

Colorado Department of Health

Review and Comment

Draft Technical Memorandum (TM) #8 - Identification  
of Contaminants of Concern (COCs) for OU 1  
September, 1992

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General Comments:

1) Because DOE has not considered direct exposure (ingestion and dermal contact) to ground water, the methodology of determining the list of COCs is fundamentally flawed. The Division has previously stated our requirement that these exposure pathways be quantitatively evaluated.

2) The Executive Summary states that all exposure scenarios in TM 6 include direct contact with surface soil and breathing air influenced by contaminants in soil. This is incorrect. TM 6 dealt with direct exposure to soil and did not differentiate between surface soil and sub-surface soil. However, this TM does not consider sub-surface soils. The Division has stated that direct exposure to all sources of contamination and contaminated material is required. This would include direct exposure to any sub-surface soil contamination.

3) Using a risk summation cut-off of 99% (used in Section 2.2.5 of TM 8) is presented in RAGS as an example or guideline. RAGS also states that a higher value may be needed if site risks are expected to be high (page 5-24). Based on past data, the Division expects that risks from the site will, indeed, be high. This is substantiated by the approximate risk levels and hazard quotients presented on Tables 2-4 through 2-8 of the document. Therefore, the Division would suggest that a risk summation cut-off of 99.9% or greater may have been more appropriate. In addition, the Division requests that if pathway specific toxicity information indicates that certain chemicals will present unacceptable risks, they be retained on the COC list.

Specific Comments:

Section 2.2.1: Please provide each site-specific chemical analyte list with the associated detection limits used for the COC

determination.

Limiting the chemical analyte list for ground water to volatile and semi-volatile organics is not appropriate. Ingestion and dermal contact with ground water must be considered, thereby increasing the list of potential COCs to include metals, inorganics, radionuclides, PCBs, and pesticides.

Figure 2-1: The methodology presented on this flowchart for hotspots is incorrect. Section 6.5.3 of RAGS (page 6-28) states that "if a hot spot is located near an area which, because of site or population characteristics, is visited or used more frequently, exposure to the hot spot should be assessed separately." Since the future on-site residential exposure scenario assumes direct exposure (i.e., visited frequently), any contaminant associated with any hot spot must become a COC.

Tables 2-1 and 2-2a thru 2-2d: Please indicate on this table that the minimum concentration detected equals the detection limit.

Section 2.2.2: Section 5.9.3 of RAGS (page 5-22) points out that a detection frequency screen is not appropriate for any chemicals expected to be present at the site. Please clarify in this section if any of the chemicals screened out by detection frequency are known or suspected to be present based on site history and/or degradation of other known contaminants.

Section 2.2.3: Using the mean to aid in the determination of hot spots is appropriate only for chemicals that may be contaminants but are also naturally occurring. For any anthropogenic chemicals, the yardstick used should be presence/absence. Admittedly, man-made chemicals hopefully have many non-detects averaged in to the mean. However, when any levels of contamination are averaged into zero, or non-detect, the result is greater than zero and may, under the current methodology, disqualify some contamination. (See RAGS Section 5.7.4, page 5-19)

Section 2.2.4: A flow diagram should be included to describe those statistical processes used to determine COCs. In addition, numerical statistics should be reported with corresponding measures of confidence (i.e., a p-value or a confidence interval).

Table 2-10: Based on text on page 2-13 and on the above comment to Figure 2-1 regarding hot spots, acetone should be retained on the list of COCs.