human Health);  
(b) 45 Fed. Reg. 79331 (1980)  
(AWQC) -- 24 hour average to be determined by  
e (1.08 [ln(hardness)] + 3.48) (Aquatic Life).  
Biota RI Analyte: No  
Potential Biota ARAR: No

74. PRIMARY NAME: Copper

CERCLA Hazardous Substance: Yes

Ranking on ATSDR Priority List: Priority Group 3

Air Analyte: Yes

Potential Air ARAR: No

Ground Water RI Analyte: Yes

Potential Ground Water ARAR: 21 C.F.R. § 193.90 (TPFA) -- tolerance of 1 part per million for potable water for residues of copper resulting from the use as algicides or herbicides of basic copper carbonate (malachite), copper sulfate (see below), copper monoethandime, and copper to control aquatic plants in reservoirs, lakes, ponds, irrigation ditches and other potential sources of potable water.

Soil RI Analyte: Yes

Soil EA Analyte: Yes

Potential Soil ARAR: No

Surface Water RI Analyte: Yes

Potential Surface Water ARAR: (a) 21 C.F.R. § 193.90 (TPFA) -- tolerance of 1 part per million for potable water for residues of copper resulting from the use as algicides or herbicides of basic copper sulfate (and the other copper compounds cited in "Potential Ground Water ARAR" above) to control aquatic plants in reservoirs, lakes, ponds, irrigation ditches and other potential sources of potable water;

(b) 45 Fed. Reg. 79331 (1980) (AWQC) -- 24 hour average is 5.6 µg/l and concentration at any one time should not exceed 0.94 [In(hardness)]-1.23) (Aquatic Life).

Biota RI Analyte: No

Potential Biota ARAR: No

75. PRIMARY NAME: Copper sulfate  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: Yes (Copper)  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes (Copper)  
Potential Ground Water ARAR: 21 C.F.R. § 193.90 (TPFA) --  
tolerance of 1 part per  
million for potable water for  
residues of copper resulting  
from the use as algicides or  
herbicides of basic copper  
carbonate (malachite), copper  
sulfate (see below), copper  
monocethandime, and copper to  
control aquatic plants in  
reservoirs, lakes, ponds,  
irrigation ditches and other  
potential sources of potable  
water.

Soil RI Analyte: Yes (Copper)  
Soil EA Analyte: Yes (Copper)  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: (a) 21 C.F.R. § 193.90 (TPFA)  
-- tolerance of 1 part  
per million for potable  
water for residues of  
copper resulting from the  
use as algicides or  
herbicides of basic  
copper sulfate (and the  
other copper compounds  
cited in "Potential  
Ground Water ARAR" above)  
to control aquatic plants  
in reservoirs, lakes,  
ponds, irrigation ditches  
and other potential  
sources of potable water;  
(b) 45 Fed. Reg. 79331 (1980)  
(AWQC) -- 24 hour average  
is 5.6 µg/l and  
concentration at any one  
time should not exceed  
e (0.94 [In(hardness)]-  
1.23) (Aquatic Life).

Biota RI Analyte: No  
Potential Biota ARAR: No

76. PRIMARY NAME: Crotoxyphos (Ciodrin insecticide)

CERCLA Hazardous Substance: No

Ranking on ATSDR Priority List: No

Air Analyte: No

Potential Air ARAR: No

Ground Water RI Analyte: No

Potential Ground Water ARAR: No

Soil RI Analyte: No

Soil EA Analyte: No

Potential Soil ARAR: No

Surface Water RI Analyte: No

Potential Surface Water ARAR: No

Biota RI Analyte: No

Potential Biota ARAR: No

77. PRIMARY NAME: Cyanide

CERCLA Hazardous Substance: Yes

Ranking on ATSDR Priority List: Priority Group 1

Air Analyte: No

Potential Air ARAR: No

Ground Water RI Analyte: No

Potential Ground Water ARAR: 45 Fed. Reg. 79331 (1980)  
(AWQC) -- 200 µg/l (Human Health)

Soil RI Analyte: No

Soil EA Analyte: No

Potential Soil ARAR: No

Surface Water RI Analyte: No

Potential Surface Water ARAR: (a) 45 Fed. Reg. 79331 (1980)  
(AWQC) -- 200 µg/l (Human Health);

(b) 45 Fed. Reg. 79331 (1980)  
(AWQC) -- 24 hour average  
is 3.5 µg/l (not to  
exceed 52 µg/l at any  
time) (Aquatic Life).

Biota RI Analyte: No

Potential Biota ARAR: No

78. PRIMARY NAME: Cyanogen chloride  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: (Cyanide) 45 Fed. Reg. 79331  
(1980) (AWQC) -- 200 µg/l  
(Human Health)  
  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: (a) (Cyanide) 45 Fed. Reg.  
79331 (1980) (AWQC) --  
200 µg/l (Human Health);  
(b) (Cyanide) 45 Fed. Reg.  
79331 (1980) (AWQC) -- 24  
hour average is 3.5 µg/l  
(not to exceed 52 µg/l at  
any time) (Aquatic Life).  
  
Biota RI Analyte: No  
Potential Biota ARAR: No
79. PRIMARY NAME: 2(1'-Cyano-1'-methylethylamino)-4, 6-  
dichloro-s-triazine  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
80. PRIMARY NAME: Cyclohexanone  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

81. PRIMARY NAME: 2-Cyclohexen-1-one  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
82. PRIMARY NAME: 1,3-Cyclopentadiene (CPD)  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
83. PRIMARY NAME: D-D soil fumigant (Nemafer)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No



84. **PRIMARY NAME:** DDE (p, p'-Dichlorodiphenylethene)  
**CERCLA Hazardous Substance:** Yes  
**Ranking on ATSDR Priority List:** Priority Group 2  
**Air Analyte:** Yes  
**Potential Air ARAR:** No  
**Ground Water RI Analyte:** Yes  
**Potential Ground Water ARAR:** 40 C.F.R. § 129.101(a)(3)  
(TPES) -- 0.001 µg/l  
  
**Soil RI Analyte:** Yes  
**Soil EA Analyte:** Yes  
**Potential Soil ARAR:** No  
**Surface Water RI Analyte:** Yes  
**Potential Surface Water ARAR:** (a) 40 C.F.R. § 129.101(a)(3)  
(TPES) -- 0.001 µg/l;  
(b) 45 Fed. Reg. 79331 (1980)  
(AWQC) -- 1,050 µg/l  
(Aquatic Life).  
  
**Biota RI Analyte:** Yes  
**Potential Biota ARAR:** No
85. **PRIMARY NAME:** DDT (p,p'-Dichlorodiphenyltrichloroethane)  
**CERCLA Hazardous Substance:** Yes  
**Ranking on ATSDR Priority List:** Priority Group 2  
**Air Analyte:** Yes  
**Potential Air ARAR:** No  
**Ground Water RI Analyte:** Yes  
**Potential Ground Water ARAR:** (a) 40 C.F.R. § 129.101(a)(3)  
(TPES) -- 10 µg/l;  
(b) 45 Fed. Reg. 79332 (1980)  
(AWQC) -- 0.24 ng/l  
(10<sup>-3</sup>), 0.024 ng/l (10<sup>-6</sup>),  
0.0024 ng/l (10<sup>-7</sup>) (Human  
Health).  
  
**Soil RI Analyte:** Yes  
**Soil EA Analyte:** Yes  
**Potential Soil ARAR:** No  
**Surface Water RI Analyte:** Yes  
**Potential Surface Water ARAR:** (a) 40 C.F.R. § 129.101(a)(3)  
(TPES) -- 10 µg/l;  
(b) 45 Fed. Reg. 79332 (1980)  
(AWQC) -- 0.24 ng/l  
(10<sup>-3</sup>), 0.024 ng/l (10<sup>-6</sup>),  
0.0024 ng/l (10<sup>-7</sup>) (Human  
Health);  
(c) 45 Fed. Reg. 79331 (1980)  
(AWQC) -- 24 hour average  
is 0.0010 µg/l and 1.1  
µg/l at any one time  
(Aquatic Life).  
  
**Biota RI Analyte:** Yes  
**Potential Biota ARAR:** No

86. PRIMARY NAME: DDVP (Vapona insecticide)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: Priority Group 2  
Air Analyte: Yes  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
87. PRIMARY NAME: 1,2-Dibromo-3-chloropropane (DBCP, Nemagon, Dibromochloropropane)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: Yes  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: No  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: 21 C.F.R. § 193.250(a) (TPFA) --  
When food additive is present as a result of fumigation in addition to the authorized use of this nematocide, the total residues of inorganic bromides shall not exceed the following: (i) 400 parts per million in or on dried eggs and processed herbs and spices;...(iii) 250 parts per million in or on concentrated tomato products and dried figs; and (iv) 125 parts per million in or on processed foods other than those listed above.

88. PRIMARY NAME: Dibromodichloroethene  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
89. PRIMARY NAME: 1,1 Dibromoethane  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR:  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
90. PRIMARY NAME: 2,6-Di-tert-butyl-p-cresol (Ionol)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

91. PRIMARY NAME: 2,2-Dichloroacetaldehyde  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

92. PRIMARY NAME: 2,2-Dichloroacetoacetic acid  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

93. **PRIMARY NAME:** p-Dichlorobenzene (1,4-Dichlorobenzene)  
**CERCLA Hazardous Substance:** Yes  
**Ranking on ATSDR Priority List:** Priority Group 1  
**Air Analyte:** No  
**Potential Air ARAR:** No  
**Ground Water RI Analyte:** No  
**Potential Ground Water ARAR:** (a) 40 C.F.R. § 141.50(b)  
(NPDW -- MCLG) -- 750  
µg/l;  
(b) 45 Fed. Reg. 79332 (1980)  
(AWQC) -- 400 µg/l (Human  
Health)  
**Soil RI Analyte:** No  
**Soil EA Analyte:** No  
**Potential Soil ARAR:** No  
**Surface Water RI Analyte:** No  
**Potential Surface Water ARAR:** (a) 40 C.F.R. § 141.50(b)  
(NPDW -- MCLG) -- 750  
µg/l;  
(b) 45 Fed. Reg. 79332 (1980)  
(AWQC) -- 400 µg/l (Human  
Health);  
(c) 45 Fed. Reg. 79332 (1980)  
(AWQC) -- 763 µg/l  
(Aquatic Life).  
**Biota RI Analyte:** No  
**Potential Biota ARAR:** No
94. **PRIMARY NAME:** 2,2-Dichloro-1-(2,4-dichlorophenyl)-ethanone  
**CERCLA Hazardous Substance:** No  
**Ranking on ATSDR Priority List:** No  
**Air Analyte:** No  
**Potential Air ARAR:** No  
**Ground Water RI Analyte:** No  
**Potential Ground Water ARAR:** No  
**Soil RI Analyte:** No  
**Soil EA Analyte:** No  
**Potential Soil ARAR:** No  
**Surface Water RI Analyte:** No  
**Potential Surface Water ARAR:** No  
**Biota RI Analyte:** No  
**Potential Biota ARAR:** No

95. PRIMARY NAME: 1,1-Dichloroethane  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: Priority Group 3  
Air Analyte: Yes  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: No  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
96. PRIMARY NAME: 1,2-Dichloroethane  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: Priority Group 2  
Air Analyte: Yes  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: 40 C.F.R. § 141.61(a) (NPDW --  
MCL); 52 Fed. Reg. 25716  
(1987) (effective Jan. 9,  
1989) -- 0.5 µg/l  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: 40 C.F.R. § 141.61(a); 52 Fed.  
Reg. 25716 (1987) (effective  
Jan 9, 1989) -- 0.5 µg/l  
Biota RI Analyte: No  
Potential Biota ARAR: No

97. PRIMARY NAME: 1,1-Dichloroethylene  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: (a) 40 C.F.R. § 141.61(a), 52  
Fed. Reg. 25716 (1987)  
(effective Jan. 9, 1989)  
(NPDW -- MCL) -- 7 µg/l;  
(b) 40 C.F.R. § 141.50(b)  
(NPDW -- MCLG) -- 7 µg/l;  
(c) 45 Fed. Reg. 79332 (1980)  
(AWQC) -- 0.33 µg/l  
(10<sup>-5</sup>), 0.033 µg/l (10<sup>-6</sup>),  
0.0033 µg/l (10<sup>-7</sup>) (Human  
Health).  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: (a) 40 C.F.R. § 141.61(a), 52  
Fed. Reg. 25716 (1987)  
(effective Jan 9, 1989)  
(NPDW -- MCL) -- 7 µg/l;  
(b) 40 C.F.R. § 141.50(b)  
(NPDW -- MCLG) -- 7 µg/l;  
(c) 45 Fed. Reg. 79332 (1980)  
(AWQC) -- 0.33 µg/l  
(10<sup>-5</sup>), 0.033 µg/l (10<sup>-6</sup>),  
0.0033 µg/l (10<sup>-7</sup>) (Human  
Health);  
(d) 45 Fed. Reg. 79332 (1980)  
(AWQC) -- 11,600 µg/l  
(Aquatic Life).  
Biota RI Analyte: No  
Potential Biota ARAR: No

98. PRIMARY NAME: 1,2-Dichloroethylene  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: Yes  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: (a) 40 C.F.R. § 141.61(a), 52  
Fed. Reg. 25716 (1987)  
(effective Jan 9, 1989)  
(NPDW -- MCL) -- 7 µg/l;  
(b) 45 Fed. Reg. 79332 (1980)  
(AWQC) -- 0.33 µg/l  
(10<sup>-5</sup>), 0.033 µg/l (10<sup>-6</sup>),  
0.0033 µg/l (10<sup>-7</sup>) (Human  
Health);

Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: (a) 40 C.F.R. § 141.61(a), 52  
Fed. Reg. 25716 (1987)  
(effective Jan 9, 1989)  
(NPDW -- MCL) -- 7 µg/l;  
(b) 45 Fed. Reg. 79332 (1980)  
(AWQC) -- 0.33 µg/l  
(10<sup>-5</sup>), 0.033 µg/l (10<sup>-6</sup>),  
0.0033 µg/l (10<sup>-7</sup>) (Human  
Health);  
(c) 45 Fed. Reg. 79332 (1980)  
(AWQC) -- 11,600 µg/l  
(Aquatic Life).

Biota RI Analyte: No  
Potential Biota ARAR: No

99. PRIMARY NAME: 3,4-Dichloro-5-nitrophenyl methyl sulfone  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No



100. PRIMARY NAME: 1,2-Dichloropropane  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: Priority Group 2  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: 45 Fed. Reg. 79333 (1980)  
(AWQC) 5700 µg/l (Aquatic Life).  
  
Biota RI Analyte: No  
Potential Biota ARAR: No
101. PRIMARY NAME: cis-1,3-Dichloropropene  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: (a) 45 Fed. Reg. 79333 (1980)  
(AWQC) -- 87 µg/l (Human Health);  
(b) 45 Fed. Reg. 79333 (1980)  
(AWQC) -- 244 µg/l (Aquatic Life).  
  
Biota RI Analyte: No  
Potential Biota ARAR: No
102. PRIMARY NAME: Dicrotophos  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: Priority Group 1  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

103. PRIMARY NAME: Dicyclopentadiene (DCPD)

CERCLA Hazardous Substance: No

Ranking on ATSDR Priority List: No

Air Analyte: Yes

Potential Air ARAR: No

Ground Water RI Analyte: Yes

Potential Ground Water ARAR: No

Soil RI Analyte: Yes

Soil EA Analyte: Yes

Potential Soil ARAR: No

Surface Water RI Analyte: Yes

Potential Surface Water ARAR: No

Biota RI Analyte: No

Potential Biota ARAR: No

104. PRIMARY NAME: Dieldrin

CERCLA Hazardous Substance: Yes

Ranking on ATSDR Priority List: Priority Group 1

Air Analyte: Yes

Potential Air ARAR: No

Ground Water RI Analyte: Yes

Potential Ground Water ARAR: (a) 40 C.F.R. § 129.100(a)(3)  
(TPES) -- 0.12 µg/l;

(b) 45 Fed. Reg. 79325 (1980)  
(AWQC) -- 0.71 ng/l  
(10<sup>-3</sup>), 0.071 ng/l (10<sup>-6</sup>),  
0.0071 ng/l (10<sup>-7</sup>) (Human  
Health).

Soil RI Analyte: Yes

Soil EA Analyte: Yes

Potential Soil ARAR: No

Surface Water RI Analyte: Yes

Potential Surface Water ARAR: (a) 40 C.F.R. § 129.100(a)(3)  
(TPES) -- 0.12 µg/l;

(b) 45 Fed. Reg. 79325 (1980)  
(AWQC) -- 0.71 ng/l  
(10<sup>-3</sup>), 0.071 ng/l (10<sup>-6</sup>),  
0.0071 ng/l (10<sup>-7</sup>) (Human  
Health);

(c) 45 Fed. Reg. 79325 (1980)  
(AWQC) -- 24 hour average  
0.0019 µg/l and  
concentration of 2.5 µg/l  
at any one time (Aquatic  
Life).

Biota RI Analyte: Yes

Potential Biota ARAR: No

105. PRIMARY NAME: Diethyldimethyldiphosphonate  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

106. PRIMARY NAME: 0,0-Diethylphosphorochlorodithioate  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

107. PRIMARY NAME: 0,0-Diethyl thionophosphonate  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

108. PRIMARY NAME: 2,4-Dihydroxy-2-methyl pentane (Hexylene glycol)

CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

109. PRIMARY NAME: S-Diisopropylaminoethyl-methyphosphonothioate

CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

110. PRIMARY NAME: 2-(Diisopropylamino)-n-ethyl sulfonate

CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

111. PRIMARY NAME: Diisopropyldimethyl diphosphonate  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
112. PRIMARY NAME: N,N-Diisopropylethanolamine  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
113. PRIMARY NAME: Diisopropyl methyl phosphonate (DIMP,  
Diisopropylmethylphosphonate)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: Yes  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: No  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

114. PRIMARY NAME: Dimethanonaphthalene  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
115. PRIMARY NAME: N,N-Dimethylacetoacetamide (N,N-Dimethyl-3-oxo-butamamide)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
116. PRIMARY NAME: Dimethyl arsenic acid (Cacodylic acid)  
CERCLA Hazardous Substance: Yes (see Cacodylic acid)  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: 40 C.F.R. § 180.311 (TPCRAC) --  
tolerances are: (i) 2.8 parts per  
million in or on cottonseed; (ii)  
1.4 parts per million in the kidney  
and liver of cattle; (iii) 0.7  
parts per million in meat, fat, and  
meat by-products of cattle (except  
kidney and liver).

117. PRIMARY NAME: Dimethylchloroacetoacetamide  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
118. PRIMARY NAME: N,N-Dimethyl-2,2-dichloroacetoacetamide  
(DMACC)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
119. PRIMARY NAME: Dimethyldisulfide (Methyl disulfide)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: Yes  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: No  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

120. PRIMARY NAME: 1,1-Dimethylhydrazine (Unsymmetrical dimethylhydrazine, UDMH)  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
121. PRIMARY NAME: Dimethylmercury salts  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
122. PRIMARY NAME: Dimethyl methylphosphonate (DMMP)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: Yes  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: No  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No



123. PRIMARY NAME: Dimethylnitrosamine (DMNA)  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: Yes  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
124. PRIMARY NAME: Dimethyl phosphate (DMP)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
125. PRIMARY NAME: 0,0-Dimethylphosphorochlorodithioate (ETAC)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

126. PRIMARY NAME: 1,3-Dimethylurea (Dimethylurea, DMU)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
127. PRIMARY NAME: Dipiperazine  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
128. PRIMARY NAME: Dipropylamine  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

129. PRIMARY NAME: Di-n-propylnitrosamine  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: Yes  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

130. PRIMARY NAME: 1,4-Dithiane (DITH)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: Yes  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: No  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

131. PRIMARY NAME: Endrin

CERCLA Hazardous Substance: Yes

Ranking on ATSDR Priority List: Priority Group 3

Air Analyte: Yes

Potential Air ARAR: No

Ground Water RI Analyte: Yes

Potential Ground Water ARAR: (a) 40 C.F.R. § 141.12 (NPDW  
-- MCL) -- 0.2 µg/l;  
(b) 40 C.F.R. § 264.94(a)(2)  
(RCRA) -- 0.2 µg/l;  
(c) 45 Fed. Reg. 79334 (1980)  
(AWQC) -- 1 µg/l (Human  
Health).

Soil RI Analyte: Yes

Soil EA Analyte: Yes

Potential Soil ARAR: No

Surface Water RI Analyte: Yes

Potential Surface Water ARAR: (a) 40 C.F.R. § 141.12 (NPDW  
-- MCL) -- 0.2 µg/l;  
(b) 40 C.F.R. § 264.94(a)(2)  
(RCRA) -- 0.2 µg/l;  
(c) 45 Fed. Reg. 79334 (1980)  
(AWQC) -- 1 µg/l (Human  
Health);  
(d) 45 Fed. Reg. 79334 (1980)  
(AWQC) -- 24 hour average  
0.0023 µg/l and  
concentration not to  
exceed 0.18 µg/l at any  
time (Aquatic Life).

Biota RI Analyte: Yes

Potential Biota ARAR: 40 C.F.R. § 180.131 (TPCRAC) --  
zero parts per million tolerances  
for residues in sugarbeets,  
sugarbeet tops, broccoli, brussels  
sprouts, cabbage, cauliflower,  
cottonseed, cucumbers, eggplant,  
peppers, potatoes, summer squash  
and tomatoes.

132. PRIMARY NAME: Ethanamine

CERCLA Hazardous Substance: Yes

Ranking on ATSDR Priority List: No

Air Analyte: No

Potential Air ARAR: No

Ground Water RI Analyte: No

Potential Ground Water ARAR: No

Soil RI Analyte: No

Soil EA Analyte: No

Potential Soil ARAR: No

Surface Water RI Analyte: No

Potential Surface Water ARAR: No

Biota RI Analyte: No

Potential Biota ARAR: No

133. PRIMARY NAME: Ethyl benzene (Ethylbenzene)  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: Priority Group 4  
Air Analyte: Yes  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: 45 Fed. Reg. 79334 (1980)  
(AWQC) -- 1400 µg/l  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: (a) 45 Fed. Reg. 79334 (1980)  
(AWQC) -- 1400 µg/l;  
(b) 45 Fed. Reg. 79334 (1980)  
(AWQC) -- 32,000 µg/l  
(Aquatic Life).  
Biota RI Analyte: No  
Potential Biota ARAR: No
134. PRIMARY NAME: Ethylmethyl phosphonate  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
135. PRIMARY NAME: O-Ethyl methyl phosphonothioate  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

136. PRIMARY NAME: Ethyl parathion (Parathion)  
CERCLA Hazardous Substance: Yes (see Parathion)  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: (Parathion) 40 C.F.R. § 180.121(a)  
(TPCRAC) -- Tolerances for  
parathion in raw agricultural  
commodities range from a high of 3  
parts per million (sorghum fodder  
and forage) to 0.75 parts per  
million (cottonseed), with most  
listed commodities at 1 part per  
million (e.g. grass, apples,  
gooseberries, lettuce,  
strawberries, tomatoes, wheat).

137. PRIMARY NAME: Fenvalerate (Pydrin insecticide)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

138. PRIMARY NAME: Fluoride  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: (a) 40 C.F.R. § 141.11(c)  
(NPDW -- MCL) -- 4000  
µg/l;  
(b) 40 C.F.R. § 141.62(b)  
(NPDW -- MCL) -- 4000  
µg/l;  
(c) 40 C.F.R. § 141.50(b)  
(NPDW -- MCLG) -- 4000  
µg/l.  
  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: (a) 40 C.F.R. § 141.11(c)  
(NPDW -- MCL) -- 4000  
µg/l;  
(b) 40 C.F.R. § 141.62(b)  
(NPDW -- MCL) -- 4000  
µg/l;  
(c) 40 C.F.R. § 141.50(b)  
(NPDW -- MCLG) -- 4000  
µg/l.  
  
Biota RI Analyte: No  
Potential Biota ARAR: No

139. PRIMARY NAME: Fluoroacetic acid  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

140. PRIMARY NAME: Fluorathene  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: Priority Group 4  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: 45 Fed. Reg. 79334 (1980)  
(AWQC) -- 42 µg/l (Human Health)  
  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: (a) 45 Fed. Reg. 79334 (1980)  
(AWQC) -- 42 µg/l (Human Health);  
(b) 45 Fed. Reg. 79334 (1980)  
(AWQC) -- 3980 µg/l (Aquatic Life).  
  
Biota RI Analyte: No  
Potential Biota ARAR: No
141. PRIMARY NAME: Formaldehyde  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
142. PRIMARY NAME: Freon 113  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No



143. PRIMARY NAME: Fuel Oil #6  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
144. PRIMARY NAME: Gardona  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
145. PRIMARY NAME: Gear Oil additive 399  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

146. PRIMARY NAME: Glyceryl mono-oleate  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
147. PRIMARY NAME: GOOP (Mg dust, oil/asphalt)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
148. PRIMARY NAME: HCCPD impurities  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: Yes  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

149. PRIMARY NAME: Heptachlor

CERCLA Hazardous Substance: Yes

Ranking on ATSDR Priority List: Priority Group 1

Air Analyte: No

Potential Air ARAR: No

Ground Water RI Analyte: No

Potential Ground Water ARAR: 45 Fed. Reg. 79335 (1980)  
(AWQC) -- 2.78 ng/l ( $10^{-5}$ ),  
0.28 ng/l ( $10^{-6}$ ), 0.028 ng/l  
( $10^{-7}$ ) (Human Health)

Soil RI Analyte: No

Soil EA Analyte: No

Potential Soil ARAR: No

Surface Water RI Analyte: No

Potential Surface Water ARAR: (a) 45 Fed. Reg. 79335 (1980)  
(AWQC) -- 2.78 ng/l  
( $10^{-5}$ ), 0.28 ng/l ( $10^{-6}$ ),  
0.028 ng/l ( $10^{-7}$ ) (Human  
Health);  
(b) 45 Fed. Reg. 79335 (1980)  
(AWQC) -- 24 hour average  
is 0.0038  $\mu$ g/l and  
concentration not to  
exceed 0.52  $\mu$ g/l at any  
time (Aquatic Life).

Biota RI Analyte: No

Potential Biota ARAR:

40 C.F.R. § 180.104 (TPCRAC) --  
tolerances for total residues in or  
on raw agricultural commodities  
are: (i) 0.1 part per million in or  
on cabbage, lettuce, rutabagas,  
snap beans; (ii) zero in or on  
alfalfa, apples, barley, beets  
(including sugarbeets), blackeyed  
peas, brussels sprouts, carrots,  
cauliflower, cherries, clover,  
corn, cottonseed, cowpeas, grain  
sorghum (milo), grapes, grass  
(pasture and range), kohlrabi, lima  
beans, meat, milk, oats, onions,  
peaches, peanuts, peas, pineapple,  
potatoes, radishes, rye, sugarcane,  
sweet clover, sweet potatoes,  
tomatoes, turnips, and wheat.

150. PRIMARY NAME: Heptachlor epoxide

CERCLA Hazardous Substance: Yes

Ranking on ATSDR Priority List: No

Air Analyte: No

Potential Air ARAR: No

Ground Water RI Analyte: No

Potential Ground Water ARAR: (Heptachlor) 45 Fed. Reg.  
79335 (1980) (AWQC) -- 2.78  
ng/l ( $10^{-5}$ ), 0.28 ng/l ( $10^{-6}$ ),  
0.028 ng/l ( $10^{-7}$ ) (Human  
Health)

Soil RI Analyte: No

Soil EA Analyte: No

Potential Soil ARAR: No

Surface Water RI Analyte: No

Potential Surface Water ARAR: (a) (Heptachlor) 45 Fed. Reg.  
79335 (1980) (AWQC) --  
2.78 ng/l ( $10^{-5}$ ), 0.28  
ng/l ( $10^{-6}$ ), 0.028 ng/l  
( $10^{-7}$ ) (Human Health);  
(b) (Heptachlor) 45 Fed. Reg.  
79335 (1980) (AWQC) -- 24  
hour average is 0.0038  
 $\mu$ g/l and concentration  
not to exceed 0.52  $\mu$ g/l  
at any time (Aquatic  
Life).

Biota RI Analyte: No

Potential Biota ARAR:

40 C.F.R. § 180.104 (TPCRAC) --  
tolerances for total residues in or  
on raw agricultural commodities  
are: (i) 0.1 part per million in or  
on cabbage, lettuce, rutabagas,  
snap beans; (ii) zero in or on  
alfalfa, apples, barley, beets  
(including sugarbeets), blackeyed  
peas, brussels sprouts, carrots,  
cauliflower, cherries, clover,  
corn, cottonseed, cowpeas, grain  
sorghum (milo), grapes, grass  
(pasture and range), kohlrabi, lima  
beans, meat, milk, oats, onions,  
peaches, peanuts, peas, pineapple,  
potatoes, radishes, rye, sugarcane,  
sweet clover, sweet potatoes,  
tomatoes, turnips, and wheat.

151. PRIMARY NAME: Heptachlorobicycloheptene (Compound 773)

CERCLA Hazardous Substance: No

Ranking on ATSDR Priority List: No

Air Analyte: No

Potential Air ARAR: No

Ground Water RI Analyte: No

Potential Ground Water ARAR: No

Soil RI Analyte: No

Soil EA Analyte: No

Potential Soil ARAR: No

Surface Water RI Analyte: No

Surface Water EA Analyte: No

Potential Surface Water ARAR: No

Biota RI Analyte: No

Potential Biota ARAR: No

152. PRIMARY NAME: Heptane

CERCLA Hazardous Substance: No

Ranking on ATSDR Priority List: No

Air Analyte: No

Potential Air ARAR: No

Ground Water RI Analyte: No

Potential Ground Water ARAR: No

Soil RI Analyte: No

Soil EA Analyte: No

Potential Soil ARAR: No

Surface Water RI Analyte: No

Potential Surface Water ARAR: No

Biota RI Analyte: No

Potential Biota ARAR: No

153. PRIMARY NAME: Hexachlorobenzene

CERCLA Hazardous Substance: Yes

Ranking on ATSDR Priority List: Priority Group 3

Air Analyte: No

Potential Air ARAR: No

Ground Water RI Analyte: No

Potential Ground Water ARAR: 45 Fed. Reg. 79327 (1980)  
(AWQC) -- 7.2 ng/l ( $10^{-6}$ ), 0.72  
ng/l ( $10^{-6}$ ), 0.072 ng/l ( $10^{-7}$ )  
Human Health)

Soil RI Analyte: No

Soil EA Analyte: No

Potential Soil ARAR: No

Surface Water RI Analyte: No

Potential Surface Water ARAR: (a) 45 Fed. Reg. 79327 (1980)  
(AWQC) -- 7.2 ng/l  
( $10^{-6}$ ), 0.72 ng/l ( $10^{-6}$ ),  
0.072 ng/l ( $10^{-7}$ ) Human  
Health);

(b) 45 Fed. Reg. 79327 (1980)  
(AWQC) -- 250  $\mu$ g/l  
(Aquatic Life).

Biota RI Analyte: No

Potential Biota ARAR: No

154. PRIMARY NAME: 1,2,3,4,7,7-Hexachlorobicyclo(2.2.1)hepta-  
2,5-diene (Hexachloronorbornadiene)

CERCLA Hazardous Substance: No

Ranking on ATSDR Priority List: No

Air Analyte: No

Potential Air ARAR: No

Ground Water RI Analyte: No

Potential Ground Water ARAR: No

Soil RI Analyte: No

Soil EA Analyte: No

Potential Soil ARAR: No

Surface Water RI Analyte: No

Potential Surface Water ARAR: No

Biota RI Analyte: No

Potential Biota ARAR: No

155. PRIMARY NAME: Hexachlorobutadiene (HCBd, C-46)

CERCLA Hazardous Substance: Yes

Ranking on ATSDR Priority List: Priority Group 4

Air Analyte: No

Potential Air ARAR: No

Ground Water RI Analyte: No

Potential Ground Water ARAR: 45 Fed. Reg. 79335 (1980)  
(AWQC) -- 4.47 ng/l ( $10^{-5}$ ),  
0.45 ng/l ( $10^{-6}$ ), 0.045 ng/l  
( $10^{-7}$ ) Human Health).

Soil RI Analyte: No

Soil EA Analyte: No

Potential Soil ARAR: No

Surface Water RI Analyte: No

Potential Surface Water ARAR: (a) 45 Fed. Reg. 79335 (1980)  
(AWQC) -- 4.47 ng/l  
( $10^{-5}$ ), 0.45 ng/l ( $10^{-6}$ ),  
0.045 ng/l ( $10^{-7}$ ) Human  
Health);  
(b) 45 Fed. Reg. 79335 (1980)  
(AWQC) -- 9.3  $\mu$ g/l  
(Aquatic Life).

Biota RI Analyte: No

Potential Biota ARAR: No

156. **PRIMARY NAME:** Hexachlorocyclopentadiene (HCCPD)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: Yes  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: 45 Fed. Reg. 79336 (1980)  
(AWQC) -- 206 µg/l (Human Health)  
  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: (a) 45 Fed. Reg. 79336 (1980)  
(AWQC) -- 206 µg/l (Human Health);  
(b) 45 Fed. Reg. 79336 (1980)  
(AWQC) -- 5.2 µg/l (Aquatic Life).  
  
Biota RI Analyte: No  
Potential Biota ARAR: No
157. **PRIMARY NAME:** 4,5,6,7,8,8-Hexachloro-3a,4,7,7a-tetrahydro-4,7-metheno-1H-indene (Chlordene)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
158. **PRIMARY NAME:** n-Hexane  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

159. PRIMARY NAME: Hexone (MIBK, Methyl isobutyl ketone)  
CERCLA Hazardous Substance: Yes (see Methyl isobutyl ketone)  
Ranking on ATSDR Priority List: No  
Air Analyte: Yes  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: No  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
160. PRIMARY NAME: Hydrazine  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: Yes  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
161. PRIMARY NAME: Hydrobromic acid (Hydrogen bromide)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No



162. PRIMARY NAME: Hydrochloric acid (Hydrogen chloride)  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
163. PRIMARY NAME: Hydrofluoric acid  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
164. PRIMARY NAME: Hydrogen sulfide  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

Hydrochloric acid (Hydrogen chlo  
Substance: Yes  
Priority List: No

ARAR: No  
Analyte: No  
Water ARAR: No  
ARAR: No

Hydrofluoric acid  
Substance: Yes  
Priority List: No

ARAR: No  
Analyte: No  
Ground Water ARAR: No  
ARAR: No  
RI Analyte: No  
Surface Water ARAR: No  
Biota ARAR: No

Hydrogen sulfide  
Hazardous Substance: Yes  
ATSDR Priority List: No  
ARAR: No  
Air ARAR: No  
Water RI Analyte: No  
Ground Water ARAR: No  
RI Analyte: No  
Soil ARAR: No  
Water RI Analyte: No  
Surface Water ARAR: No  
RI Analyte: No  
Biota ARAR: No

168. PRIMARY NAME: 4-Hydroxy-3,5-dinitrophenyl methyl sulfone  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

169. PRIMARY NAME: 4-Hydroxy-4-methyl-2-pentanone  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

170. PRIMARY NAME: Hypochlorous acid, calcium salt (Calcium hypochlorite, Bleaching powder)  
CERCLA Hazardous Substance: Yes (see Calcium hypochlorite)  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

171. PRIMARY NAME: Impregnite CC2  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
172. PRIMARY NAME: Impregnite CC3  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
173. PRIMARY NAME: Iron (III) oxide (Ferric oxide)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes (Iron)  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

174. PRIMARY NAME: Isobutylmethacrylate (IM Gel)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
175. PRIMARY NAME: Isodrin  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: Yes  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: No  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
176. PRIMARY NAME: Isopropyl methyl phosphonate (IMP)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes (occurs as phonsphonate in environment)  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

177. PRIMARY NAME: Keto-endrin  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

178. PRIMARY NAME: Landrin  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

179. PRIMARY NAME: Lead

CERCLA Hazardous Substance: Yes

Ranking on ATSDR Priority List: Priority Group 1

Air Analyte: Yes

Potential Air ARAR: 40 C.F.R. § 50.12 (NAAQS) -- 1.5  
micrograms per cubic meter, maximum  
arithmetic mean averaged over a calendar  
quarter

Ground Water RI Analyte: Yes

Potential Ground Water ARAR: (a) 40 C.F.R. § 141.11(b)  
(NPDW -- MCL) -- 50 µg/l;  
(b) 40 C.F.R. § 264.94(a)(2)  
(RCRA) -- 50 µg/l;  
(c) 45 Fed. Reg. 79336 (1980)  
(AWQC) -- 50 µg/l (Human  
Health).

Soil RI Analyte: Yes

Soil EA Analyte: Yes

Potential Soil ARAR: No

Surface Water RI Analyte: Yes

Potential Surface Water ARAR: (a) 40 C.F.R. § 141.11(b)  
(NPDW -- MCL) -- 50 µg/l;  
(b) 40 C.F.R. § 264.94(a)(2)  
(RCRA) -- 50 µg/l;  
(c) 45 Fed. Reg. 79336 (1980)  
(AWQC) -- 50 µg/l (Human  
Health);  
(d) 45 Fed. Reg. 79336 (1980)  
(AWQC) -- 24 hour limit  
to not exceed  
e (2.35 [In(hardness)] -  
9.48) and concentration  
at any one time to not  
exceed  
e (1.22 [In(hardness)] -  
0.47] (Aquatic Life).

Biota RI Analyte: No

Potential Biota ARAR: No

180. PRIMARY NAME: Lewisite (M-1)

CERCLA Hazardous Substance: No

Ranking on ATSDR Priority List: No

Air Analyte: No

Potential Air ARAR: No

Ground Water RI Analyte: No

Potential Ground Water ARAR: No

Soil RI Analyte: Yes

Soil EA Analyte: Yes

Potential Soil ARAR: No

Surface Water RI Analyte: No

Potential Surface Water ARAR: No

Biota RI Analyte: No

Potential Biota ARAR: No

181. PRIMARY NAME: Lewisite oxide  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
182. PRIMARY NAME: Lime chlorinated (Hypochlorous acid)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
183. PRIMARY NAME: Magnesium  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No



184. PRIMARY NAME: Magnesium hydroxide  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes (Magnesium)  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

185. PRIMARY NAME: Malathion

CERCLA Hazardous Substance: Yes

Ranking on ATSDR Priority List: No

Air Analyte: Yes

Potential Air ARAR: No

Ground Water RI Analyte: No

Potential Ground Water ARAR: No

Soil RI Analyte: Yes

Soil EA Analyte: Yes

Potential Soil ARAR: No

Surface Water RI Analyte: Yes

Potential Surface Water ARAR: No

Biota RI Analyte: No

Potential Biota ARAR:

- (a) 40 C.F.R. § 180.111 (as amended by 52 Fed. Reg. 45183 (1987)) (TPF) -- tolerances for residues in or on raw agricultural commodities range from a high of 135 parts per million (e.g., clover, grass, various types of hay and straw) to a low of 0.2 parts per million (safflower seed) with most listed commodities at 4.0 parts per million (e.g., meat from cattle, goats, hogs, horses, and poultry meat) or 8 parts per million (e.g., blueberries, fresh corn, potatoes, raspberries, tomatoes, wheat);
- (b) 21 C.F.R. § 193.260(a)(3) (TPF) -- total residues of malathion from application to grapes before harvest shall not exceed 12 parts per million on processed ready-to-eat raisins;
- (c) 21 C.F.R. § 193.260(a)(4) (TPF) -- residues in refined safflower oil from application to the growing safflower plant shall not exceed 0.6 parts per million.

186. PRIMARY NAME: Manganese  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

187. PRIMARY NAME: Mercaptodiacetic acid  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

188. PRIMARY NAME: Mercuric chloride  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: Yes (Mercury)  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes (Mercury)  
Potential Ground Water ARAR: (a) (Mercury) 40 C.F.R. §  
141.11(b) (NPDW -- MCL)  
-- 2 µg/l;  
(b) (Mercury) 45 Fed. Reg.  
79336-79337 (1980) (AWQC)  
-- 144 ng/l (Human  
Health).  
  
Soil RI Analyte: Yes (Mercury)  
Soil EA Analyte: Yes (Mercury)  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes (Mercury)  
Potential Surface Water ARAR: (a) (Mercury) 40 C.F.R. §  
141.11(b) (NPDW -- MCL)  
-- 2 µg/l;  
(b) (Mercury) 45 Fed. Reg.  
79336-79337 (1980) (AWQC)  
-- 144 ng/l (Human  
Health);  
(c) (Mercury) 45 Fed. Reg.  
79336 (1980) (AWQC) --  
0.00057 µg/l (as a 24-  
hour average and the  
concentration should not  
exceed 0.0017 µg/l at any  
one time) (Aquatic Life).  
  
Biota RI Analyte: No  
Potential Biota ARAR: No

189. PRIMARY NAME: Mercury  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: Priority Group 2  
Air Analyte: Yes  
Potential Air ARAR: (a) 40 C.F.R. § 61.52(a) (NESHAP) --  
emissions to atmosphere from  
mercury ore processing facilities  
not to exceed 2300 grams per 24-  
hour period;  
(b) 40 C.F.R. § 61.52(b) (NESHAP) --  
emissions to atmosphere from sludge  
incineration or drying plants not  
to exceed 3200 grams per 24-hour  
period.  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: (a) 40 C.F.R. § 141.11(b)  
(NPDW -- MCL) -- 2 µg/l;  
(b) 40 C.F.R. § 264.94(a)(2)  
(RCRA) -- 2 µg/l;  
(c) 45 Fed. Reg. 79336-79337  
(1980) (AWQC) -- 144 ng/l  
(Human Health).  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: (a) 40 C.F.R. § 141.11(b)  
(NPDW -- MCL) -- 2 µg/l;  
(b) 40 C.F.R. § 264.94(a)(2)  
(RCRA) -- 2 µg/l;  
(c) 45 Fed. Reg. 79336-79337  
(1980) (AWQC) -- 144 ng/l  
(Human Health);  
(d) 45 Fed. Reg. 79336-79337  
(1980) (AWQC) -- 24 hour  
average 0.00057 µg/l and  
concentration not to  
exceed 0.0017 µg/l at any  
one time (Aquatic Life).  
Biota RI Analyte: No  
Potential Biota ARAR: No

190. PRIMARY NAME: Methane dichloride (Methylene Chloride)  
CERCLA Hazardous Substance: Yes (see Methylene Chloride)  
Ranking on ATSDR Priority List: No  
Air Analyte: Yes  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: No  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

191. PRIMARY NAME: Methanethiol  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: Yes  
Biota RI Analyte: No  
Potential Biota ARAR: No
192. PRIMARY NAME: Methanethiol, sodium salt  
CERCLA Hazardous Substance: Yes (see Methanethiol)  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
193. PRIMARY NAME: Methomyl (Nudrin insecticide)  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: 40 C.F.R. § 180.253 (TPCRAC) --  
tolerances for residues in or on  
raw agricultural commodities range  
from a high of 40 parts per million  
(Bermuda grass) to a low of 0.1  
parts per million (beans, fresh  
corn, peanuts) with most listed  
commodities around 5 parts per  
million (e.g. grapes), 6 parts per  
million (e.g., blueberries,  
strawberries) or 10 parts per  
million (e.g., Bermuda grass,  
wheat).

194. PRIMARY NAME: N-Methylacetoacetamide (N-Methyl-3-oxo-butanamide)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
195. PRIMARY NAME: Methyl acetylacetate (Methyl ester, Acetoaceticacid)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
196. PRIMARY NAME: 2-Methylalanine  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

197. PRIMARY NAME: Methylarsonic acid  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
198. PRIMARY NAME: 2-Methylbenzyl acetoacetate (MBAA)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
199. PRIMARY NAME: alpha-Methylbenzyl-2-chloroacetoacetate  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No



200. PRIMARY NAME: Methyl cyclohexane  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
201. PRIMARY NAME: 1-Methyl-1,3-cyclopentadiene  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
202. PRIMARY NAME: N-Methylformamide  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

203. PRIMARY NAME: Methyl hydrazine (MMH)  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: Yes  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

204. PRIMARY NAME: Methylmercury salts  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: Yes (Mercury)  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

205. PRIMARY NAME: Methyl naphthalene  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

206. PRIMARY NAME: Methyl parathion  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
207. PRIMARY NAME: Methylphosphonic acid (MPA)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
208. PRIMARY NAME: Methylphosphonic acid, disodium salt  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: Yes  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

209. PRIMARY NAME: Methyl phosphonic acid, isopropyl ester  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
210. PRIMARY NAME: Methyl phosphonic dichloride (Dichlor, Dichloro)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
211. PRIMARY NAME: Methylthioacetaldoxime  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

212. PRIMARY NAME: Mineral oil (Kaydol-Paraffin oil)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: 40 C.F.R. § 180.149(b) (TPCRAC) --  
tolerances of 200 parts per million  
in and on shelled corn, grain  
sorghum.
213. PRIMARY NAME: Monomethyl chloroacetoacetamide (MMCAA)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
214. PRIMARY NAME: Monomethyl dichloroacetoacetamide (MMDCAA)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

215. PRIMARY NAME: Monopropellant hydrazine (MPH)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
216. PRIMARY NAME: Mustard (HD)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
217. PRIMARY NAME: NP gel (Incendiary oil, Thickened gasoline)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

218. PRIMARY NAME: Naphtha (Coal tar)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
219. PRIMARY NAME: Nitrate  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: 40 C.F.R. § 141.11(b)  
(NPDW--MCL) -- 10,000 µg/l  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: 40 C.F.R. § 141.11(b)  
(NPDW--MCL) -- 10,000 µg/l  
Biota RI Analyte: No  
Potential Biota ARAR: No
220. PRIMARY NAME: Nitric acid  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

221. PRIMARY NAME: Nitric acid/Sulfuric acid (Mixed)  
CERCLA Hazardous Substance: Yes (each individually)  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

222. PRIMARY NAME: Nitrite  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

223. PRIMARY NAME: N-Nitromethylamine  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No



224. PRIMARY NAME: 4-Nitrophenol  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: 45 Fed. Reg. 79337 (1980)  
(AWQC) -- 230 µg/l (Aquatic Life).  
  
Biota RI Analyte: No  
Potential Biota ARAR: No
225. PRIMARY NAME: 4-Nitrophenol, sodium salt  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: 45 Fed. Reg. 79337 (1980)  
(AWQC) -- 230 µg/l (Aquatic Life).  
  
Biota RI Analyte: No  
Potential Biota ARAR: No
226. PRIMARY NAME: p-Nitrophenyl diethylphosphate  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: 45 Fed. Reg. 79337 (1980)  
(AWQC) -- 230 µg/l (Aquatic Life).  
  
Biota RI Analyte: No  
Potential Biota ARAR: No

227. PRIMARY NAME: Nitrous acid, ammonium salt (Ammonia nitrite)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
228. PRIMARY NAME: Octachlorocyclopentene (OCCP)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
229. PRIMARY NAME: 1,4-Oxathiane (p-Thiozane)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: Yes  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: No  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

230. PRIMARY NAME: 3-Oxo-butanoic acid (Acetoacetic acid)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
231. PRIMARY NAME: 2,2'-Oxybisethanol  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
232. PRIMARY NAME: Oxychlordan  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

233. PRIMARY NAME: Parathion  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: Yes  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: 40 C.F.R. § 180.121(a) (TPCRAC) --  
tolerances for residues in raw  
agricultural commodities range from  
a high of 3 parts per million  
(sorghum fodder and forage) to 0.75  
parts per million (cottonseed),  
with most listed commodities at 1  
part per million (e.g., grass,  
apples, gooseberries, lettuce,  
strawberries, tomatoes, wheat).

234. PRIMARY NAME: Pentachloroacetophenone  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

235. PRIMARY NAME: Petachlorobenzene  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: 45 Fed. Reg. 79327 (1980)  
(AWQC) -- 74 µg/l (Human Health).  
  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: (a) 45 Fed. Reg. 79327 (1980)  
(AWQC) -- 74 µg/l (Human Health);  
(b) 45 Fed. Reg. 79327 (1980)  
(AWQC) -- 250 µg/l (Aquatic Life).  
  
Biota RI Analyte: No  
Potential Biota ARAR: No

236. PRIMARY NAME: Pentachlorophenol  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: Priority Group 2  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: 45 Fed. Reg. 79338 (1980)  
(AWQC) -- 1010 µg/l (Human Health)  
  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: (a) 45 Fed. Reg. 79338 (1980)  
(AWQC) -- 1010 µg/l (Human Health);  
(b) 45 Fed. Reg. 79338 (1980)  
(AWQC) -- 3.2 µg/l (Aquatic Life).  
  
Biota RI Analyte: No  
Potential Biota ARAR: No

237. PRIMARY NAME: 2-Pentanone  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: Priority Group 4 (2-Pentanone, 4 Methyl)
- Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
238. PRIMARY NAME: Peroxyacetic acid (Peracetic acid)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No
- Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
239. PRIMARY NAME: Peroxybenzoic acid  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No
- Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

240. PRIMARY NAME: Petroleum spirits (Mineral spirits)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: (Mineral oil) 40 C.F.R. §  
180.149(b) (TPCRAC) -- tolerances  
of 200 parts per million in or on  
shelled corn, grain sorghum.
241. PRIMARY NAME: Phenanthrene  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: Priority Group 4  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
242. PRIMARY NAME: alpha-Phenethyl alcohol  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

243. PRIMARY NAME: Phenolics  
CERCLA Hazardous Substance: Yes (see various Phenol listings)  
Ranking on ATSDR Priority List: Priority Group 2 (Phenol)  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: 45 Fed. Reg. 79338 (1980)  
(AWQC-Phenol) -- 3,500 µg/l  
(Human Health)  
  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: (a) 45 Fed. Reg. 79338 (AWQC-Phenol) -- 3,500 µg/l  
(Human Health;  
(b) 45 Fed. Reg. 79338 (1980)  
(AWQC-Phenol) -- 2,560 µg/l (Aquatic Life).  
  
Biota RI Analyte: No  
Potential Biota ARAR: No
244. PRIMARY NAME: Phosdrin  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
245. PRIMARY NAME: Phosgene (CG)  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No



246. PRIMARY NAME: Phosphoric acid  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
247. PRIMARY NAME: Phosphoric acid, 2,2-dichloroethenyl methyl  
octyl ester  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
248. PRIMARY NAME: Phosphoric acid, diethyl ester (Diethyl  
phosphate)  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

249. PRIMARY NAME: Phosphoric acid, tributyl ester  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

250. PRIMARY NAME: Phosphoric acid, triphenyl ester  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

251. PRIMARY NAME: Phosphorus (Red phosphorus, White phosphorus)  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

252. PRIMARY NAME: Photodieldrin  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
253. PRIMARY NAME: Piperazine  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
254. PRIMARY NAME: Planavin (Benzenamine)  
CERCLA Hazardous Substance: Yes [see Benzenamine]  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

255. PRIMARY NAME: Potassium  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

256. PRIMARY NAME: PT-1 Mix  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

257. PRIMARY NAME: Pyrene  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

258. PRIMARY NAME: Sarin (GB)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
259. PRIMARY NAME: Shell nitrogen solution (Azodrin raffinate  
fertilizer - 8% nitrogen)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
260. PRIMARY NAME: Shell poultry spray  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

261. PRIMARY NAME: Sodium  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
262. PRIMARY NAME: Sodium bicarbonate, 1:1  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes (Sodium)  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
263. PRIMARY NAME: Sodium bromate  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes (Sodium)  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

264. PRIMARY NAME: Sodium carbonate, 2:1  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes (Sodium)  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

265. PRIMARY NAME: Sodium chloride (Salt)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes (Sodium)  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

266. PRIMARY NAME: Sodium fluoride  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes (Sodium)  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

267. PRIMARY NAME: Sodium hydroxide (Caustic)  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes (Sodium)  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

268. PRIMARY NAME: Sodium hypochlorite  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes (Sodium)  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

269. PRIMARY NAME: Sodium methyate, alcohol mixture  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes (Sodium)  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No



270. PRIMARY NAME: Sodium nitrite  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes (Sodium)  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

271. PRIMARY NAME: Sodium silicate  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes (Sodium)  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

272. PRIMARY NAME: Sodium sulfate, 2:1  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes (Sodium)  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

273. PRIMARY NAME: Sodium sulfite, 2:1  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes (Sodium)  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
274. PRIMARY NAME: Sodium sulfonate  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes (Sodium)  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
275. PRIMARY NAME: Sodium thiosulfate (Hypo)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes (Sodium)  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

276. PRIMARY NAME: Sulfate  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: No  
Soil RI Analyte: Yes  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
277. PRIMARY NAME: Sulfonic acid  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
278. PRIMARY NAME: Sulfur  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

279. PRIMARY NAME: Sulfur chloride  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
280. PRIMARY NAME: Sulfur dichloride (SD)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
281. PRIMARY NAME: Sulfur dioxide  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: 40 C.F.R. § 50.4 (NAAQS) -- Generally 80  
micrograms per cubic meter (0.03  
p.p.m.)-annual arithmetic mean; however,  
once a year a maximum 24-hour concen-  
tration of 365 micrograms per cubic  
meter (0.14 p.p.m.) is permissible  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

282. PRIMARY NAME: Sulfur tetrachloride  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
283. PRIMARY NAME: Sulfuric acid  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
284. PRIMARY NAME: Sulfuric acid, fuming (Oleum, 65%)  
CERCLA Hazardous Substance: Yes (Sulfuric acid)  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

285. PRIMARY NAME: Sulfurous acid  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

286. PRIMARY NAME: Sulfuryl chloride  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

287. PRIMARY NAME: p,p'-TDE  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: 45 Fed. Reg. 79331 (1980)  
(AWQC) -- 0.6 µg/l (Aquatic Life).  
Biota RI Analyte: No  
Potential Biota ARAR: No

288. PRIMARY NAME: Tetrachlorobenzene (1,2,4,5-Tetrachlorobenzene)

CERCLA Hazardous Substance: Yes

Ranking on ATSDR Priority List: No

Air Analyte: No

Potential Air ARAR: No

Ground Water RI Analyte: No

Potential Ground Water ARAR: 45 Fed. Reg. 79327 (1980)  
(AWQC) -- 38 µg/l (Human Health)

Soil RI Analyte: No

Soil EA Analyte: No

Potential Soil ARAR: No

Surface Water RI Analyte: No

Potential Surface Water ARAR: (a) 45 Fed. Reg. 79327 (1980)  
(AWQC) -- 38 ug/l (Human Health);  
(b) 45 Fed. Reg. 79327 (1980)  
(AWQC) -- 250 ug/l (Aquatic Life).

Biota RI Analyte: No

Potential Biota ARAR: No

289. PRIMARY NAME: 1,1,2,2-Tetrachloroethane

CERCLA Hazardous Substance: Yes

Ranking on ATSDR Priority List: No

Air Analyte: No

Potential Air ARAR: No

Ground Water RI Analyte: No

Potential Ground Water ARAR: No

Soil RI Analyte: No

Soil EA Analyte: No

Potential Soil ARAR: No

Surface Water RI Analyte: No

Potential Surface Water ARAR: No

Biota RI Analyte: No

Potential Biota ARAR: No

290. PRIMARY NAME: 1,1,2,2-Tetrachloroethylene  
(Perchloroethylene, PCE)  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: Yes  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: 45 Fed. Reg. 79341 (1980)  
(AWQC) -- 8  $\mu\text{g/l}$  ( $10^{-5}$ ), 0.8  
 $\mu\text{g/l}$  ( $10^{-6}$ ), 0.08  $\mu\text{g/l}$  ( $10^{-7}$ )  
(Human Health)  
  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: (a) 45 Fed. Reg. 79341 (1980)  
(AWQC) -- 8  $\mu\text{g/l}$  ( $10^{-5}$ ),  
0.8  $\mu\text{g/l}$  ( $10^{-6}$ ), 0.08  $\mu\text{g/l}$   
( $10^{-7}$ ) (Human Health);  
(b) 45 Fed. Reg. 79341 (1980)  
(AWQC) - 840  $\mu\text{g/l}$   
(Aquatic Life).  
  
Biota RI Analyte: No  
Potential Biota ARAR: No
291. PRIMARY NAME: Thickener M1 (Napalm)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
292. PRIMARY NAME: Thickener M2 (Napalm)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No



293. PRIMARY NAME: beta-Thiodiglycol (Thiodiglycol)

CERCLA Hazardous Substance: No

Ranking on ATSDR Priority List: No

Air Analyte: No

Potential Air ARAR: No

Ground Water RI Analyte: No

Potential Ground Water ARAR: No

Soil RI Analyte: Yes

Soil EA Analyte: Yes

Potential Soil ARAR: No

Surface Water RI Analyte: No

Potential Surface Water ARAR: No

Biota RI Analyte: No

Potential Biota ARAR: No

294. PRIMARY NAME: Thionyl chloride (TC)

CERCLA Hazardous Substance: No

Ranking on ATSDR Priority List: No

Air Analyte: No

Potential Air ARAR: No

Ground Water RI Analyte: No

Potential Ground Water ARAR: No

Soil RI Analyte: No

Soil EA Analyte: No

Potential Soil ARAR: No

Surface Water RI Analyte: No

Potential Surface Water ARAR: No

Biota RI Analyte: No

Potential Biota ARAR: No

295. PRIMARY NAME: Toluene

CERCLA Hazardous Substance: Yes

Ranking on ATSDR Priority List: Priority Group 2

Air Analyte: Yes

Potential Air ARAR: 45 Fed. Reg. 79340 (1980) (AWQC) --  
14,300 µg/l (Human Health)

Ground Water RI Analyte: Yes

Potential Ground Water ARAR: No

Soil RI Analyte: Yes

Soil EA Analyte: Yes

Potential Soil ARAR: No

Surface Water RI Analyte: Yes

Potential Surface Water ARAR: (a) 45 Fed. Reg. 79340 (1980)  
(AWQC) -- 14,300 µg/l  
(Human Health);  
(b) 45 Fed. Reg. 79340 (1980)  
(AWQC) -- 17,500 µg/l  
(Aquatic Life).

Biota RI Analyte: No

Potential Biota ARAR: No

296. PRIMARY NAME: Tributylamine (TBA)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
297. PRIMARY NAME: Trichloroacetic acid  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
298. PRIMARY NAME: 2,2',4'-Trichloroacetophenone  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

299. PRIMARY NAME: 2,2',5'-Trichloroacetophenone  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
300. PRIMARY NAME: 2,4',5'-Trichloroacetophenone  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
301. PRIMARY NAME: unsym-Trichlorobenzene (1,2,4-Trichlorobenzene)  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

302. PRIMARY NAME: 1,1,1-Trichloroethane

CERCLA Hazardous Substance: Yes

Ranking on ATSDR Priority List: Priority Group 3

Air Analyte: Yes

Potential Air ARAR: No

Ground Water RI Analyte: Yes

Potential Ground Water ARAR: (a) 40 C.F.R. § 141.50 (NPDW  
-- MCLG) -- 200 µg/l;  
(b) 40 C.F.R. § 141.61(a); 52  
Fed. Reg. 25716 (1987)  
(effective Jan. 9, 1989)  
(NPDW -- MCL) -- 200  
µg/l.

Soil RI Analyte: Yes

Soil EA Analyte: Yes

Potential Soil ARAR: No

Surface Water RI Analyte: Yes

Potential Surface Water ARAR: (a) 40 C.F.R. § 141.50 (NPDW  
-- MCLG) -- 200 µg/l;  
(b) 40 C.F.R. § 141.61(a); 52  
Fed. Reg. 25716 (1987)  
(effective Jan. 9, 1989)  
(NPDW -- MCL) -- 200  
µg/l.

Biota RI Analyte: No

Potential Biota ARAR: No

303. PRIMARY NAME: 1,1,2-Trichloroethane (Vinyl trichloride)

CERCLA Hazardous Substance: Yes

Ranking on ATSDR Priority List: Priority Group 2

Air Analyte: Yes

Potential Air ARAR: No

Ground Water RI Analyte: Yes

Potential Ground Water ARAR: No

Soil RI Analyte: Yes

Soil EA Analyte: Yes

Potential Soil ARAR: No

Surface Water RI Analyte: Yes

Potential Surface Water ARAR: No

Biota RI Analyte: No

Potential Biota ARAR: No

304. PRIMARY NAME: Trichloroethylene (Trichloroethene, TCE)  
 CERCLA Hazardous Substance: Yes  
 Ranking on ATSDR Priority List: Priority Group 1  
 Air Analyte: Yes  
 Potential Air ARAR: No  
 Ground Water RI Analyte: Yes  
 Potential Ground Water ARAR: (a) 40 C.F.R. § 141.61(a); 52  
 Fed. Reg. 25716 (1987)  
 (effective Jan. 9, 1989)  
 (NPDW -- MCL) -- 5 µg/l;  
 (b) 45 Fed. Reg. 79341 (1980)  
 (AWQC) -- 27 µg/l ( $10^{-5}$ ),  
 2.7 µg/l ( $10^{-6}$ ), 0.27 µg/l  
 ( $10^{-7}$ ) (Human Health).  
 Soil RI Analyte: Yes  
 Soil EA Analyte: Yes  
 Potential Soil ARAR: No  
 Surface Water RI Analyte: Yes  
 Potential Surface Water ARAR: (a) 45 Fed. Reg. 79341 (1980)  
 (AWQC) -- 27 µg/l ( $10^{-5}$ ),  
 2.7 µg/l ( $10^{-6}$ ), 0.27 µg/l  
 ( $10^{-7}$ ) (Human Health);  
 (b) 45 Fed. Reg. 79341 (1980)  
 (AWQC) -- 45,000 µg/l  
 (Aquatic Life).  
 Biota RI Analyte: No  
 Potential Biota ARAR: No

305. PRIMARY NAME: Trichloropropene  
 CERCLA Hazardous Substance: No  
 Ranking on ATSDR Priority List: No  
 Air Analyte: No  
 Potential Air ARAR: No  
 Ground Water RI Analyte: No  
 Potential Ground Water ARAR: No  
 Soil RI Analyte: No  
 Soil EA Analyte: No  
 Potential Soil ARAR: No  
 Surface Water RI Analyte: No  
 Potential Surface Water ARAR: No  
 Biota RI Analyte: No  
 Potential Biota ARAR: No

306. PRIMARY NAME: 2,4,6-Trichlorotriazine  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

307. PRIMARY NAME: Triethyl phosphate  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

308. PRIMARY NAME: Triethyl phosphite (Phosphorus acid,  
Triethylester)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

309. PRIMARY NAME: Trihydroxytriethylamine (Trietharolamine)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
310. PRIMARY NAME: Trimethylbenzene  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
311. PRIMARY NAME: Trimethylhydrazine  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

312. PRIMARY NAME: 2,3,5-Trimethyl phenol  
CERCLA Hazardous Substance: Yes (see Phenol)  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: 45 Fed. Reg. 79338 (AWQC-Phenol) -- 3,500 µg/l (Human Health)  
  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: (a) 45 Fed. Reg. 79338 (AWQC-Phenol) -- 3,500 µg/l (Human Health);  
(b) 45 Fed. Reg. 79338 (AWQC-Phenol) -- 2,560 µg/l (Aquatic Life).  
  
Biota RI Analyte: No  
Potential Biota ARAR: No
313. PRIMARY NAME: 3,4,5-Trimethyl phenol  
CERCLA Hazardous Substance: Yes (see Phenol)  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: 45 Fed. Reg. 79338 (AWQC-Phenol) -- 3,500 µg/l (Human Health)  
  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: (a) 45 Fed. Reg. 79338 (AWQC-Phenol) -- 3,500 µg/l (Human Health);  
(b) 45 Fed. Reg. 79338 (AWQC-Phenol) -- 2,560 µg/l (Aquatic Life).  
  
Biota RI Analyte: No  
Potential Biota ARAR: No



314. PRIMARY NAME: Trimethyl phosphate  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
315. PRIMARY NAME: Trimethyl phosphite  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No
316. PRIMARY NAME: Tris-2-chlorovinylarsine  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

317. PRIMARY NAME: Urea (Carbomide)

CERCLA Hazardous Substance: No

Ranking on ATSDR Priority List: No

Air Analyte: No

Potential Air ARAR: No

Ground Water RI Analyte: No

Potential Ground Water ARAR: No

Soil RI Analyte: No

Soil EA Analyte: No

Potential Soil ARAR: No

Surface Water RI Analyte: No

Potential Surface Water ARAR: No

Biota RI Analyte: No

Potential Biota ARAR: No

318. PRIMARY NAME: Vinyl chloride

CERCLA Hazardous Substance: Yes

Ranking on ATSDR Priority List: Priority Group 1

Air Analyte: No

Potential Air ARAR: 40 C.F.R. § 61.63(a) (NESHAP) -- vinyl chloride plant shall operate so vinyl chloride in each exhaust gas stream does not exceed 10 ppm average for 3-hour period.

Ground Water RI Analyte: No

Potential Ground Water ARAR: (a) 40 C.F.R. § 141.61(a); 52 Fed. Reg. 25716 (1987) (effective Jan. 9, 1989) (NPDW -- MCL) -- 2 µg/l;  
(b) 45 Fed. Reg. 79341 (1980) (AWQC) -- 20 µg/l ( $10^{-5}$ ), 2.0 µg/l ( $10^{-6}$ ), 0.2 µg/l ( $10^{-7}$ ) (Human Health).

Soil RI Analyte: No

Soil EA Analyte: No

Potential Soil ARAR: No

Surface Water RI Analyte: No

Potential Surface Water ARAR: (a) 40 C.F.R. § 141.61(a); 52 Fed. Reg. 25716 (1987) (effective Jan. 9, 1989) (NPDW -- MCL) -- 2 µg/l;  
(b) 45 Fed. Reg. 79341 (1980) (AWQC) -- 20 µg/l ( $10^{-5}$ ), 2.0 µg/l ( $10^{-6}$ ), 0.2 µg/l ( $10^{-7}$ ) (Human Health).

Biota RI Analyte: No

Potential Biota ARAR: No

319. PRIMARY NAME: VX (Methylphosphonothioic acid, s-[2-bis[1-methylethyl]amino] ethyl] ethyl ester)  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

320. PRIMARY NAME: Wheat rust, TX  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: No  
Potential Air ARAR: No  
Ground Water RI Analyte: No  
Potential Ground Water ARAR: No  
Soil RI Analyte: No  
Soil EA Analyte: No  
Potential Soil ARAR: No  
Surface Water RI Analyte: No  
Potential Surface Water ARAR: No  
Biota RI Analyte: No  
Potential Biota ARAR: No

321. PRIMARY NAME: Xylene (includes m,o, p-Xylene)  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: Priority Group 3  
Air Analyte: Yes  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: 40 C.F.R. § 180.1025(c)  
(TPCRAC) -- Xylene is not to be applied to irrigation conveyances where there is any likelihood that the irrigation water will be used as a source of potable water, or that return flows to rivers and streams could contain residues of Xylene in excess of 10 parts per million.

Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: 40 C.F.R. § 180.1025(c)  
(TPCRAC) -- Xylene is not to be applied to irrigation conveyances where there is any likelihood that the irrigation water will be used as a source of potable water, or that return flows to rivers and streams could contain residues of Xylene in excess of 10 parts per million.

Biota RI Analyte: No  
Potential Biota ARAR: No

322. PRIMARY NAME: Zinc  
CERCLA Hazardous Substance: Yes  
Ranking on ATSDR Priority List: Priority Group 2  
Air Analyte: Yes  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes  
Potential Ground Water ARAR: No  
Soil RI Analyte: Yes  
Soil EA Analyte: Yes  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes  
Potential Surface Water ARAR: 45 Fed. Reg. 79341 (1980)  
(AWQC) -- 24 hour average is 47 µg/l and should not exceed  $e(0.83[\ln(\text{hardness})] + 1.95)$  at any one time (Aquatic Life).

Biota RI Analyte: No  
Potential Biota ARAR: No

323. PRIMARY NAME: Zinc oxide  
CERCLA Hazardous Substance: No  
Ranking on ATSDR Priority List: No  
Air Analyte: Yes (Zinc)  
Potential Air ARAR: No  
Ground Water RI Analyte: Yes (Zinc)  
Potential Ground Water ARAR: No  
Soil RI Analyte: Yes (Zinc)  
Soil EA Analyte: Yes (Zinc)  
Potential Soil ARAR: No  
Surface Water RI Analyte: Yes (Zinc)  
Potential Surface Water ARAR: 45 Fed. Reg. 79341 (1980)  
(AWQC-Zinc) -- 24 hour average  
is 47 µg/l and should not  
exceed e (0.83 [In(hardness)]  
+ 1.95) at any one time  
(Aquatic Life).  
Biota RI Analyte: No  
Potential Biota ARAR: No

**RESPONSES TO COMMENTS ON  
CHEMICAL-SPECIFIC ARARs**

## RESPONSES TO COMMENTS ON CHEMICAL SPECIFIC ARARS

### I. EPA COMMENTS

#### EPA Comment No. 1:

We are quite troubled by the following Statements made by the Army in Volume III of the Chemical Index:

-- "[W]here human exposure is precluded due to the operation of the existing RMA use restrictions . . . , no regulations have been designed as ARARs for non-existent pathways for potential human exposure";

-- "[W]ith respect to the designed Ground water ARARs and all pertinent limits, it should be emphasized that there are no such ARARs that pertain to the On-Post Operable Unit, except at the RMA boundaries, due to the operation of the existing and continuing RMA use restrictions that preclude human consumption of the ground water . . . . Nevertheless, pertinent chemical-specific National Primary Drinking Water (NPDW) regulations, 40 C.F.R. Part 141, are designated as applicable for setting clean-up levels at the RMA boundaries . . . . While the requisite jurisdictional requirements . . . of the Clean Water Act's Toxic Pollutant Effluent Standards (TPES), 40 C.F.R. Part 129, make such regulations inapplicable here, pertinent provisions of these regulations are nevertheless designated as relevant and appropriate for purposes of chemical-specific clean-up levels at the RMA boundaries";

-- the existing and continuing restrictions on RMA use would render the chemical-specific ARARs pertaining to chemicals found in the RMA soils unnecessary; and

-- "[T]here are no Surface Water ARARs that pertain to human consumption because of the existing and continuing restrictions on RMA use."

One concern is that, especially during the initial ARAR identification phase, it is inappropriate to eliminate potential ARARs on-post based on the land use restrictions of the proposed Consent Decree. Certainly we all agree that the use restrictions do not allow or intend that the contamination on RMA will not be cleaned up; however, the language cited above could support such an interpretation.

Chemical-specific ARARs and/or risk-based action levels need to be identified for all media, including ground and surface water, soils, and air on RMA, for use in determining where contamination needs to be addressed, what levels of cleanup need to be attained, and what performance levels are necessary from

selected treatment alternatives to protect both wildlife and people during allowed uses. What ARARs or risk-based action levels are ultimately selected, and when and where they must be met, will be influenced by the land use restrictions. But we cannot say that, for example, a water-related ARAR or action level would never apply to ground water at any location or time on RMA.

The ARAR selection process is an iterative one. The ultimate risk management decision for what to clean and to what levels should be based on such considerations as protectiveness, permanence, risk levels and/or ARARs, technological limitations, costs, and how those factors are affected by the land use restrictions. This is not the time to eliminate potential ARARs based on the land use restrictions. The language in the draft document must be corrected.

Our second major concern is the implication in the language cited above, as well as elsewhere in the draft document, that compliance with ARARs or other action limits will only be necessary at the boundaries of RMA. While we agree that they certainly will apply there, they also will be necessary at internal locations where management of waste occurs. Consider two examples:

- ARARs for tanks or drums storing wastes on RMA would be meaningless if applied at the boundaries.
- Treatment technology that might involve reinjection of ground water should have treatment sufficient to attain any selected ARAR(s) or action levels at the point and time of reinjection. It would be inappropriate to select such treatment but not monitor its performance against selected ARARs or other action levels.

We do not believe compliance at the boundaries to be the intent of any party or the Decree. The language in the draft document must be corrected.

Response to EPA Comment No. 1:

The On-Post Chemical-Specific ARAR document has been revised to designate all potential ARARs and to not utilize the existing RMA land use restrictions (which are to be continued pursuant to the proposed Consent Decree) as an ARAR screening mechanism for potential ARARs. The Army will not simply apply potential ARARs at the RMA boundaries, but instead will look at the purpose and cleanup impact of each response action that is to take place within the RMA boundaries before making a determination on the pertinence of the application of ARARs to such activities. ARARs selected for protection of human health and the environment will



be designated in the draft final Endangerment Assessment Report for application at the RMA boundaries and internal locations as warranted, along with human health protective and environmentally protective risk assessment values selected pursuant to the other portions of the Endangerment Assessment. All chemical-specific ARARs and all human health based values will, in the context of the draft Endangerment Assessment Report, be subject to review and comment by EPA, Shell and the State.

EPA Comment No. 2:

The document states that "[W]here differing levels exist for human health, aquatic life, vegetation, etc., the value for human health generally is selected as the most protective of human health and the environment." However, there are several contaminants for which levels which are protective of human health are not protective for aquatic life. These include cadmium, chromium, copper, lead and zinc. Therefore, environment-based ARARs should be used for contaminants which might threaten aquatic life.

Response to EPA Comment No. 2:

The On-Post Chemical-Specific ARAR document has been revised to designate as potential ARARs, in every pertinent instance, AWQC levels that are protective of aquatic life.

EPA Comment No. 3:

The document also states that Ambient Water Quality Criteria (AWQC), 45 Fed. Reg. 79318 (1980), are designated as applicable ARARs that will be met at human health protective levels where there are no pertinent NPDW or TPES provisions. The 1980 AWQC were revised in a 1986 document and that fact should be reflected here. In addition, AWQC are likely to be more appropriate than TPES. This matter may need further review and discussion.

Response to EPA Comment No. 3:

While the 1980 AWQC published in 45 Fed. Reg. 79318 (1980) has been the subject of a revised treatment in the 1986 Superfund Public Health Evaluation Manual (SPHEM), the revised treatment has not been the subject of a similar publication in the Federal Register, and thus cannot be treated as water quality criteria established under 33 U.S.C. §§ 1313 or 1314 of the Clean Water Act or 42 U.S.C. § 300g-1 of the Safe Drinking Water Act (which is the requirement for such provisions to qualify as ARARs, Section 12(d)(2)(A), 42 U.S.C. § 9621(d)(2)(A).) Accordingly, the SPHEM treatment of AWQC is not treated as a potential promulgated chemical-specific ARAR. Nevertheless, the 1986 SPHEM criteria will be reviewed and may possibly be selected as the

pertinent cleanup levels in the context of the human health risk assessment portion of the Endangerment Assessment.

Since the revised chemical-specific ARARs document only identifies potential ARARs, it is unnecessary to determine at this time where and when AWQC are more appropriate for selection than TPES. The Army's selection between the AWQC and the TPES will be available for review and comment in the draft Endangerment Assessment Report.

EPA Comment No. 4:

Page 4, line 8 of the document should read "for the RMA lakes and streams."

Response to EPA Comment No. 4:

The introduction of the On-Post Chemical-Specific ARARs document has been revised accordingly.

EPA Comment No. 5:

On page 14, the Surface Water ARAR and ARAR Limit for arsenic are incorrectly listed as Soil ARAR and ARAR Limit.

Response to EPA Comment No. 5:

The text has been revised to correct this error.

EPA Comment No. 6:

On page 4, why is the updating of the accompanying list of chemical-specific ARARs with additional chemical-specific regulations proposed to be time-limited?

Response to EPA Comment No. 6:

The updating of chemical-specific ARARs in the context of the Endangerment Assessment has been revised to make clear that this will occur through July 1990 when the draft On-Post Endangerment Assessment Report is scheduled to be issued, and thereafter in the final version of that Endangerment Assessment Report. The list of On-Post chemical-specific ARARs will then be updated in the context of the draft and draft final versions of the On-Post Feasibility Study Report to be issued in 1992.

EPA Comment No. 7:

Finally, EPA reserves the right to comment in the future on specific applications of the Chemical Index. For example, future research may affect understanding of the persistence or toxicity of many of the compounds contained in the Index.

Response to EPA Comment No. 7:

EPA, Shell and the State will have further opportunities for review and comment on the specific application of the Chemical Index both in the context of the draft Endangerment Assessment Report and the draft Feasibility Study Report.

II. CDH COMMENTS

June 20, 1988 CDH Comments

As an initial matter, you are aware that the State is not a party to the RI/FS Process Document between the United States and Shell Oil Co. Therefore, the State has not committed to the 30 or 45 day review and comment period provided in the RI/FS Document. Pursuant to the only operative four party agreement -- the MOA -- the State has 60 days to review and comment on reports and plans submitted by the Army, its contractors and Shell. However, in the interest of advancing the clean-up of the Arsenal to the extent practicable, the State is providing comments on the Chemical-Specific ARARs for the RMA On-Post Operable Unit well in advance of the 60 day deadline.

The State has numerous concerns with Volume III of the Chemical Index entitled, "Chemical-Specific ARARs for On-Post Operable Unit, RMA." Volume III of the Chemical Index purports to be the Army's identification of chemical-specific ARARs for the Rocky Mountain Arsenal. The root of the State's concerns can be found in the short narrative text included with the Army's draft final identification of chemical-specific ARARs. The text makes clear that the continuing reliance upon the land and resource use restrictions "indefinitely" will limit the breadth of the remedial investigation (RI) and study of remedial alternatives during the feasibility study (FS), the endangerment assessment (EA) and consequently the remedy selection. [For example, the text includes Statements such as, "where human exposure is precluded due to the operation of the existing RMA use restrictions . . . no regulations have been designated as ARARs . . ."; "[w]ith respect to the designated Ground water ARARs and all pertinent limits, it should be emphasized that there are no such ARARs that pertain to the On-Post Operable Unit, except at the RMA boundaries, due to the operation of the existing and continuing RMA use restrictions . . ."; and "[t]here are no chemical-specific ARARs that pertain to any of the

chemicals found in the RMA soils. Moreover, the existing and continuing restrictions on RMA use would render them unnecessary in any event."]

Limiting the scope of the investigations is inappropriate. While temporary use restrictions may be necessary during the conduct of the RI/FS and EA, the use restrictions must not serve to limit the scope of those studies. Similarly, temporary use restrictions may be necessary during the early stages of conducting the final remedy. However, the State is firm in its conviction that the determination of the need for use restrictions has not been properly evaluated and should not be made outside of the feasibility study and final remedy selection processes. Doing so introduces an arbitrary component into the entire RMA clean-up program which may seriously undermine confidence in the program and expose the process to allegations of not being responsive to the permanent remedy requirements of the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), as amended. Arbitrary land and use restrictions should not serve as an alternative to the implementation of a permanent remedy which is protective of the human health and environment. The State is confident that a comprehensive RI/FS and EA (considering all potential pathways) will demonstrate the temporary nature of institutional controls appropriate for the site.

The Army's purported identification of chemical-specific ARARs is a systematic rejection of all of the substantive chemical specific standards applicable to any internal, on-site response action taken at the Arsenal due, in part, to the imposition of use restrictions. [The only deviation from this position appears to be for a limited set of surface water ARARs (Ambient Water Criteria regulations) to protect the "non-consumable" aquatic life found in Arsenal lakes.] Substantive ARARs cannot be rejected merely because the Army has determined in advance of completing the feasibility study and final remedy selection that land and resource use restrictions will serve as part of the permanent remedy for the Arsenal. This is a risk management decision which is properly made in conjunction with remedial decisions. This distinction is significant because it is the ARAR identification, selection and waiver process which statutorily provides a check and balance upon the United States' discretion in the remedial selection process. All potential ARARs must be identified to present the entire risk question to the risk manager.

Volume III also recites that human health criteria have been selected as the most protective of both human health and the environment. This choice is also a risk management decision, which should not be made at this stage of the process. Instead, all applicable or relevant and appropriate criteria should be

specified at this time. Only then will the risk manager be in a position to select among all pertinent criteria in accordance with the final remedial goals determined to be protective of human health and the environment. Moreover, the Army's statement is erroneous: human health criteria are not necessarily protective of the environment.

The State disagrees with the Army's apparent representation that there are no chemical-specific ARARs regulating the internal remedial actions taken at the Arsenal. The Army's position is not consistent with the national experience in the application of CERCLA at other Superfund sites. Liability for CERCLA clean-ups is triggered by a release of a hazardous substance into the environment. The on-site vs. off-site location of the released hazardous substance is inconsequential. Accordingly, the Army's assertion that clean-up need only be measured at the facility boundaries is contrary to the past application and clear intent of CERCLA. Wastes which are regulated under RCRA are required to meet background levels for clean-up. These are chemical-specific requirements. There are a number of locations within the boundaries of the Arsenal where ARARs must be met. The point of ground water compliance for any remedial action is the vertical surface located at the hydraulically downgradient limit of the waste disposal area that extends into the uppermost aquifer underlying the source area. For example, for the Basin F and Basin A neck ground water intercept treatment systems, the point of compliance is the location of the downgradient reinjection wells where the treated water will be returned to the aquifer.

Nonetheless, even if the boundaries are accepted as ground water compliance points, the current proposal to use the boundaries of the Arsenal as the point of compliance is unworkable in that it does not address vertical pathways of migration and it fails to take into account that the boundary containment systems do not prevent all contaminants from migrating off-post.

The draft final document may also be read to indicate that a June 1988 is the cut-off date for consideration of promulgated regulations as ARARs. All criteria which are applicable or relevant and appropriate as of the date a final remedy is selected must be considered as ARARs. Inasmuch as the parties will engage in discussions about specific chemicals, the opportunity to present further comment is reserved.

The State notes that action levels determined through the integrated endangerment assessment must also play a critical role in the risk management and remedial selection process. ARARs and action levels must both be considered in the definition of clean-up standards. Because the EA is not complete and the action levels have not been included in Volume III, no specific comments

can be provided. However, the State reserves the right to raise any other substantive concerns it identifies upon issuance of a meaningful list of chemical-specific ARARs.

The State strongly urges that all chemical-specific ARARs be identified without regard to use restrictions. In addition, the State urges the Army to revise its arbitrary determination of land and resource use restrictions outside the RI/FS and EA processes. Finally, the State urges the supplementation of Volume III of the Chemical Index to include action levels derived through the EA process when those become available. Only with access to complete information relating to all pertinent criteria and "safe" exposure levels will the risk manager be in a position to make an informed decision about clean-up standards to be employed at the RMA.

Response to June 20, 1988 CDH Comments:

As an initial matter, although the State is not a signatory of the RI/FS Process Document, it is obligated to complete its review and comment on all pertinent RI/FS documents within 45 days by virtue of the State's decision on March 10, 1988 to not object to the comment periods specified in the Technical Program Plan and the accompanying schedule for the Parties and the State.

The On-Post Chemical-Specific ARAR document has been revised to designate all potential ARARs and to not utilize the existing RMA land use restrictions (which are to be continued pursuant to the proposed Consent Decree) as an ARAR screening mechanism for potential ARARs. Areas selected for protection of human health and the environment will be designated in the draft final Endangerment Assessment Report for application at the RMA boundaries and internal locations as warranted, along with human health protective and environmentally protective risk assessment values selected pursuant to other portions of the Endangerment Assessment. All chemical-specific ARARs and all human health based values will, in the context of the draft Endangerment Assessment Report, be subject to review and comment by EPA, Shell and the State.

The up-dating of chemical-specific ARARs in the context of the Endangerment Assessment will occur through July 1990 when the draft On-Post Endangerment Assessment Report is scheduled to be issued, and thereafter in the final version of that Endangerment Assessment Report. The list of On-Post chemical-specific ARARs will then be updated in the context of the draft and draft final versions of the On-Post Feasibility Study Report to be issued in 1992.

CDH'S July 8, 1988 Comments

Please find enclosed the State's Revised Proposed Amendments for the Basic Standards for Ground water, the State's Revised Proposed Amendments to the Basic Standards and Methodologies for Surface Waters and the original Notice for these proposed amendments.

As [counsel for the State] stated in the "How Clean is Clean" meeting of July 6, 1988, the State is convinced that an additional comment period is necessary prior to the Army's issuance of the final list of chemical-specific ARARs. [Counsel for the United States has] stated that the revised list will identify all potential chemical-specific ARARs. Thus the revised list must necessarily be quite different from the draft list. The State wants the opportunity to comment on the new list before it is finalized. Given the inadequacy of the draft list, as well as the importance of accurate identification of chemical-specific ARARs, the State does not believe an additional comment period will, if at all, impede the pace of the clean-up. Indeed, in areas of such importance, the Army's determination not to miss deadlines should not take precedence over the accuracy of the ARAR identification process.

Regardless, the State intends to submit comments to the revised list of identified chemical-specific ARARs within a reasonable time following its receipt of the revised list.

Response to CDH'S July 8, 1988 Comments:

The proposed amendments forwarded by CDH do not constitute promulgated State standards, requirements, criteria or limitations that are more stringent than any Federal standards, requirements, criteria or limitations. Plainly, such proposed amendments of existing regulations may change prior to promulgation, or may not ultimately be promulgated at all, and thus they do not warrant designation or consideration at this time as potential ARARs. Should such proposed regulations (or any other potentially pertinent State regulations) be adopted as final rules prior to the finalization of the Army's On-Post Feasibility Study Report in 1992, the Army is certain that CDH will promptly call such rules to the Army's attention. The Army will then determine whether such new regulations properly merit selection as ARARs.

While the State may submit additional information or suggest additional potential ARARs for consideration by the Parties at any time during the course of the On-Post RI/FS, it is important for the State to understand that such unilateral action does not operate to extend the relevant comment period, to constitute the timely identification of ARARs within the meaning of CERCLA

Section 121(d)(2)(A)(ii), to compel an Army response to such information, or even to necessitate Army consideration of the information except where it is practicable for the Army to do so.

In this instance, an additional comment period for the Parties and the State is unwarranted with respect to any newly designated ARARs in this Volume because the additional designation that occurs here is at the express behest of EPA and the State, and there will be an opportunity for review and comment on the Army's chemical-specific ARAR selection in the draft Endangerment Assessment Report to be issued in July 1990. In different circumstances an additional comment period would also be unwarranted because, consistent with the Federal courts' well-settled treatment of agency rulemakings, the process of review and comment must be limited if action is ever to result from the process; the whole point of review and comment is to encourage modification of an original proposal rather than to penalize such modification by viewing it as tacit authorization for further review and comment. The State should not lose sight of the fact that the Army is trying to fashion, at the earliest possible time, a clean-up remedy through the review and comment process; the review and comment process should not be seen as an end unto itself or as sanctioning a nearly perpetual dialogue that would necessarily result in the postponement of clean-up.

It is the determination of the Army that an additional comment period on the Army's final designated potential chemical-specific ARARs will impede the pace of clean-up and, if the Army was to hold such an additional comment period, the State would have to accept sole responsibility for delay of the clean-up. As explained in more detail in the first and second paragraphs of the response, here the Army's continuing commitment to meet the deadlines that the Parties and the State have previously agreed upon did not take precedence over the accurate and timely identification of ARARs since both responsibilities have been fulfilled through the timely issuance of this document.

### III. SHELL COMMENTS

#### A. General Shell Comments:

The Army's Chemical Index with ARARs, Volume 3, is a listing of proposed chemical-specific ARARs on a compound by compound basis. This document does not describe, however, the criteria for selecting the compounds for which potential ARARs are listed. Several compounds of concern at RMA have not been listed. For example, compounds with notable human toxicologic endpoints which should not be ignored are as follows:

Asbestos  
Benzyl chloride



Carbon disulfide  
Chloracetophenone  
Dibrom  
Dicyclopentadiene  
m-Dinitrobenzene  
Formaldehyde  
Lindane  
2-Hydroxybenzaldehyde  
Phenol  
Rotenone  
Selenium  
Sodium isopropylmethylphosphonate  
Tetrachloroethylene  
Toxaphene

Several compounds which are either naturally occurring or innocuous have been listed. Generic groups of compounds such as "phenolics" and non-chemicals such as wheat rust provide no useful information to the evaluation of the chemical-specific ARARs. Finally, a number of compounds should be screened from the document which are non-persistent in the soils or waters of RMA, such as ammonia, Freon 113, nitrogen oxide, and sulfur dioxide, as well as compounds which would not be present in the form listed in the index, such as hydrogen peroxide, hydrofluoric acid, magnesium, methanol, piperazine, phosgene, and sulfur dichloride. The compounds listed above are only a small portion of the problems which exist with each of the aforementioned groups of compounds.

The presence of compounds which have no human health impacts or which will be present to remediate should be taken out of this ARARs document. Therefore, the following groups of compounds should be removed from this document:

Innocuous materials;  
Naturally-occurring materials;  
Generic groups of compounds and non-chemicals; and  
Compounds which are non-persistent in the soils or waters of RMA.

Furthermore, the Army's ARARs document is confusing due to the format of the presentation and to the lack of applicable regulations for a large percentage of the compounds listed. The incorporation of erroneous synonyms and the absence of an index of synonyms add further confusion. For example, we question the reference which cites tetrachloroethane as a synonym for acetylene tetrachloride.

As stated on several previous occasions, we have concerns regarding the EPA Cancer Assessment Group, CAG, methodology. More specifically, we have concerns regarding the manner in which

CAG determines lifetime carcinogenic values, the uncertainties associated with CAG potency estimates, and the use of mouse liver tumor data to determine whether a compound is a carcinogen. Concerns regarding the use of values driven by CAG methodology have been expressed by Shell on previous occasions. The CAG methodology does not consider susceptibility frontiers and does not reflect all of the uncertainties in extrapolating data from animals to humans.

The current CAG methodology uses potency measures, such as unit risk and relative risks, which are based on upper bounds and not on fitted model values. These measurements do not differentiate between carcinogens on the basis of available experimental data about the shapes of the dose-response relationship. The inability to differentiate between risks is a serious deficiency in CAG methodology.

The Army lists many compounds which have no ARARs. Where no ARARs exist, a risk assessment should be conducted to arrive at a clean-up level.

#### Response to Shell General Comments:

This Volume lists potential ARARs for those chemical compounds listed in the preceding two volumes. It is not intended to constitute a second opinion on the toxicological and related determinations that led to the Army's selection of the chemicals for inclusion in those volumes. To the extent that the chemicals listed in the draft versions of Volumes I and II have been revised for this final version, the list of chemicals in this Volume have been revised correspondingly.

The synonyms listed in this volume have been reviewed and have been corrected as appropriate.

While the Army understands that Shell is dissatisfied with the regulations, standards, criteria or limitations that have been set, in whole or in part, pursuant to the CAG methodology, it is the Army's position that this is not the appropriate context to debate the merits of the CAG methodology that produced such regulations, standards, criteria or limitations. The Army and EPA have separately advised Shell to raise its CAG methodological concerns with EPA's Cancer Assessment Group, and EPA has arranged an opportunity for Shell to do so in a timely manner. If EPA determines to modify the CAG methodology during the course of the On-Post RMA RI/FS, such modification(s) will be applied in each relevant instance to the substances identified in the Chemical Index. Until such time, the Army will not look behind or question the CAG methodology that produced any of the chemical-specific regulations, standards, criteria or limitations that are identified as potential ARARs in this volume.

Regardless of whether potential ARARs have or have not been identified for a particular compound, the Army will conduct a risk assessment for that substance so that the clean-up levels selected will reflect full consideration of all potential ARARs and human and environmental risk levels.

1. Shell Comments on Aldrin:

Ground water ARAR:

Shell disagrees with the Army proposal of 0.003  $\mu\text{g}/\text{l}$  as an ARAR, which is the ambient water criterion for aldrin/dieldrin in navigable waters based on an FDA tolerance level of 0.3 ppm for fish times an application factor of 0.01. 40 C.F.R. § 129.100 (a)(3).

Shell also disagrees with an assumption underlying this criterion. That assumption is that "there is no demonstrated 'no effect level'." See 41 Fed. Reg. 23,584 (1976). As Shell has previously explained in comments, developments in modelling, such as those by Sielken, indicate that this assumption is invalid. In addition, a water quality criterion designed to provide for protection of aquatic life is not relevant and appropriate. The criterion was intended to address the impact of bioaccumulation in fish and their food sources on the biological transport of aldrin/dieldrin to birds and to mammals, including man. 41 Fed. Reg. 23,584 (1976).

Furthermore, aldrin and dieldrin are considered by the EPA CAG to be an animal carcinogen and a suspected human carcinogen. As stated in previous comments, numerous carcinogenicity tests in a variety of animals indicate that aldrin and dieldrin promote only liver tumors and the tumors develop only in mice. On the basis of this species-specific effect, aldrin and dieldrin are improperly categorized by the EPA as animal carcinogens.

Surface water ARAR:

Shell disagrees with the Army proposal of 3.0  $\mu\text{g}/\text{l}$  as an ARAR. The aquatic life value published at 45 Fed. Reg. 79325 is merely guidance, and does not constitute an ambient Water Quality Criterion. See 45 Fed. Reg. at 79,322 ("The aquatic life criteria specify both maximum and 24-hour average values. In those cases where there were insufficient data to allow the derivation of a criterion, narrative descriptions of apparent threshold levels for acute and/or chronic effects based on the available data are presented. These descriptions are intended to convey a sense of the degree of toxicity of the pollutant in the absence of a criterion recommendation.").

Shell questions why the Army did not consider the State surface water standard for Aldrin (.003 µg/l) promulgated pursuant to the Colorado Water Quality Control Act as a potential ARAR. See 5 Colo. Code Reg. 1002-8 3.8.5(2) hereinafter referred to as "South Platte Organics Standards" (1987).

Response to Shell Comments on Aldrin:

In this revised Volume, the Army has only designated potential ARARs for Aldrin. Whether the designated potential ARARs merit selection as ARARs will be determined in the context of the Endangerment Assessment Report.

While the Army understands Shell's CAG-related concerns, as explained in the Army's response to Shell's general comments, reassessment of the merits of the CAG methodology is a national EPA issue that must be resolved by EPA in the first instance. If EPA determines to modify the CAG methodology during the course of the On-Post RMA RI/FS, such modification(s) will be applied in each relevant instance to the substances identified in the Chemical Index.

The Army did not consider the South Platte Organics Standards for Aldrin because the State standard is not more stringent than the designated potential Federal ARARs and, while site-specific in focus, the State standard does not specifically pertain to the area that constitutes the RMA On-Post Operable Unit.

2. Shell Comments on Antimony and Antimony Chloride:

Ground water ARAR:

Shell disagrees with the Army proposal of 146 µg/l as an ARAR. The ambient water quality criteria is not adjusted for consumption of drinking water only, but includes human consumption of aquatic organisms as well. In the Guidance on Feasibility Studies under CERCLA at 5-13 (June 1985), EPA recognizes that adjusted values may be appropriate for Superfund sites with contaminated ground water.

Surface water ARAR:

Shell disagrees with the Army proposal of 1,600 µg/l as an ARAR. The Aquatic Life value published at 45 Fed. Reg. 79325 is merely guidance, and does not constitute an ambient Water Quality Criterion.

### Response to Shell Comments on Antimony and Antimony Chloride:

In this revised Volume, the Army has only designated potential ARARs for Antimony and Antimony Chloride. Whether the designated potential ARARs merit selection as ARARs will be determined in the context of the Endangerment Assessment Report.

### 3. Shell Comments on Arsenic:

#### Ground water ARAR:

Shell agrees with the Army proposal of 50  $\mu\text{g/l}$  as an ARAR. The National Academy of Sciences Drinking Water Committee, NAS, and the World Health Organization, WHO, have prepared recommendations and guidelines, respectively, for inorganic contaminant in drinking water. These recommendations are based upon non-carcinogenic, no observed adverse effects levels in humans with considerations for a margin of safety. The MCL is based upon guidance from these organizations and upon reasonable scientific studies and peer reviews of these studies.

The State Human Health standard is the same as the MCL, and is therefore not more stringent than the Federal standard.

#### Surface water (Army has inadvertently placed this information in the soil ARAR category) ARAR:

Shell disagrees with the Army proposal of 440  $\mu\text{g/l}$  as an ARAR. The aquatic life value published at 45 Fed. Reg. 79325 is merely guidance, and does not constitute an ambient Water Quality Criterion.

Shell questions why the Army did not consider the State surface water standard for Arsenic ( $.05 \mu\text{g/l}$ ) as a potential ARAR. See 5 Colo. Code Reg. 1002-8 p. 50-51 hereinafter referred to as "Site Specific Inorganic Standards" (1987) (site specific standards can be seen in segment 14 of the mainstem of the South Platte River).

### Response to Shell Comment on Arsenic:

In this revised Volume, the Army has only designated the AWQC as a potential ARAR for Arsenic. Whether this value merits selection as an ARAR will be determined in the context of the Endangerment Assessment Report.

The erroneous inclusion of surface water ARARs in the soil ARAR category in the draft has been corrected in this final version.

The Army did not consider the State surface water standard for Arsenic a potential ARAR because it is not more stringent than the designated potential Federal ARARs and because the State standard, which is site-specific in focus, does not specifically pertain to the area that constitutes the RMA On-Post Operable Unit.

The balance of Shell's comment concerns the areas of its agreement with the Army's initial determination and thus requires no further discussion in this context.

4. Shell Comments on Barium:

Ground water ARAR:

Shell agrees with the Army proposal of the MCL of 1,000  $\mu\text{g}/\text{l}$  as an ARAR for the reasons outlined in the arsenic comment. The State Human Health standard is the same as and is based upon the MCL, and is therefore not an ARAR. (A State regulation or requirement must be more stringent than Federal standards to be an ARAR).

Surface water ARAR:

Shell agrees with the Army in not selecting the State surface water standard for barium (1,000  $\mu\text{g}/\text{l}$ ) as a potential ARAR because it is not more stringent than the Federal MCL. See 5 Colo. Code Reg. 8002-8 p. 31 hereinafter referred to as "Table III Standards" (1987).

Response to Shell Comments on Barium:

Shell comments concern its agreement with the Army's initial determination for Barium and thus require no further discussion in this context.

5. Shell Comments on Benzene:

Ground water ARAR:

Shell disagrees with the Army proposal of the MCL of 5  $\mu\text{g}/\text{l}$  as an ARAR. The benzene MCL is based on CAG methodology and is therefore unacceptable for the reasons outlined above in the general comments.

Surface water ARAR:

Shell disagrees with the Army proposal of 5,300  $\mu\text{g}/\text{l}$  as an ARAR. The Aquatic Life value published at 45 Fed. Reg. 79326 is merely guidance, and does not constitute an ambient Water Quality Criterion.

## Response to Shell Comments on Benzene:

In this revised Volume, the Army has only designated potential ARARs for Benzene. Whether the designated potential ARARs merit selection as ARARs will be determined in the context of the Endangerment Assessment Report.

While the Army understands Shell's CAG-related concerns, as explained in the Army's response to Shell's general comments, reassessment of the merits of the CAG methodology is a national EPA issue that must be resolved by EPA in the first instance. If EPA determines to modify the CAG methodology during the course of the On-Post RMA RI/FS, such modification(s) will be applied in each relevant instance to the substances identified in the Chemical Index.

## 6. Shell Comments on Cadmium:

Ground water ARAR:

Shell agrees with the Army proposal of 10 µg/l as an ARAR for the reasons outlined in the arsenic comment.

The State Human Health standard is the same as and is based on the MCL, and is therefore not an ARAR.

Surface water ARAR:

Shell tentatively accepts the Army proposal of the AWQC (Aquatic Life) standard (max: e (1.05 [In hardness]) -1.73) as a potential ARAR. Shell questions why the Army did not consider the State surface water standard for cadmium (0.001 µg/l) as a potential ARAR. See Site Specific Inorganic Standards.

## Response to Shell Comments on Cadmium:

Shell's initial two comments concern its tentative agreement with the Army's initial determination for Cadmium and thus requires no further discussion in this context.

The Army did not consider the State surface water standard for Cadmium to be a potential ARAR because the State standard, which is site-specific in focus, does not specifically pertain to the area that constitutes the RMA On-Post Operable Unit.

## 7. Shell Comments on Carbon Tetrachloride:

Ground water ARAR:

Shell disagrees with the Army proposal of the MCL of 5 µg/l as an ARAR. The carbon tetrachloride MCL is based on CAG methodology and is therefore unacceptable for the reasons set forth above.

**Surface water ARAR:**

Shell disagrees with the Army proposal of 32,200 µg/l as an ARAR. The aquatic life value published at 45 Fed. Reg. 79327 is merely guidance, and does not constitute an ambient Water Quality Criterion.

**Response to Shell Comments on Carbon Tetrachloride:**

In this revised Volume, the Army has only designated potential ARARs for Carbon Tetrachloride. Whether the designated potential ARARs merit selection as ARARs will be determined in the context of the Endangerment Assessment Report.

While the Army understands Shell's CAG-related concerns, as explained in the Army's response to Shell's general comments, reassessment of the merits of the CAG methodology is a national EPA issue that must be resolved by EPA in the first instance. If EPA determines to modify the CAG methodology during the course of the On-Post RMA RI/FS, such modification(s) will be applied in each relevant instance to the substances identified in the Chemical Index.

**8. Shell Comments on Chlordane:**

**Ground water ARAR:**

Shell disagrees with the Army proposal of 0.46 ng/l, as an ARAR. The ambient Water Quality Criterion is based on the underlying assumption that there is no threshold level and is premised on CAG methodology. Further, it protects to the 10<sup>-6</sup> level. This level is more protective than several MCLs. Shell agrees with the Army in not including the State human health standard for Chlordane as a potential ARAR because it is driven by CAG methodology.

**Surface water ARAR:**

Shell tentatively accepts the Army proposal of the AWQC (Aquatic Life) standard (24 hr: 0043 µg/l; max: 2.4 µg/l) as a potential ARAR.

**Response to Shell Comments on Chlordane:**

In this revised Volume, the Army has only designated potential ARARs for Chlordane. Whether the designated potential



ARARs merit selection as ARARs will be determined in the context of the Endangerment Assessment Report.

While the Army understands Shell's CAG-related concerns, as explained in the Army's response to Shell's general comments, reassessment of the merits of the CAG methodology is a national EPA issue that must be resolved by EPA in the first instance. If EPA determines to modify the CAG methodology during the course of the On-Post RMA RI/FS, such modification(s) will be applied in each relevant instance to the substances identified in the Chemical Index.

The Army did not include the State standard for Chlordane as a potential ARAR because it is not more stringent than the designated potential Federal ARARs and because the State standard, which is site-specific in focus, does not specifically pertain to the area that constitutes the RMA On-Post Operable Unit. The Army did not exclude the State standard because it relies on CAG methodology.

Shell's third comment concerns its tentative agreement with the Army's initial determination for Aquatic Life and thus requires no further discussion in this context.

9. Shell Comments on Chlorinated Phenol:

Surface Water ARAR:

Shell disagrees with the Army proposal of 500,000  $\mu\text{g/l}$  as an ARAR. The aquatic life value published at 45 Fed. Reg. 79329 is merely guidance, and does not constitute an ambient Water Quality Criterion.

Response to Shell Comments on Chlorinated Phenol:

In this revised Volume, the Army has only designated potential ARARs for Chlorinated Phenol. Whether the designated potential ARARs merit selection as ARARs will be determined in the context of the Endangerment Assessment Report.

10. Shell Comments on Chlorobenzene:

Ground water ARAR:

The value cited by the Army is incorrect. The human health AWQC for chlorobenzene, as reported at 45 Fed. Reg. 79327-28, is 448  $\mu\text{g/l}$ . This value has been derived from non-referenced sources for the protection of human health. The references do not advise the reader on the toxicological endpoints considered or the assumptions incorporated in performing the calculations for values protective of human health. Furthermore, the standard

attempts to protect biota in surface water, which may not be appropriate for ground waters. The Army's proposed ground water ARAR limits also use more significant figures than what were presented in the original documents.

Surface water ARAR:

Shell disagrees with the Army proposal of 250  $\mu\text{g}/\text{l}$  as an ARAR. The aquatic life value published at 45 Fed. Reg. 79237 is merely guidance, and does not constitute an ambient Water Quality Criterion.

Response to Shell Comments on Chlorobenzene:

The AWQC level for human health has been corrected.

In this revised Volume, the Army has only designated potential ARARs for Chlorobenzene. Whether the designated potential ARARs merit selection as ARARs will be determined in the context of the Endangerment Assessment Report.

11. Shell Comments on Chloroform:

Ground water ARAR:

Shell tentatively accepts the MCL of 100  $\mu\text{g}/\text{l}$  as the proposed MCL. The MCL is based upon the median range of chloroform concentrations in U.S. drinking water pursuant to an EPA study.

Response to Shell Comments on Chloroform:

Shell's comments concern its tentative agreement with the Army's initial determination for Chloroform and thus requires no further discussion in this context.

12. Shell Comments on Chromium:

Ground water ARAR:

Shell agrees with the Army proposal of the MCL of 50  $\mu\text{g}/\text{l}$  as an ARAR for the reasons outlined in the arsenic comment. The State Human Health standard is the same as and is based on the MCL, and is therefore not an ARAR.

Surface water ARAR:

Shell tentatively accepts the Army proposal of the AWQC (Aquatic Life) standard as a potential ARAR. Shell questions why the Army did not consider the State surface water standards for

Cr III (50 µg/l) and Cr VI (25 µg/l) as potential ARARs. See Site Specific Inorganic Standards.

Response to Shell Comments on Chromium:

Shell's comments concern its agreement with and tentative acceptance of the Army's initial determination for Chromium and thus requires no further discussion in this context.

The Army did not consider the State surface water standard for Chromium III to be a potential ARAR because it is not more stringent than the designated potential Federal ARARs and because the State standard, which is site-specific in focus, does not specifically pertain to the area that constitutes the RMA On-Post Operable Unit. The State surface water standard for Chromium VI was not determined to be a potential ARAR because, while site-specific in focus, the State standard does not specifically pertain to the area that constitutes the RMA On-Post Operable Unit.

13. Shell Comments on Copper:

Ground water ARAR:

Shell agrees with the Army in not selecting the State Water Quality Standards for Secondary Drinking Water (1 mg/l) and Agricultural (.2 mg/l) uses as potential ARARs. The secondary drinking water standard is premised on the AWQC for human health (1 mg/l) which is based upon organoleptic data. Organoleptic concerns do not relate to protection of public health and environment and the agricultural value is not based on human health concerns.

Surface water ARAR:

Shell tentatively agrees with the Army proposal of the AWQC (Aquatic Life) standard as a potential ARAR. Shell questions why the Army did not consider the State surface water standard for copper (25 µg/l) as a potential ARAR. See Site Specific Inorganic Standards.

Response to Shell Comments on Copper:

Shell's comments concern its agreement and tentative agreement with the Army's initial determination for Copper and thus requires no further discussion in this context.

The State surface water standard for Copper was not determined to be a potential ARAR because it is not more stringent than the designated potential Federal ARARs and because, while site-specific in focus, the State standard does

not specifically pertain to the area that constitutes the RMA On-Post Operable Unit.

14. Shell Comments on Cyanide and Cyanogen Chloride:

Ground water ARAR:

Shell disagrees with the Army proposal of 200 µg/l as an ARAR. The ambient water quality criteria is not adjusted for consumption of drinking water only, but includes consumption of aquatic organisms as well. The State Human Health standard is the same as and is based on the AWQC, and is therefore not an ARAR.

Surface water ARAR:

Shell tentatively accepts the Army proposal of the AWQC (Aquatic Life) (24 hr: 3.5 µg/l; max: 52 µg/l) standard as a potential ARAR. Shell questions why the Army did not consider the State surface water standard for cyanide (5 µg/l) as a potential ARAR. See Site Specific Inorganic Standards.

Response to Shell Comment on Cyanide and Cyanogen Chloride:

In the revised Volume, the Army has only designated potential ARARs for Cyanide and Cyanogen Chloride. Whether the designated potential ARARs merit selection as ARARs will be determined in the context of the Endangerment Assessment Report.

The Army did not consider the State surface water standard for Cyanide to be a potential ARAR because it is not more stringent than the designated potential Federal ARARs and because the State standard, which is site-specific in focus, does not specifically pertain to the area that constitutes the RMA On-Post Operable Unit.

15. Shell Comments on DDE:

100 DDE

Shell disagrees that the water quality criterion of .001 µg/l should be selected as an ARAR. 40 C.F.R. § 129.101(a)(3). It rejects the assumption underlying this criterion that there is not a demonstrated no effect level. See 41 Fed. Reg. 23587 (1976). As Shell has previously explained in comments, developments in modelling, such as the Sielken model, indicate that the assumption is invalid. In addition, a water quality criterion designed to provide for protection of aquatic life is not relevant and appropriate. The criterion was intended to address bioaccumulation in aquatic organisms. 41 Fed. Reg. 23587 (1976).

#### Surface water ARAR:

Shell disagrees with the Army proposal of 1,050  $\mu\text{g/l}$  as an ARAR. The aquatic life value published at 45 Fed. Reg. 79331 is merely guidance, and does not constitute an ambient water quality criterion. Shell questions why the Army did not consider the State surface water standard for DDE (.001  $\mu\text{g/l}$ ) as a potential ARAR. See South Platte Organics Standards.

#### Response to Shell Comments on DDE:

In the revised Volume, the Army has only designated potential ARARs for DDE. Whether the designated potential ARARs merit selection as ARARs will be determined in the context of the Endangerment Assessment Report.

While the Army understands Shell's CAG-related concerns, as explained in the Army's response to Shell's general comments, reassessment of the merits of the CAG methodology is a national EPA issue that must be resolved by EPA in the first instance. If EPA determines to modify the CAG methodology during the course of the On-Post RMA RI/FS, such modification(s) will be applied in each relevant instance to the substances identified in the Chemical Index.

The Army did not consider the South Platte Organics Standard for DDE to be a potential ARAR because the State standard is not more stringent than the designated potential Federal ARARs and because the State standard, which is site-specific in focus, does not specifically pertain to the area that constitutes the RMA On-Post Operable Unit.

#### 16. Shell Comments on DDT:

##### Ground water ARAR:

Shell disagrees that the water quality criterion of 0.0024  $\mu\text{g/l}$  should be selected as an ARAR. 40 C.F.R. § 129.101(a)(3). It rejects the assumption underlying this criterion that there is not a demonstrated no effect level. See 41 Fed. Reg. 23587 (1976). As Shell has previously explained in comments, developments in modelling, such as the Sielken model, indicate that the assumption is invalid. In addition, a water quality criterion designed to provide for protection of aquatic life is not relevant and appropriate. The criterion was intended to address bioaccumulation in aquatic organisms. 41 Fed. Reg. 23587 (1976).

##### Surface water ARAR:

Shell tentatively accepts the Army proposal of the AWQC (Aquatic Life) standard (24 hr: 0.0010  $\mu\text{g/l}$  and 1.1  $\mu\text{g/l}$  at any one time) as a potential ARAR. Shell agrees with the Army in not selecting the State surface water standard for DDT (.001  $\mu\text{g/l}$ ) as a potential ARAR because it is not more stringent than the water quality criteria. See South Platte Organics Standards.

Response to Shell Comments on DDT:

In this revised Volume, the Army has only designated potential ARARs for DDT. Whether the designated potential ARARs merit selection as ARARs will be determined in the context of the Endangerment Assessment Report.

While the Army understands Shell's CAG-related concerns, as explained in the Army's response to Shell's general comments, reassessment of the merits of the CAG methodology is a national EPA issue that must be resolved by EPA in the first instance. If EPA determines to modify the CAG methodology during the course of the On-Post RMA RI/FS, such modification(s) will be applied in each relevant instance to the substances identified in the Chemical Index.

Shell's comments expressing its tentative acceptance of the Army's initial determination with respect to surface water requires no further discussion in this context.

17. Shell Comments on p-Dichlorobenzene:

Ground water ARAR:

Shell disagrees with the Army proposal of 400  $\mu\text{g/l}$  as an ARAR. The ambient water quality criterion is not adjusted for consumption of aquatic organisms as well.

Surface water ARAR:

Shell disagrees with the Army proposal of 763  $\mu\text{g/l}$  as an ARAR. The Aquatic Life value published at 45 Fed. Reg. 79332 is merely guidance, and does not constitute an ambient Water Quality Criterion.

Response to Shell Comments on p-Dichlorobenzene:

In this revised Volume, the Army has only designated potential ARARs for p-Dichlorobenzene. Whether the designated potential ARARs merit selection as ARARs will be determined in the context of the Endangerment Assessment Report.

18. Shell Comments on 1,2-Dichloroethane:

#### Ground water ARAR:

Shell disagrees with the Army proposal of the MCL of 5  $\mu\text{g}/\text{l}$  as an ARAR. This MCL is driven by CAG methodology and is therefore unacceptable to Shell.

#### Response to Shell Comments on 1,2-Dichloroethane:

In this revised Volume, the Army has only designated potential ARARs for 1,2-Dichloroethane. Whether the designated potential ARARs merit selection as ARARs will be determined in the context of the Endangerment Assessment Report.

While the Army understands Shell's CAG-related concerns, as explained in the Army's response to Shell's general comments, reassessment of the merits of the CAG methodology is a national EPA issue that must be resolved by EPA in the first instance. If EPA determines to modify the CAG methodology during the course of the On-Post RMA RI/FS, such modification(s) will be applied in each relevant instance to the substances identified in the Chemical Index.

#### 19. Shell Comments on 1,1-Dichloroethylene:

##### Ground water ARAR:

Shell disagrees with the Army proposal of the MCL of 7  $\mu\text{g}/\text{l}$  as an ARAR. This MCL is driven by CAG methodology and is therefore unacceptable to Shell.

##### Surface water ARAR:

Shell disagrees with the Army proposal of 11,600  $\mu\text{g}/\text{l}$  as an ARAR. The aquatic life value published at 45 Fed. Reg. 79332 is merely guidance, and does not constitute an ambient Water Quality Criterion.

#### Response to Shell Comments on 1,1-Dichloroethylene:

In this revised Volume, the Army has only designated potential ARARs for 1,1-Dichloroethylene. Whether the designated potential ARARs merit selection as ARARs will be determined in the context of the Endangerment Assessment Report.

While the Army understands Shell's CAG-related concerns, as explained in the Army's response to Shell's general comments, reassessment of the merits of the CAG methodology is a national EPA issue that must be resolved by EPA in the first instance. If EPA determines to modify the CAG methodology during the course of the On-Post RMA RI/FS, such modification(s) will be applied in

each relevant instance to the substances identified in the Chemical Index.

20. Shell Comments on 1,2-Dichloroethylene:

Surface water ARAR:

Shell disagrees with the Army proposal of 11,600  $\mu\text{g}/\text{l}$  as an ARAR. The aquatic life value published at 45 Fed. Reg. 79332 is merely guidance, and does not constitute an ambient Water Quality Criterion.

Response to Shell Comments on 1,2-Dichloroethylene:

In this revised Volume, the Army has only designated potential ARARs for 1,2-Dichloroethylene. Whether the designated potential ARARs merit selection as ARARs will be determined in the context of the Endangerment Assessment Report.

21. Shell Comments on 1,2-Dichloropropane:

Ground water ARAR:

Shell disagrees with the Army proposal of 87  $\mu\text{g}/\text{l}$  as an ARAR. The AWQC referred to by the Army is for 1,2-Dichloropropene, and is inapplicable to this compound.

Surface water ARAR:

Shell disagrees with the Army proposal of 5,700  $\mu\text{g}/\text{l}$  as an ARAR. The Aquatic Life value published at 45 Fed. Reg. 79333 is merely guidance, and does not constitute an ambient Water Quality Criterion.

Response to Shell Comments on 1,2-Dichloropropane:

The Army has omitted the limit for 1,2-Dichloropropene as a potential ARAR for 1,2-Dichloropropane.

In this revised Volume, the Army has only designated potential ARARs for 1,2-Dichloropropane. Whether the designated potential ARARs merit selection as ARARs will be determined in the context of the Endangerment Assessment Report.

22. Shell Comments on cis-1,3-Dichloropropene:

Ground water ARAR:

Shell rejects the AWQC for this compound of 87  $\mu\text{g}/\text{l}$  as an ARAR (improperly referred to by the Army above). The ambient



Water Quality Criterion is not adjusted for consumption of water only, but includes consumption of aquatic organisms as well.

Response to Shell Comments on cis-1,3-Dichloropropene:

The levels for this compound have been corrected in the revised Volume.

In this revised Volume, the Army has only designated potential ARARs for cis-1,3-Dichloropropene. Whether the designated potential ARARs merit selection as ARARs will be determined in the context of the Endangerment Assessment Report.

23. Shell Comments on Dieldrin:

Ground water ARAR:

Shell disagrees with the Army proposal of 0.003  $\mu\text{g}/\text{l}$  as an ARAR. See the comments on aldrin.

Surface water ARAR:

Shell tentatively accepts the Army proposal of the AWQC (Aquatic Life) standard as a potential ARAR. Shell agrees with the Army in not including the State surface water standard for dieldrin (.003  $\mu\text{g}/\text{l}$ ) as a potential ARAR because it is not more stringent than the Federal standard. See South Platte Organics Standards.

Response to Shell Comments on Dieldrin:

In this revised Volume, the Army has only designated potential ARARs for Dieldrin. Whether the designated potential ARARs merit selection as ARARs will be determined in the context of the Endangerment Assessment Report.

Shell's comments expressing its tentative acceptance of the Army's initial determination with respect to surface water requires no further discussion in this context.

24. Shell Comments on Endrin:

Ground water ARAR:

Shell disagrees with the Army proposal of 0.2  $\mu\text{g}/\text{l}$  as an ARAR. The State Human Health standard is the same as and is based on the MCL, and is therefore not an ARAR. The MCL for endrin is based upon an interim standard (1975) in tap water. The standard is intended to be protective of teratogenic and reproductive health effects.

#### Surface water ARAR:

Shell tentatively accepts the Army proposal of the AWQC (Aquatic Life) standard (24 hr: .0023  $\mu\text{g/l}$ ; max: .037  $\mu\text{g/l}$ ) as a potential ARAR. Shell agrees with the Army in not including the State surface water standard for endrin (.004  $\mu\text{g/l}$ ) as a potential ARAR because it is not more stringent than the AWQC. See South Platte Organics Standards.

#### Response to Shell Comments on Endrin:

In this revised Volume, the Army has only designated potential ARARs for Endrin. Whether the designated potential ARARs merit selection as ARARs will be determined in the context of the Endangerment Assessment Report.

While the Army understands Shell's CAG-related concerns, as explained in the Army's response to Shell's general comments, reassessment of the merits of the CAG methodology is a national EPA issue that must be resolved by EPA in the first instance. If EPA determines to modify the CAG methodology during the course of the On-Post RMA RI/FS, such modification(s) will be applied in each relevant instance to the substances identified in the Chemical Index.

Shell's comments expressing its tentative acceptance of the Army's initial determination for Aquatic Life require no further discussion in this context.

#### 25. Shell Comments on Ethylbenzene:

##### Ground water ARAR:

Shell disagrees with the Army proposal of 1,400  $\mu\text{g/l}$  as an ARAR. This value has been derived from non-referenced sources for the protection of human health. The references do not advise the reader on the toxicological endpoints considered or the assumptions incorporated in performing the calculations for values protective of human health. Furthermore, considerations which are protective of biota in Army's proposed ground water ARAR limits also use more significant figures than what were presented in the original documents.

##### Surface water ARAR:

Shell disagrees with the Army proposal of 32,000  $\mu\text{g/l}$  as an ARAR. The AWQC (Aquatic Life) published at 45 Fed. Reg. 79334 is merely guidance, and not an ambient Water Quality Criterion.

#### Response to Shell Comments on Ethylbenzene:

In this revised Volume, the Army has only designated potential ARARs for Ethylbenzene. Whether the designated potential ARARs merit selection as ARARs will be determined in the context of the Endangerment Assessment Report.

While the Army understands Shell's CAG-related concerns, as explained in the Army's response to Shell's general comments, reassessment of the merits of the CAG methodology is a national EPA issue that must be resolved by EPA in the first instance. If EPA determines to modify the CAG methodology during the course of the On-Post RMA RI/FS, such modification(s) will be applied in each relevant instance to the substances identified in the Chemical Index.

The ground water ARAR limits cited in this volume have been revised to use the same significant figures as presented in the original.

26. Shell Comments on Fluoride:

Ground water ARAR:

Shell tentatively agrees with the Army proposal of the MCL of 400  $\mu\text{g}/\text{l}$  as an ARAR. The State Standard for Human Health is the same as the MCL and therefore is not an ARAR.

Response to Shell Comments on Fluoride:

Shell's comments expressing its tentative agreement with the Army's initial determination for Fluoride requires no further discussion in this context.

27. Shell Comments on Heptachlor:

Ground water ARAR:

Shell disagrees with the Army proposal of 0.028  $\text{ng}/\text{l}$ , as an ARAR. The ambient Water Quality Criterion is based on the underlying assumption that there is no threshold value and is therefore unacceptable to Shell.

Surface water ARAR:

Shell tentatively accepts the Army proposal of the AWQC (Aquatic Life) standard (24 hr: 0.0038  $\mu\text{g}/\text{l}$ ; max: 0.52  $\mu\text{g}/\text{l}$ ) as a potential ARAR. Shell agrees with the Army in not considering the State surface water standards for heptachlor (.001  $\mu\text{g}/\text{l}$ , Aquatic Life; .2  $\mu\text{g}/\text{l}$ , Water Supply) as potential ARARs. These standards are driven by CAG methodology. See South Platte Organics Standards.

### Response to Shell's Comments on Heptachlor:

In this revised Volume, the Army has only designated potential ARARs for Heptachlor. Whether the designated potential ARARs merit selection as ARARs will be determined in the context of the Endangerment Assessment Report.

While the Army understands Shell's CAG-related concerns, as explained in the Army's response to Shell's general comments, reassessment of the merits of the CAG methodology is a national EPA issue that must be resolved by EPA in the first instance. If and when EPA determines to modify the CAG methodology during the course of the On-Post RMA RI/FS, such modification(s) will be applied in each relevant instance to the substances identified in the Chemical Index.

The Army did not consider the state surface water standard for Heptachlor because, while site-specific in focus, it does not specifically pertain to the area that constitutes the RMA On-Post Operable Unit.

Shell's comments expressing its tentative acceptance of the Army's initial determination for Aquatic Life requires no further discussion in this context.

### 28. Shell Comments on Hexachlorocyclopentadiene:

#### Ground water ARAR:

Shell rejects the Army proposal of 206  $\mu\text{g}/\text{l}$  as an ARAR because it has not been adjusted for drinking water only.

#### Surface water ARAR:

Shell disagrees with the Army proposal of 5.2  $\mu\text{g}/\text{l}$  as an ARAR. The AWQC (Aquatic Life) value published at 45 Fed. Reg. 79,335-36 is merely guidance, and does not constitute an ambient Water Quality Criterion.

### Response to Shell Comments on Hexachlorocyclopentadiene:

In this revised Volume, the Army has only designated potential ARARs for Hexachlorocyclopentadiene. Whether the designated potential ARARs merit selection as ARARs will be determined in the context of the Endangerment Assessment Report.

### 29. Shell Comments on Lead:

#### Air ARAR:

Shell questions why the Army did not consider the State regulations for the control of Hazardous Air Pollutants regarding lead as a potential ARAR. See 5 Colo. Code Reg. 1001-10 p. 52.

Ground water ARAR:

Shell tentatively supports the MCL of 50  $\mu\text{g}/\text{l}$  as a potential ARAR for the reasons outlined in the arsenic comment.

Surface water ARAR:

Shell tentatively accepts the Army proposal of the AWQC (Aquatic Life) standard (24 hr: e(2.35 [In (hardness)] -9.48]; max: e(1.22 [In hardness]) -0.47) as an ARAR. Shell agrees with the Army in not selecting the State surface water standard for lead (25  $\mu\text{g}/\text{l}$ ) as a potential ARAR because it is not more stringent than the Federal AWQC. See Site Specific Inorganic Standards.

Response to Shell Comments on Lead:

The Army did not consider the lead standard in the CDH regulations for the Control of Hazardous Air Pollutants because this standard is not more stringent than the potential Federal ARARs.

Shell's comments expressing its tentative acceptance of the Army's initial ground water and surface water determinations requires no further discussion in this context.

30. Shell Comments on Mercury:

Ground water ARAR:

Shell agrees with the Army proposal of the MCL of 2  $\mu\text{g}/\text{l}$  as an ARAR for the reasons outlined in the arsenic comments. The state Clean Water Standard for Human Health is the same as and is based on the MCL, and therefore also is not an ARAR.

Surface water ARAR:

Shell tentatively agrees with the Army proposal of the AWQC (Aquatic Life) standard (24 hr: .00057  $\mu\text{g}/\text{l}$ ; max: .0017  $\mu\text{g}/\text{l}$ ) as an ARAR. Shell agrees with the Army in not selecting the State surface water standard for mercury (.05  $\mu\text{g}/\text{l}$ ) as a potential ARAR because it is not more stringent than the Federal AWQC. See Site Specific Inorganic Standards.

Response to Shell Comments on Mercury:

Shell's comments expressing agreement with and tentative acceptance of the Army's initial ground water and surface water determinations require no further discussion in this context.

31. Shell Comments on Nitrate:

Ground water ARAR:

Shell tentatively agrees that the MCL (10,000 µg/l) for this chemical should be treated as an ARAR.

Surface water ARAR:

Shell agrees with the Army in not selecting the State surface water standard for nitrates (10,000 ng/l) as a potential ARAR because it is the same as the Federal water quality criteria (1976) and therefore is not more stringent. See Site Specific Inorganic Standards.

Response to Shell Comments on Nitrate:

Shell's comments expressing tentative agreement and agreement with the Army's initial ground water and surface water determinations requires no further discussion in this context.

32. Shell Comments on 4-Nitrophenol, 4-Nitrophenol, sodium salt and p-Nitrophenol diethyl phosphate

Surface water ARAR:

Shell disagrees with the Army proposal of 230 µg/l as an ARAR. The Aquatic Life value published at 45 Fed. Reg. 79337 is merely guidance, and does not constitute an ambient Water Quality Criterion.

Response to Shell Comments on 4-Nitrophenol, 4-Nitrophenol, sodium salt and p-Nitrophenol diethyl phosphate

In this revised Volume, the Army has only designated potential ARARs for 4-Nitrophenol, 4-Nitrophenol, sodium salt and p-Nitrophenol diethyl phosphate. Whether the designated potential ARARs merit selection as ARARs will be determined in the context of the Endangerment Assessment Report.

33. Shell Comments on p, p-TDE

Ground water ARAR:

Shell disagrees with the Army proposal of 0.0024 ng/l as an ARAR. 40 C.F.R. § 129.101(a)(3). It rejects the assumption underlying this criterion that there is not a demonstrated no

effect level. See 41 Fed. Reg. 23587 (1976). As Shell has previously explained in comments, developments in modelling, such as the Sielken model, indicate that the assumption is invalid. In addition, a Water Quality Criterion designed to provide for protection of aquatic life is not relevant and appropriate. The criterion was intended to address bioaccumulation in aquatic organisms. 41 Fed. Reg. 23587 (1976).

#### Surface water ARAR:

Shell disagrees with the Army proposal of 0.6  $\mu\text{g/l}$  as an ARAR. The aquatic life value published at 45 Fed. Reg. 79331 is merely guidance, and does not constitute an ambient Water Quality Criterion.

#### Response to Shell Comments on p, p-TDE

In this revised Volume, the Army has only designated potential ARARs for p, p-TDE. Whether the designated potential ARARs merit selection as ARARs will be determined in the context of the Endangerment Assessment Report.

While the Army understands Shell's CAG-related concerns, as explained in the Army's response to Shell's general comments, reassessment of the merits of the CAG methodology is a national EPA issue that must be resolved by EPA in the first instance. If EPA determines to modify the CAG methodology during the course of the On-Post RMA RI/FS, such modification(s) will be applied in each relevant instance to the substances identified in the Chemical Index.

#### 34. Shell Comments on Toluene:

Ground water (Army has inadvertently placed this information in the Air ARAR category) ARAR:

Shell disagrees with the Army proposal of 14,300  $\mu\text{g/l}$  as an ARAR, since it has not been adjusted for drinking water only.

#### Surface water ARAR:

Shell disagrees with the Army proposal of 17,500  $\mu\text{g/l}$  as an ARAR. The Aquatic Life value published at 45 Fed. Reg. 79,340 is merely guidance, and does not constitute an ambient Water Quality Criterion.

#### Response to Shell Comments on Toluene:

The error identified by Shell has been corrected in this revised Volume.

In this revised Volume, the Army has only designated potential ARARs for Toluene. Whether the designated potential ARARs merit selection as ARARs will be determined in the context of the Endangerment Assessment Report.

35. Shell Comments on 1,1,1-Trichloroethane:

Ground water ARAR:

Shell disagrees that the MCL for this chemical should be selected as an ARAR because it is driven by CAG methodology.

Response to Shell Comments on 1,1,1-Trichloroethane:

In this revised Volume, the Army has only designated potential ARARs for 1,1,1-Trichloroethane. Whether the designated potential ARARs merit selection as ARARs will be determined in the context of the Endangerment Assessment Report.

While the Army understands Shell's CAG-related concerns, as explained in the Army's response to Shell's general comments, reassessment of the merits of the CAG methodology is a national EPA issue that must be resolved by EPA in the first instance. If EPA determines to modify the CAG methodology during the course of the On-Post RMA RI/FS, such modification(s) will be applied in each relevant instance to the substances identified in the Chemical Index.

36. Shell Comments on Trichloroethylene:

Ground water ARAR:

Shell disagrees with the Army proposal of 5 µg/l as an ARAR. The number has been derived via CAG methodology, and is therefore unacceptable to Shell.

Surface water ARAR:

Shell disagrees with the Army proposal of 45,000 µg/l as an ARAR. The aquatic life value published at 45 Fed. Reg. 79341 is merely guidance, and does not constitute an ambient Water Quality Criterion.

Response to Shell Comments on Trichloroethylene:

In this revised Volume, the Army has only designated potential ARARs for Trichloroethylene. Whether the designated potential ARARs merit selection as ARARs will be determined in the context of the Endangerment Assessment Report.



While the Army understands Shell's CAG-related concerns, as explained in the Army's response to Shell's general comments, reassessment of the merits of the CAG methodology is a national EPA issue that must be resolved by EPA in the first instance. If EPA determines to modify the CAG methodology during the course of the On-Post RMA RI/FS, such modification(s) will be applied in each relevant instance to the substances identified in the Chemical Index.

37. Shell Comments on Vinyl Chloride:

Surface water ARAR:

Shell disagrees with the Army proposal of 2  $\mu\text{g}/\text{l}$  as an ARAR. The number has been derived via CAG methodology, and is therefore unacceptable to Shell.

Response to Shell Comments on Vinyl Chloride:

In this revised Volume, the Army has only designated potential ARARs for Vinyl Chloride. Whether the designated potential ARARs merit selection as ARARs will be determined in the context of the Endangerment Assessment Report.

While the Army understands Shell's CAG-related concerns, as explained in the Army's response to Shell's general comments, reassessment of the merits of the CAG methodology is a national EPA issue that must be resolved by EPA in the first instance. If EPA determines to modify the CAG methodology during the course of the On-Post RMA RI/FS, such modification(s) will be applied in each relevant instance to the substances identified in the Chemical Index.

38. Shell Comments on Zinc and Zinc Oxide:

Surface water ARAR:

Shell tentatively agrees with the Army proposal of the AWQC (Aquatic Life) standard (24 hr: 47  $\mu\text{g}/\text{l}$ ; max:  $e(0.83 [\text{In hardness}]) - 1.90$ ) as a potential ARAR. Shell agrees with the Army in not considering the State surface water standard for zinc (110  $\mu\text{g}/\text{l}$ ) as a potential ARAR because it is not more stringent than the Federal AWQC. See Site Specific Inorganic Standards.

Response to Shell Comments on Zinc and Zinc Oxide:

Shell's comments expressing tentative agreement and agreement with the Army's initial surface water determination requires no further discussion in this context.

COMMENTS ON THE CHEMICAL-SPECIFIC ARARs



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII

999 18th STREET - SUITE 500  
DENVER, COLORADO 80202-2405

JUN 20 1988

Ref: 8RC

BY EXPRESS MAIL

Colonel Wallace N. Quintrell, Program Manager  
Office of the Program Manager  
for Rocky Mountain Arsenal  
Department of the Army  
ATTN: AMXRM-PM: Colonel Wallace N. Quintrell  
Building E4460  
Aberdeen Proving Ground, Maryland 21010-5401

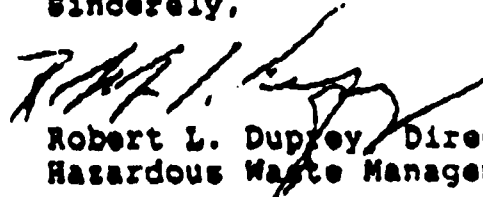
RE: Chemical-Specific Applicable or Relevant and Appropriate  
Requirements (ARARs) for the On-Post Operable Unit  
(Chemical Index, Volume III)

Dear Colonel Quintrell:

U.S. EPA, Region VIII received a copy of the above-referenced document on May 4, 1988. We have reviewed that document and have a number of comments, which are enclosed herewith.

If you have any questions regarding this matter, please feel free to contact Jessie Goldfarb, Assistant Regional Counsel (FTS-564-7529), or Connally Mears (FTS-564-1528).

Sincerely,



Robert L. Duprey, Director  
Hazardous Waste Management Division

Enclosure

cc: Thomas P. Looby, CDH  
David Shelton, CDH  
Lt. Col. Scott P. Isaacson  
Chris Hahn, Shell Oil Company  
R.D. Lundahl, Shell Oil Company  
Thomas Bick, Department of Justice  
David Anderson, Department of Justice  
Wesley Chiaro, EBASCO

COMMENTS ON CHEMICAL-SPECIFIC ARARS FOR  
THE ON-POST OPERABLE UNIT (CHEMICAL INDEX, VOLUME III)

1. We are quite troubled by the following statements made by the Army in Volume III of the Chemical Index:

-- "[W]here human exposure is precluded due to the operation of the existing RMA use restrictions...., no regulations have been designated as ARARs for non-existent pathways for potential human exposure";

-- "[W]ith respect to the designated Groundwater ARARs and all pertinent limits, it should be emphasized that there are no such ARARs that pertain to the On-Post Operable Unit, except at the RMA boundaries, due to the operation of the existing and continuing RMA use restrictions that preclude human consumption of the groundwater.... Nevertheless, pertinent chemical-specific National Primary Drinking Water (NPDW) regulations, 40 C.F.R. Part 141, are designated as applicable for setting clean-up levels at the RMA boundaries.... While the requisite jurisdictional requirements... of the Clean Water Act's Toxic Pollutant Effluent Standards (TPES), 40 C.F.R. Part 129, make such regulations inapplicable here, pertinent provisions of these regulations are nevertheless designated as relevant and appropriate for purposes of chemical-specific clean-up levels at the RMA boundaries";

-- the existing and continuing restrictions on RMA use would render the chemical-specific ARARs pertaining to chemicals found in the RMA soils unnecessary; and

-- "[T]here are no Surface Water ARARs that pertain to human consumption because of the existing and continuing restrictions on RMA use."

One concern is that, especially during the initial ARAR identification phase, it is inappropriate to eliminate potential ARARs on-post based on the land use restrictions of the proposed Consent Decree. Certainly we all agree that the use restrictions do not allow or intend that the contamination on RMA will not be cleaned up; however, the language cited above could support such an interpretation.

Chemical-specific ARARs and/or risk-based action levels need to be identified for all media, including ground and surface water, soils, and air on RMA, for use in determining where contamination needs to be addressed, what levels of cleanup need to be attained, and what performance levels are necessary from selected treatment alternatives to protect both wildlife and people during allowed uses. What ARARs or risk-based action levels are ultimately selected, and when and where they must be met, will be influenced by the land use restrictions. But we

cannot say that, for example, a water-related ARAR or action level would never apply to groundwater at any location or time on RMA.

The ARAR selection process is an iterative one. The ultimate risk management decision for what to clean and to what levels should be based on such considerations as protectiveness, permanence, risk levels and/or ARARs, technological limitations, costs, and how those factors are affected by the land use restrictions. This is not the time to eliminate potential ARARs based on the land use restrictions. The language in the draft document must be corrected.

Our second major concern is the implication in the language cited above, as well as elsewhere in the draft document, that compliance with ARARs or other action limits will only be necessary at the boundaries of RMA. While we agree that they certainly will apply there, they also will be necessary at internal locations where management of wastes occurs. Consider two examples:

- ARARs for tanks or drums storing wastes on RMA would be meaningless if applied at the boundaries.
- Treatment technology that might involve reinjection of groundwater should have treatment sufficient to attain any selected ARAR(s) or action levels at the point and time of reinjection. It would be inappropriate to select such treatment but not monitor its performance against selected ARARs or other action levels.

We do not believe compliance at the boundaries to be the intent of any party or the Decree. The language in the draft document must be corrected.

2. The document states that "[W]here differing levels exist for human health, aquatic life, vegetation etc., the value for human health generally is selected as the most protective of human health and the environment." However, there are several contaminants for which levels which are protective of human health are not protective for aquatic life. These include cadmium, chromium, copper, lead and zinc. Therefore, environment-based ARARs should be used for contaminants which might threaten aquatic life.

3. The document also states that Ambient Water Quality Criteria (AWQC), 45 Fed. Reg. 79318 (1980), are designated as applicable ARARs that will be met at human health protective levels where there are no pertinent NPDW or TPES provisions. The 1980 AWQC were revised in a 1986 document and that fact should be reflected here. In addition, AWQC are likely to be more

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appropriate than TPES. This matter may need further review and discussion.

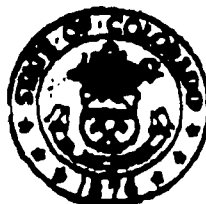
4. Page 4, line 8 of the document should read "for the RMA lakes and streams."

5. On page 14, the Surface Water ARAR and ARAR Limit for arsenic are incorrectly listed as Soil ARAR and ARAR Limit.

6. On page 4, why is the updating of the accompanying list of chemical-specific ARARs with additional chemical-specific regulations proposed to be time-limited?

7. Finally, EPA reserves the right to comment in the future on specific applications of the Chemical Index. For example, future research may affect understanding of the persistence or toxicity of many of the compounds contained in the Index.

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permit fully incible reproduction

Duane Woodard  
Attorney General

Charles E. Howe  
Chief Deputy Attorney General

Richard H. Porman  
Solicitor General

## The State of Colorado

DEPARTMENT OF LAW  
OFFICE OF THE ATTORNEY GENERAL

CERCLA LITIGATION SECTION  
ONE CIVIC CENTER PLAZA  
1600 Broadway, Suite 250  
Denver, Colorado 80202  
PH: (303) 866-4343 & 888

June 20, 1988

David L. Anderson  
Department of Justice  
c/o Acumenics, Inc.  
1961 Stout Street, Suite 670  
Denver, CO 80294

HAND DELIVERY

Re: Chemical Index, Volume III, Chemical-Specific ARARs for the  
RMA On-Post Operable Unit

Dear Dave:

The State's comments with respect to the above referenced document follow. As an initial matter, you are aware that the State is not a party to the RI/FS Process Document between the United States and Shell Oil Co. Therefore, the State has not committed to the 30 or 45 day review and comment period provided in the RI/FS Process Document. Pursuant to the only operative four party agreement -- the MOA -- the State has 60 days to review and comment on reports and plans submitted by the Army, its contractors and Shell. However, in the interest of advancing the clean-up of the Arsenal to the extent practicable, the State is providing comments on the Chemical-Specific ARARs for the RMA On-Post Operable Unit well in advance of the 60 day deadline.

The State has numerous concerns with Volume III of the Chemical Index entitled, "Chemical-Specific ARARs for On-Post Operable Unit, RMA." Volume III of the Chemical Index purports to be the Army's identification of chemical-specific ARARs for the Rocky Mountain Arsenal. The root of the State's concerns can be found in the short narrative text included with the Army's draft final identification of chemical-specific ARARs. The text makes clear that the continuing reliance upon the land and resource use restrictions "indefinitely" will limit the breadth of the remedial investigation (RI) and study of remedial alternatives during the feasibility study (FS), the endangerment assessment (EA) and consequently the remedy selection. [For example, the text includes statements such as, "where human exposure is precluded due to the operation of the existing RMA use restrictions . . . no regulations have been . . ."]

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David L. Anderson  
June 20, 1988  
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"[w]ith respect to the designated Groundwater ARARs and all pertinent limits, it should be emphasized that there are no such ARARs that pertain to the On-Post Operable Unit, except at the RMA boundaries, due to the operation of the existing and continuing RMA use restrictions . . ."; and "[t]here are no chemical-specific ARARs that pertain to any of the chemicals found in the RMA soils. Moreover, the existing and continuing restrictions on RMA use would render them unnecessary in any event."]

Limiting the scope of the investigations is inappropriate. While temporary use restrictions may be necessary during the conduct of the RI/FS and EA, the use restrictions must not serve to limit the scope of these studies. Similarly, temporary use restrictions may be necessary during the early stages of conducting the final remedy. However, the State is firm in its conviction that the determination of the need for use restrictions has not been properly evaluated and should not be made outside of the feasibility study and final remedy selection processes. Doing so introduces an arbitrary component into the entire RMA clean-up program which may seriously undermine confidence in the program and expose the process to allegations of not being responsive to the permanent remedy requirements of the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), as amended. Arbitrary land and use restrictions should not serve as an alternative to the implementation of a permanent remedy which is protective of the human health and environment. The State is confident that a comprehensive RI/FS and EA (considering all potential pathways) will demonstrate the temporary nature of institutional controls appropriate for the site.

The Army's purported identification of chemical-specific ARARs is a systematic rejection of all of the substantive chemical specific standards applicable to any internal, on-site response action taken at the Arsenal due, in part, to the imposition of use restrictions. [The only deviation from this position appears to be for a limited set of surface water ARARs (Ambient Water Quality Criteria regulations) to protect the "non-consumable" aquatic life found in Arsenal lakes.] Substantive ARARs cannot be rejected merely because the Army has determined in advance of completing the feasibility study and final remedy selection that land and resource use restrictions will serve as part of the permanent remedy for the Arsenal. This is a risk management decision which is properly made in conjunction with remedial decisions. This distinction is significant because it is the ARAR identification, selection and waiver process which statutorily provides a check and balance upon the United States' discretion in the remedial selection process. All potential



David L. Andersen  
June 20, 1988  
Page 3

ARARs must be identified to present the entire risk question to the risk manager.

Volume III also recites that human health criteria have been selected as the most protective of both human health and the environment. This choice is also a risk management decision, which should not be made at this stage of the process. Instead, all applicable or relevant and appropriate criteria should be specified at this time. Only then will the risk manager be in a position to select among all pertinent criteria in accordance with the final remedial goals determined to be protective of human health and the environment. Moreover, the Army's statement is erroneous: human health criteria are not necessarily protective of the environment.

The State disagrees with the Army's apparent representation that there are no chemical-specific ARARs regulating the internal remedial actions taken at the Arsenal. The Army's position is not consistent with the national experience in the application of CERCLA at other Superfund sites. Liability for CERCLA clean-ups is triggered by a release of a hazardous substance into the environment. The on-site vs. off-site location of the released hazardous substance is inconsequential. Accordingly, the Army's assertion that clean-up need only be measured at the facility boundaries is contrary to the past application and clear intent of CERCLA. Wastes which are regulated under RCRA are required to meet background levels for clean-up. These are chemical-specific requirements. There are a number of locations within the boundaries of the Arsenal where ARARs must be met. The point of groundwater compliance for any remedial action is the vertical surface located at the hydraulically downgradient limit of the waste disposal area that extends into the uppermost aquifer underlying the source area. For example, for the Basin F and Basin A neck groundwater intercept treatment systems, the point of compliance is the location of the downgradient reinjection wells where the treated water will be returned to the aquifer.

Nonetheless, even if the boundaries are accepted as groundwater compliance points, the current proposal to use the boundaries of the Arsenal as the point of compliance is unworkable in that it does not address vertical pathways of migration and it fails to take into account that the boundary containment systems do not prevent all contaminants from migrating off-post.

The draft final document may also be read to indicate that a June, 1988, is the cut-off date for consideration of promulgated regulations as ARARs. All criteria which are applicable or

David L. Anderson  
June 20, 1988  
Page 4

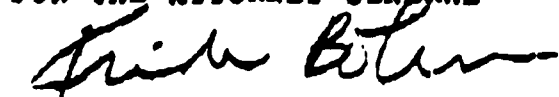
relevant and appropriate as of the date a final remedy is selected must be considered as ARARs. Inasmuch as the parties will engage in discussions about specific chemicals, the opportunity to present further comment is reserved.

The State notes that action levels determined through the integrated endangerment assessment must also play a critical role in the risk management and remedial selection process. ARARs and action levels must both be considered in the definition of clean-up standards. Because the EA is not complete and the action levels have not been included in Volume III, no specific comments can be provided. However, the State reserves the right to raise any other substantive concerns it identifies upon issuance of a meaningful list of chemical-specific ARARs.

The State strongly urges that all chemical-specific ARARs be identified without regard to use restrictions. In addition, the State urges the Army to revise its arbitrary determination of land and resource use restrictions outside the RI/FS and EA processes. Finally, the State urges the supplementation of Volume III of the Chemical Index to include action levels derived through the EA process when those become available. Only with access to complete information relating to all pertinent criteria and "safe" exposure levels will the risk manager be in a position to make an informed decision about clean-up standards to be employed at the RMA.

Sincerely yours,

FOR THE ATTORNEY GENERAL



Patricia Bohm  
Assistant Attorney General  
CERCLA Litigation Section

pc: David Shelton  
Theodora Tsengas  
Tony Truschel  
Donald Campbell  
Connally Mears, EPA  
Michael Gaydosch, EPA  
Chris Mahr, Shell Oil Co.  
Edward J. McGrath, Esq.

20 JUN 88

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EDWARD J. MCGRATH

June 17, 1988

FEDERAL EXPRESS

Mr. Donald L. Campbell  
Department of Army  
Office of the Program Manager  
Rocky Mountain Arsenal Contamination Cleanup  
Attention: AMXRM-EE  
Building E4460  
Aberdeen, MD 21020-5401

Dear Mr. Campbell:

Enclosed are the Shell Oil Company comments on the proposed chemical-specific applicable or relevant and appropriate requirements for the draft chemical index.

Very truly yours,



Edward J. McGrath

CLN:jal

cc w/attachment:

Colonel Wallace N. Quintrell  
Lieutenant Colonel Scott Isaacson  
Major Larry Rouse  
David Anderson, Esq.  
Andrew M. Gaydosch, Esq.  
Patricia Bohm, Esq.

also BA7

SHELL COMMENTS  
REGARDING THE ARMY'S LISTING OF PROPOSED  
CHEMICAL-SPECIFIC ARARs FOR THE  
ON-POST OPERABLE UNIT, RMA

GENERAL COMMENTS ON THE ARMY'S DOCUMENT

The Army's Chemical Index with ARARs, Volume 3, is a listing of proposed chemical-specific ARARs on a compound by compound basis. This document does not describe, however, the criteria for selecting the compounds for which potential ARARs are listed. Several compounds of concern at RMA have not been listed. For example, compounds with notable human toxicologic endpoints which should not be ignored are as follows:

- Asbestos
- Benzyl chloride
- Carbon disulfide
- Chloracetophenone
- Dibrom
- Dicyclopentadiene
- m-Dinitrobenzene
- Formaldehyde
- Lindane
- 2-Hydroxybenzaldehyde
- Phenol
- Rotenone
- Selenium
- Sodium isopropylmethylphosphonate
- Tetrachlorethylene
- Toxaphene

Several compounds which are either naturally occurring or innocuous have been listed. Generic groups of compounds such as "phenolics" and non-chemicals such as wheat rust provide no useful information to the evaluation of chemical-specific ARARs. Finally, a number of compounds should be screened from the document which are non-persistent in the soils or waters of RMA, such as ammonia, Freon 113, nitrogen oxide, and sulfur dioxide, as well as compounds which would not be present in the form listed in the index, such as hydrogen peroxide, hydrofluoric acid, magnesium, methanol, piperazine, phosgene, and sulfur dichloride. The compounds listed above are only a small portion of the problems which exist with each of the aforementioned groups of compounds.

The presence of compounds which have no human health impacts or which will not be present to remediate should be taken out of this ARARA document. Therefore, the following groups of compounds should be removed from this document:

Innocuous materials;  
Naturally-occurring materials;  
Generic groups of compounds and non-chemicals; and  
Compounds which are non-persistent in the soils or waters of RMA.

Furthermore, the Army's ARARs document is confusing due to the format of the presentation and to the lack of applicable regulations for a large percentage of the compounds listed. The incorporation of erroneous synonyms and the absence of an index of synonyms add further confusion. For example, we question the reference which cites tetrachloroethane as a synonym for acetylene tetrachloride.

As stated on several previous occasions, we have concerns regarding the EPA Cancer Assessment Group, CAG, methodology. More specifically, we have concerns regarding the manner in which CAG determines lifetime carcinogenic values, the uncertainties associated with CAG potency estimates, and the use of mouse liver tumor data to determine whether a compound is a carcinogen. Concerns regarding the use of values driven by CAG methodology have been expressed by Shell on previous occasions. The CAG methodology does not consider susceptibility frontiers and does not reflect all of the uncertainties in extrapolating data from animals to humans.

The current CAG methodology uses potency measures, such as unit risk and relative risks, which are based on upper bounds and not on fitted model values. These measurements do not differentiate between carcinogens on the basis of available experimental data about the shapes of the dose-response relationship. The inability to differentiate between risks is a serious deficiency in CAG methodology.

The Army lists many compounds which have no ARARs. Where no ARARs exist, a risk assessment should be conducted to arrive at a clean-up level.

## CHEMICAL-SPECIFIC COMMENTS ON THE CHEMICAL INDEX

14. Aldrin

## Groundwater ARAR:

Shell disagrees with the Army proposal of 0.003 ug/l as an ARAR, which is the ambient water criterion for aldrin/dieldrin in navigable waters based on an FDA tolerance level of 0.3 ppm for fish times an application factor of 0.01. 40 C.F.R. § 129.100(a)(3).

Shell also disagrees with an assumption underlying this criterion. That assumption is that "there is no demonstrated 'no effect level'." See 41 Fed. Reg. 23,584 (1976). As Shell has previously explained in comments, developments in modelling, such as those by Sielken, indicate that this assumption is invalid. In addition, a water quality criterion designed to provide for protection of aquatic life is not relevant and appropriate. The criterion was intended to address the impact of bioaccumulation in fish and their food sources on the biological transport of aldrin/dieldrin to birds and to mammals, including man. 41 Fed. Reg. 23,584 (1976).

Furthermore, aldrin and dieldrin are considered by the EPA CAG to be an animal carcinogen and a suspected human carcinogen. As stated in previous comments, numerous carcinogenicity tests in a variety of animals indicate that aldrin and dieldrin promote only liver tumors and the tumors develop only in mice. On the basis of this species-specific effect, aldrin and dieldrin are improperly categorized by the EPA as animal carcinogens.

## Surface water ARAR:

Shell disagrees with the Army proposal of 3.0 ug/l as an ARAR. The aquatic life value published at 45 Fed. Reg. 79325 is merely guidance, and does not constitute an ambient Water Quality Criterion. See 45 Fed. Reg. at 79,322 ("The aquatic life criteria specify both maximum and 24-hour average values. In those cases where there were insufficient data to allow the derivation of a criterion, narrative descriptions of apparent threshold levels for acute and/or chronic effects based on the available data are presented. These descriptions are intended to convey a sense of the degree of toxicity of the pollutant in the absence of a criterion recommendation.").

Shell questions why the Army did not consider the state surface water standard for Aldrin (.003 ug/l) promulgated pursuant to the Colorado Water Quality Control Act as a potential ARAR. See 5 Colo. Code Reg. 1002-8 3.8.5(2) hereinafter referred to as "South Platte Organics Standards" (1987).

26. Antimony

27. Antimony (III) Chloride

Groundwater ARAR:

Shell disagrees with the Army proposal of 146 ug/l as an ARAR. The ambient water quality criteria is not adjusted for consumption of drinking water only, but includes human consumption of aquatic organisms as well. In the Guidance on Feasibility Studies under CERCLA at 5-13 (June 1985), EPA recognizes that adjusted values may be appropriate for Superfund sites with contaminated groundwater.

Surface water ARAR:

Shell disagrees with the Army proposal of 1,600 ug/l as an ARAR. The Aquatic Life value published at 45 Fed. Reg. 79325 is merely guidance, and does not constitute an ambient Water Quality Criterion.

28. Arsenic

Groundwater ARAR:

Shell agrees with the Army proposal of 50 ug/l as an ARAR. The National Academy of Sciences Drinking Water Committee, NAS, and the World Health Organization, WHO, have prepared recommendations and guidelines, respectively, for inorganic contaminant in drinking water. These recommendations are based upon non-carcinogenic, no observed adverse effects levels in humans with considerations for a margin of safety. The MCL is based upon guidance from these organizations and upon reasonable scientific studies and peer reviews of these studies.

The state Human Health standard is the same as the MCL, and is therefore not more stringent than the federal standard.

Surface water (Army has inadvertently placed this information in the soil ARAR category) ARAR:

Shell disagrees with the Army proposal of 440 ug/l as an ARAR. The aquatic life value published at 45 Fed. Reg. 79325 is merely guidance, and does not constitute an ambient Water Quality Criterion.

Shell questions why the Army did not consider the state surface water standard for Arsenic (.05 ug/l) as a potential ARAR. See 5 Colo. Code Reg. 1002-8 p. 50-51 hereinafter referred to as "Site Specific Inorganic Standards" (1987) (site specific standards can be seen in segment 14 of the mainstem of the South Platte River).

### 33. Barium

Groundwater ARAR:

Shell agrees with the Army proposal of the MCL of 1,000 ug/l as an ARAR for the reasons outlined in the arsenic comment. The state Human Health standard is the same as and is based upon the MCL, and is therefore not an ARAR. (A state regulation or requirement must be more stringent than federal standards to be an ARAR.).

Surface water ARAR:

Shell agrees with the Army in not selecting the state surface water standard for barium (1,000 ug/l) as a potential ARAR because it is not more stringent than the federal MCL. See 5 Colo. Code Reg. 8002-8 p. 31 hereinafter referred to as "Table III Standards" (1987).

### 34. Benzene

Groundwater ARAR:

Shell disagrees with the Army proposal of the MCL of 5 ug/l as an ARAR. The benzene MCL is based on CAG methodology and is therefore unacceptable for the reasons outlined above in the general comments.

Surface water ARAR:

Shell disagrees with the Army proposal of 5,300 ug/l as an ARAR. The Aquatic Life value published at 45 Fed. Reg. 79326 is merely guidance, and does not constitute an ambient Water Quality Criterion.



50. Cadmium

Groundwater ARAR:

Shell agrees with the Army proposal of 10 ug/l as an ARAR for the reasons outlined in the arsenic comment.

The state Human Health standard is the same as and is based on the MCL, and is therefore not on ARAR.

Surface water ARAR:

Shell tentatively accepts the Army proposal of the AWQC (Aquatic Life) standard (max: e (1.05 [ln (hardness)] -3.73) as a potential ARAR. Shell questions why the Army did not consider the state surface water standard for cadmium (0.001 ug/l) as a potential ARAR. See Site Specific Inorganic Standards.

56. Carbon tetrachloride

Groundwater ARAR:

Shell disagrees with the Army proposal of the MCL of 5 ug/l as an ARAR. The carbon tetrachloride MCL is based on CAG methodology and is therefore unacceptable for the reasons set forth above.

Surface water ARAR:

Shell disagrees with the Army proposal of 32,200 ug/l as an ARAR. The aquatic life value published at 45 Fed. Reg. 79327 is merely guidance, and does not constitute an ambient Water Quality Criterion.

60. Chlordane

Groundwater ARAR:

Shell disagrees with the Army proposal of 0.46 ng/l, as an ARAR. The ambient Water Quality Criterion is based on the underlying assumption that there is no threshold level and is premised on CAG methodology. Further, it protects to the  $10^{-6}$  level. This level is more protective than several MCLs. Shell agrees with the Army in not including the state human health standard for Chlordane as a potential ARAR because it is driven by CAG methodology.

Surface water ARAR:

Shell tentatively accepts the Army proposal of the AWQC (Aquatic Life) standard (24 hr: 0043 ug/l; max: 2.4 ug/l) as a potential ARAR.

64. Chlorinated phenol

Surface water ARAR:

Shell disagrees with the Army proposal of 500,000 ug/l as an ARAR. The aquatic life value published at 45 Fed. Reg. 79329 is merely guidance, and does not constitute an ambient Water Quality Criterion.

70. Chlorobenzene

Groundwater ARAR:

The value cited by the Army is incorrect. The human health AWQC for chlorobenzene, as reported at 45 Fed. Reg. 79327-28, is 488 ug/l. This value has been derived from non-referenced sources for the protection of human health. The references do not advise the reader on the toxicological endpoints considered or the assumptions incorporated in performing the calculations for values protective of human health. Furthermore, the standard attempts to protect biota in surface water, which may not be appropriate for groundwaters. The Army's proposed groundwater ARAR limits also use more significant figures than what were presented in the original documents.

Surface water ARAR:

Shell disagrees with the Army proposal of 250 ug/l as an ARAR. The aquatic life value published at 45 Fed. Reg. 79237 is merely guidance, and does not constitute an ambient Water Quality Criterion.

74. Chloroform

Groundwater ARAR:

Shell tentatively accepts the MCL of 100 ug/l as the proposed MCL. The MCL is based upon the median range of chloroform concentrations in U.S. drinking water pursuant to an EPA study.

### 83. Chromium

#### Groundwater ARAR:

Shell agrees with the Army proposal of the MCL of 50 ug/l as an ARAR for the reasons outlined in the arsenic comment. The state Human Health standard is the same as and is based on the MCL, and is therefore not an ARAR.

#### Surface water ARAR:

Shell tentatively accepts the Army proposal of the AWQC (Aquatic Life) standard as a potential ARAR. Shell questions why the Army did not consider the state surface water standards for Cr III (50 ug/l) and Cr VI (25 ug/l) as potential ARARs. See Site Specific Inorganic Standards.

### 84. Copper

#### Groundwater ARAR:

Shell agrees with the Army in not selecting the state Water Quality Standards for Secondary Drinking Water (1 mg/l) and Agricultural (.2 mg/l) uses as potential ARARs. The secondary drinking water standard is premised on the AWQC for human health (1 mg/l) which is based upon organoleptic data. Organoleptic concerns do not relate to protection of public health and the environment and the agricultural value is not based on human health concerns.

#### Surface water ARAR:

Shell tentatively agrees with the Army proposal of the AWQC (Aquatic Life) standard as a potential ARAR. Shell questions why the Army did not consider the state surface water standard for copper (25 ug/l) as a potential ARAR. See Site Specific Inorganic Standards.

### 93. Cyanide

### 94. Cyanogen Chloride

#### Groundwater ARAR:

Shell disagrees with the Army proposal of 200 ug/l as an ARAR. The ambient water quality criteria is not adjusted for consumption of drinking water only, but includes consumption of aquatic organisms as well. The state Human Health standard is the same as and is based on the AWQC, and is therefore not an ARAR.

#### Surface water ARAR:

Shell tentatively accepts the Army proposal of the AWQC (Aquatic Life) (24 hr: 3.5 ug/l; max: 52 ug/l) standard as a potential ARAR. Shell questions why the Army did not consider the state surface water standard for cyanide (5 ug/l) as a potential ARAR. See Site Specific Inorganic Standards.

#### 100. DDE

Shell disagrees that the water quality criterion of .001 ug/l should be selected as an ARAR. 40 C.F.R. § 129.101(a)(3). It rejects the assumption underlying this criterion that there is not a demonstrated no effect level. See 41 Fed. Reg. 23587 (1976). As Shell has previously explained in comments, developments in modelling, such as the Sielken model, indicate that the assumption is invalid. In addition, a water quality criterion designed to provide for protection of aquatic life is not relevant and appropriate. The criterion was intended to address bioaccumulation in aquatic organisms. 41 Fed. Reg. 23587 (1976).

#### Surface water ARAR:

Shell disagrees with the Army proposal of 1,050 ug/l as an ARAR. The aquatic life value published at 45 Fed. Reg. 79331 is merely guidance, and does not constitute an ambient water quality criterion. Shell questions why the Army did not consider the state surface water standard for DDE (.001 ug/l) as a potential ARAR. See South Platte Organics Standards.

#### 101. DDT

#### Groundwater ARAR:

Shell disagrees that the water quality criterion of 0.0024 ug/l should be selected as an ARAR. 40 C.F.R. § 129.101(a)(3). It rejects the assumption underlying this criterion that there is not a demonstrated no effect level. See 41 Fed. Reg. 23587 (1976). As Shell has previously explained in comments, developments in modelling, such as the Sielken model, indicate that the assumption is invalid. In addition, a water quality criterion designed to provide for protection of aquatic life is not relevant and appropriate. The criterion was intended to address bioaccumulation in aquatic organisms. 41 Fed. Reg. 23587 (1976).

Surface water ARAR:

Shell tentatively accepts the Army proposal of the AWCQ (Aquatic Life) standard (24 hr: 0.0010 ug/l and 1.1 ug/l at any one time) as a potential ARAR. Shell agrees with the Army in not selecting the state surface water standard for DDT (.001 ug/) as a potential ARAR because it is not more stringent than the water quality criteria. See South Platte Organics Standards.

111. p-Dichlorobenzene

Groundwater ARAR:

Shell disagrees with the Army proposal of 400 ug/l as an ARAR. The ambient water quality criterion is not adjusted for consumption of drinking water only, but includes consumption of aquatic organisms as well.

Surface water ARAR:

Shell disagrees with the Army proposal of 763 ug/l as an ARAR. The Aquatic Life value published at 45 Fed. Reg. 79332 is merely guidance, and does not constitute an ambient Water Quality Criterion.

114. 1,2-Dichloroethane

Groundwater ARAR:

Shell disagrees with the Army proposal of the MCL of 5 ug/l as an ARAR. This MCL is driven by CAG methodology and is therefore unacceptable to Shell.

115. 1,1-Dichloroethylene

Groundwater ARAR:

Shell disagrees with the Army proposal of the MCL of 7 ug/l as an ARAR. This MCL is driven by CAG methodology and is therefore unacceptable to Shell.

Surface water ARAR:

Shell disagrees with the Army proposal of 11,600 ug/l as an ARAR. The aquatic life value published at 45 Fed. Reg. 79332 is merely guidance, and does not constitute an ambient Water Quality Criterion.

116. 1,2-Dichloroethylene

Surface water ARAR:

Shell disagrees with the Army proposal of 11,600 ug/l as an ARAR. The aquatic life value published at 45 Fed. Reg. 79332 is merely guidance, and does not constitute an ambient Water Quality Criterion.

118. 1,2-Dichloropropane

Groundwater ARAR:

Shell disagrees with the Army proposal of 87 ug/l as an ARAR. The AWQC referred to by the Army is for 1,2-Dichloropropene, and is inapplicable to this compound.

Surface water ARAR:

Shell disagrees with the Army proposal of 5,700 ug/l as an ARAR. The Aquatic Life value published at 45 Fed. Reg. 79333 is merely guidance, and does not constitute an ambient Water Quality Criterion.

119. cis-1,3-Dichloropropene

Groundwater ARAR:

Shell rejects the AWQC for this compound of 87 ug/l as an ARAR (improperly referred to by the Army above). The ambient Water Quality Criterion is not adjusted for consumption of water only, but includes consumption of aquatic organisms as well.

121. Dieldrin

Groundwater ARAR:

Shell disagrees with the Army proposal of 0.003 ug/l as an ARAR. See the comments on aldrin.

Surface water ARAR:

Shell tentatively accepts the Army proposal of the AWQC (Aquatic Life) standard as a potential ARAR. Shell agrees with the Army in not including the state surface water standard for dieldrin (.003 ug/l) as a potential ARAR because it is not more stringent than the federal standard. See South Platte Organics Standards.

### 151. Endrin

#### Groundwater ARAR:

Shell disagrees with the Army proposal of 0.2 ug/l as an ARAR. The state Human Health standard is the same as and is based on the MCL, and is therefore not an ARAR. The MCL for endrin is based upon an interim standard (1975) in tap water. The standard is intended to be protective of teratogenic and reproductive health effects.

#### Surface water ARAR:

Shell tentatively accepts the Army proposal of the AWQC (Aquatic Life) standard (24 hr: .0023 ug/l; max: .037 ug/l) as a potential ARAR. Shell agrees with the Army in not including the state surface water standard for endrin (.004 ug/l) as a potential ARAR because it is not more stringent than the AWQC. See South Platte Organics Standards.

### 153. Ethylbenzene

#### Groundwater ARAR:

Shell disagrees with the Army proposal of 1,400 ug/l as an ARAR. This value has been derived from non-referenced sources for the protection of human health. The references do not advise the reader on the toxicological endpoints considered or the assumptions incorporated in performing the calculations for values protective of human health. Furthermore, considerations which are protective of biota in surface water may be inappropriate for groundwater. The Army's proposed groundwater ARAR limits also use more significant figures than what were presented in the original documents.

#### Surface water ARAR:

Shell disagrees with the Army proposal of 32,000 ug/l as an ARAR. The AWQC (Aquatic Life) published at 45 Fed. Reg. 79334 is merely guidance, and not an ambient Water Quality Criterion.

### 159. Fluoride

#### Groundwater ARAR:

Shell tentatively agrees with the Army proposal of the MCL of 4000 ug/l as an ARAR. The state Standard for Human Health is the same as the MCL and therefore is not an ARAR.

168. Heptachlor

Groundwater ARAR:

Shell disagrees with the Army proposal of 0.028 ng/l, as an ARAR. The ambient Water Quality Criterion is based on the underlying assumption that there is no threshold value and is therefore unacceptable to Shell.

Surface water ARAR:

Shell tentatively accepts the Army proposal of the AWQC (Aquatic Life) standard (24 hr: 0.0038 ug/l; max: 0.52 ug/l) as a potential ARAR. Shell agrees with the Army in not considering the state surface water standards for heptachlor (.001 ug/l, Aquatic Life; .2 ug/l, Water Supply) as potential ARARs. These standards are driven by CAG methodology. See South Platte Organics Standards.

173. Hexachlorocyclopentadiene

Groundwater ARAR:

Shell rejects the Army proposal of 206 ug/l as an ARAR because it has not been adjusted for drinking water only.

Surface water ARAR:

Shell disagrees with the Army proposal of 5.2 ug/l as an ARAR. The AWQC (Aquatic Life) value published at 45 Fed. Reg. 79,335-36 is merely guidance, and does not constitute an ambient Water Quality Criterion.

199. Lead

Air ARAR:

Shell questions why the Army did not consider the state regulations for the Control of Hazardous Air Pollutants regarding lead as a potential ARAR. See 5 Colo. Code Reg. 1001-10 p. 52.

Groundwater ARAR:

Shell tentatively supports the MCL of 50 ug/l as a potential ARAR for the reasons outlined in the arsenic comment.



Surface water ARAR:

Shell tentatively accepts the Army proposal of the AWQC (Aquatic Life) standard (24 hr:  $e(2.35 [\ln(\text{hardness})] - 9.48]$ ; max:  $e(1.22 [\ln(\text{hardness})] - 0.47)$ ) as an ARAR. Shell agrees with the Army in not selecting the state surface water standard for lead (25 ug/l) as a potential ARAR because it is not more stringent than the federal AWQC. See Site Specific Inorganic Standards.

209. Mercury

Groundwater ARAR:

Shell agrees with the Army proposal of the MCL of 2 ug/l as an ARAR for the reasons outlined in the arsenic comments. The state Clean Water Standard for Human Health is the same as and is based on the MCL, and therefore also is not an ARAR.

Surface water ARAR:

Shell tentatively accepts the Army proposal of the AWQC (Aquatic Life) standard (24 hr: .00057 ug/l; max .0017 ug/l) as an ARAR. Shell agrees with the Army in not selecting the state surface water standard for mercury (.05 ug/l) as a potential ARAR because it is not more stringent than the federal AWQC. See Site Specific Inorganic Standards.

241. Nitrate

Groundwater ARAR:

Shell tentatively agrees that the MCL (10,000 ug/l) for this chemical should be treated as an ARAR.

Surface water ARAR:

Shell agrees with the Army in not selecting the state surface water standard for nitrates (10,000 ug/l) as a potential ARAR because it is the same as the federal water quality criteria (1976) and therefore is not more stringent. See Site Specific Inorganic Standards.

247. 4-Nitrophenol

248. 4-Nitrophenol, sodium salt

249. p-Nitrophenol diethyl phosphate

Surface water ARAR:

Shell disagrees with the Army proposal of 230 ug/l as an ARAR. The Aquatic Life value published at 45 Fed. Reg. 79337 is merely guidance, and does not constitute an ambient Water Quality Criterion.

304. p,p-TDE

Groundwater ARAR:

Shell disagrees with the Army proposal of 0.0024 ng/l as an ARAR. 40 C.F.R. § 129.101(a)(3). It rejects the assumption underlying this criterion that there is not a demonstrated no effect level. See 41 Fed. Reg. 23587 (1976). As Shell has previously explained in comments, developments in modelling, such as the Sielken model, indicate that the assumption is invalid. In addition, a Water Quality Criterion designed to provide for protection of aquatic life is not relevant and appropriate. The criterion was intended to address bioaccumulation in aquatic organisms. 41 Fed. Reg. 23587 (1976).

Surface water ARAR:

Shell disagrees with the Army proposal of 0.6 ug/l as an ARAR. The aquatic life value published at 45 Fed. Reg. 79331 is merely guidance, and does not constitute an ambient Water Quality Criterion.

310. Toluene

Groundwater (Army has inadvertently placed this information in the Air ARAR category) ARAR:

Shell disagrees with the Army proposal of 14,300 ug/l as an ARAR, since it has not been adjusted for drinking water only.

Surface water ARAR:

Shell disagrees with the Army proposal of 17,500 ug/l as an ARAR. The Aquatic Life value published at 45 Fed. Reg. 79,340 is merely guidance, and does not constitute an ambient Water Quality Criterion.

317. 1,1,1-Trichloroethane

Groundwater ARAR:

Shell disagrees that the MCL for this chemical should be selected as an ARAR because it is driven by CAG methodology.

319. Trichloroethylene

Groundwater ARAR:

Shell disagrees with the Army proposal of 5 ug/l as an ARAR. The number has been derived via CAG methodology, and is therefore unacceptable to Shell.

Surface water ARAR:

Shell disagrees with the Army proposal of 45,000 ug/l as an ARAR. The aquatic life value published at 45 Fed. Reg. 79341 is merely guidance, and does not constitute an ambient Water Quality Criterion.

331. Vinyl Chloride

Groundwater ARAR:

Shell disagrees with the Army proposal of 2 ug/l as an ARAR. The number has been derived via CAG methodology, and is therefore unacceptable to Shell.

335. Zinc

336. Zinc oxide

Surface water ARAR:

Shell tentatively agrees with the Army proposal of the AWQC (Aquatic Life) standard (24 hr: 47 ug/l; max:  $e(0.83 [\ln (\text{hardness})] - 1.90)$ ) as a potential ARAR. Shell agrees with the Army in not considering the state surface water standard for zinc (110 ug/l) as a potential ARAR because it is not more stringent than the federal AWQC. See Site Specific Inorganic Standards.