

EPA COMMENTS
OU 7 TECHNICAL MEMORANDUM #1

EPA comments, in addition to those prepared by our review contractor (attached) are provided below. We suggest DOE's Operable Unit project managers examine the EPA and CDH comments on earlier OU TM's and incorporate those comments in future submittals. The same erroneous assumptions found in the OU 2 Exposure Scenarios reappear here; that is unnecessary and a waste of time for all involved.

Page 3-26 states that potential exposures to current onsite workers will not be evaluated in the risk assessment, yet the table on page 3-23 shows that it will. This inconsistency needs to be resolved.

Page 4-15 lists the pathways of exposure for future on-site residents. Ingestion of groundwater is not included. I realize this is a management call, but this pathway was included (finally) for OU 1.

Page 5-3 under General Exposure Assumptions proposes to adjust exposure frequency for snowfall days. This is inappropriate. If the information were being used to determine whether or not someone actually went on the site because of the weather, such as in a recreational or trespassing scenario, this assumption would be correct. However, since residents are expected to live in their housing areas, and workers are expected to come to work regardless of the weather, this assumption is inappropriate. The concept that soil ingestion is limited to outdoor exposure is erroneous. The EPA soil ingestion value is a combination of outdoor soil and indoor dust which can not be divided evenly throughout the day. We have gone into great detail on this subject in my previous comments on OU 1 and OU 2. The exposure frequency for ingestion of soil should remain at 350 days for residential and 250 days for occupational receptors.

Page 5-4, second indented paragraph. Current on-site workers should be assumed to breathe onsite air 8 hours/day (not 4 hours), unless the workers will be physically going off-site for the time they are not expected to be outdoors on the site.

Page 5-4, fifth indented paragraph, states that literature values for the lung retention of chemicals will be used to develop inhalation toxicity factors when inhalation exposure studies are not available. This is generally inappropriate. When inhalation data is insufficient to develop a toxicity value, data from other routes of exposure can be used to derive an inhalation toxicity value, provided that portal-of-entry effects in the lung can be ruled out. This route-to-route extrapolation technique is

described in EPA's 1990 "Interim Methods for Development of Inhalation Reference Concentrations" (EPA/600/8-90/066A). The use of lung retention values, alone, as described in this Tech Memo is not appropriate to develop a chemical-specific absorption value. Information on the exposure conditions and pharmacokinetics of the contaminant are also needed and should be evaluated carefully before an absorption value is derived. We suggest EPA's route-to-route extrapolation method be utilized when inhalation exposure studies are not available, and the use of lung-retention values eliminated.

Page 5-6, first indented paragraph, proposes to use a bioavailability factor to reduce the intake of contaminants from ingestion of soil. This factor should be eliminated because the empirical evidence is insufficient at this time, from which to derive bioavailability factors for the chemicals of concern at the Rocky Flats Plant. Region 8 has, however, used reduced bioavailability factors for contaminants (such as lead and arsenic) based on site-specific geochemical and geophysical characterization of the chemical form present in the soil and in vivo bioavailability studies in animals. If DOE can provide this type of site-specific evidence, we will consider the use of a reduced bioavailability factor. However, until DOE provides this evidence or until further research is conducted in this area, it would be extremely difficult to recommend a factor for bioavailability from soil at this time.

Page 5-6, Section 5.1.4, considers the consumption of homegrown vegetables as a potential route of exposure. Homegrown fruits should also be considered in this pathway. EPA guidance on Standard Default Exposure Factors (OSWER directive 9285.6-03) recommends 42 grams/day as the daily intake rate for homegrown fruits.

Page 5-8, first indented paragraph, proposes to calculate an absorbed fraction for dermal exposure based on data available in the scientific literature. EPA's 1992 Dermal Exposure Assessment: Principles and Applications (EPA/600/8-91/011B) provides suggested values for the dermal absorption fraction of several chemicals/classes of chemicals, as well as guidance on calculating an absorbed fraction for chemicals for which no experimental dermal absorption from soil is available. If absorption fractions are to be used for dermal exposure, we would recommend that the guidance provided in this document be used.

Tables 5-1 - 5-21 should be revised appropriately to reflect the comments above.