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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

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MEMORANDUM

DATE: July 10, 1992

SUBJECT: Risk review comments on human health aspects, Olin Chemicals/McIntosh Plant NPL Site, Alabama.

FROM: Julie W. Keller
Toxicologist

TO: Cheryl Smith
Remedial Project Manager

THROUGH: Elmer W. Akin, Chief
OHA, WD

Per your request, I have reviewed the **Exposure Assessment Technical Memorandum** document for the NPL Site. My comments provided below are divided into two sections, i.e., (1) comments specifically to you the RPM and (2) comments that, if you concur, can be conveyed verbatim to the party responsible for preparation of the document. To facilitate the verbatim conveyance, I will be pleased to provide on request a copy of this memo via cc: mail.

General Comments to the RPM

It is the policy of the EPA Region IV Office of Health Assessment to require written responses to review comments provided by this office. If a meeting with the PRP is to be held to discuss these comments, we request that written responses be provided prior to such a meeting. We also request that any risk assessment comments received from the State or any other source be provided to the Office of Health Assessment for our site file. If risk comments from sources other than this office are forwarded to the PRP contractor, the source should be clearly identified unless concurrence of this office is sought. In this case, we should formally review these comments and provide you with our response before they are forwarded.

Comments contained in this memo should be incorporated into the draft baseline risk assessment report. It is unnecessary for the responsible party to resubmit the Exposure Assessment Technical Memorandum.

Comments to be Conveyed to the Responsible Party

A future onsite residential scenario should be included in the exposure assessment. The potential exists for parts of the site to become residential due to the close proximity to residential areas shown on Figure 1. Risk information for future onsite residential pathways should be included in the baseline risk assessment to aid in making risk management decisions. This may or may not be the basis for remedial action at this site. However, all potential exposure pathways should be presented in the baseline risk assessment.

The baseline risk assessment should determine which complete exposure pathways are significant. The decision that a complete pathway is insignificant should not be made this early in the risk assessment process. The baseline risk assessment should quantify all complete exposure pathways. Figures 4 and 5, and the associated text (Section 4) should be revised to reflect that all complete exposure pathways will be quantified in the baseline risk assessment. The soil ingestion pathway should be quantitated for current trespasser and future residents. It may be necessary to collect additional surface soil data to evaluate this pathway. For risk assessment purposes EPA Region IV considers the top foot of soil as surface soil. The inhalation pathway should be considered for current onsite workers and offsite residents, due to their close proximity, as well as future onsite residents. The baseline risk assessment is not concerned with future remedial workers. However, plant worker exposures should be considered in the baseline risk assessment for exposures to contaminants not part of their regular working environment.

"Supplemental Guidance to RAGS: Calculating the Concentration Term" (OSWER Pub. 9285.7-081, May 1992) should be consulated regarding the appropriate calculation of the concentration term. The method presented in this exposure assessment is for normally distributed sample sets. EPA's experience shows that most environmental contaminant data sets are lognormally distributed rather than normally distributed. Highlight 5 in the supplemental guidance shows the equation for calculating the UCL for lognormally distributed sample sets. Also, it is inappropriate to use the geometric mean as indicated in Section 5.0; the following two sentences should be removed from the document: "A more realistic approach may be to use the geometric average in cases where environmental data may be skewed resulting in overestimation of risks. For the baseline risk assessment, a statistical distribution analyses of the data may be conducted which may result in the use of the geometric, rather than the arithmetic, mean to be used for risk/hazard number calculations." The exposure point concentrations for the RME and average scenarios should be the lognormal 95% upper confidence limit.

The average scenarios should be included in an appendix and not in the body of the risk assessment since it is not used for remedial decision making. Risk decisions are based on reasonable maximum exposures. The NCP states "During the development and analysis of alternatives, the risks associated with potential alternatives, both during implementation and following completion of remedial action, are assessed, based on the reasonable maximum exposure assumptions and any other controls necessary to ensure that exposure levels are protective and can be attained (FR Vol. 55, No. 45, page 8712).

The "fraction contaminated" term used for the reasonable maximum exposure scenario is not appropriate; 0.2 should be replaced with 1.0 to reflect the possible contact of a contaminated area for all of the assumed onsite days.

"Dermal Exposure Assessment: Principles and Applications" (EPA/600/8-91/011B, January 1992) should be used to determine compound specific dermal permeability constants. The default dermal permeability constant (0.0008 cm/hr) cited on page 30 and Table 7 has been updated. In the absence of a compound specific permeability constant the default for water (0.001 cm/hr) should be used.

The baseline risk assessment does not consider subchronic exposures. Therefore, the information on subchronic exposures should be eliminated from Appendix D. The headings in Appendix D should be changed to reflect that daily intake is presented in this appendix and not carcinogenic risks or hazard indices.

If I can be of further assistance of if you have any questions please contact me at X1586.