The findings and conclusions in this presentation are those of the author and do not necessarily represent the views of the Agency for Toxic Substances and Disease Registry or the U.S. Department of Health and Human Services

Opening Remarks and Introduction of Panel Chair

Dr. Tom Sinks
Deputy Director, NCEH/ATSDR

29 APR 09

*** D R A F T - SUBJECT TO CHANGE ***

ATSDR
AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY

Opening Remarks

- ATSDR is relying on modeling quantify historical exposure at Camp Lejeune as data are not available
- To assure best science, ATSDR believes external review of methods and results should be part of study process
- Panel members represent experts in areas of geohydrology, groundwater hydraulics, fate and transport analyses, water-distribution system methods, numerical modeling, uncertainty and probabilistic modeling methods, epidemiology, and public health

Opening Remarks

- Objectives for next two days
  - Obtain from panel members evaluations and critiques on approaches, data discovery and analysis activities, and modeling methods used by ATSDR
  - Allow members of the public an opportunity to provide panel chair with comments and questions
- ATSDR will address panel recommendations, determining how and when recommendations should best be implemented for input to epidemiological study

Panel Chair

- Robert M. Clark, PhD, PE, DEE
  - Worked as an environmental engineer at the U.S. Public Health Service (USPHS) and U.S Environmental Protection Agency (USEPA)
  - Appointed to Senior Expert Position at USEPA in 1999
  - Has made major contributions to fields of public health and water-distribution systems analysis
  - Authored or coauthored more than 350 papers and publications and five books
  - Received numerous public health and engineering awards such as the USPHS Meritorious Service Award (1983) and the ASCE Rudolph Herring Medal (1996)
  - Retired from USEPA in 2001 and is now an independent consultant

Statement by Panel Chair

Robert M. Clark, PhD, PE, DEE

*** D R A F T - SUBJECT TO CHANGE ***

Charge to Panel

Given the state of the science for reconstructing historical levels of contaminants in drinking water for the purpose of estimating human exposures, do the data analysis and computational methods used and proposed by ATSDR provide an adequate level of accuracy and precision?

Question 1

- Based on information provided by ATSDR to the panel, are there modifications or changes that ATSDR should consider making in its approach to quantifying historical concentrations:
  - Data analysis?
  - Groundwater flow and contaminant fate and transport?
  - Distribution of drinking water?
- What changes in its approach, if any, should ATSDR consider?

Question 2

- ATSDR has provided panel members with summaries of information, data, and preliminary analyses that will be used for reconstructing historical contaminant concentrations at Hadnot Point and Holcomb Boulevard
  - What data analysis and modeling complexities do panel members anticipate and what are their concerns?
  - Which modeling methods do panel members recommend ATSDR use in providing reliable monthly mean concentration results for exposure calculations?

Question 3

- ATSDR established a calibration target of ±1/2 order of magnitude for comparing measured and simulated water-quality data for the Tarawa Terrace contaminant fate and transport model.
  - Are there established standards or guidelines in the fate and transport modeling community for determining and applying specific calibration targets? If so, what are those standards or guidelines?
  - If ATSDR should establish different calibration targets for the Hadnot Point and Holcomb Boulevard areas (compared to targets used for the Tarawa Terrace model), what should the calibration targets be?
- What specific changes, if any, should ATSDR consider its calibration target strategy for the Hadnot Point and Holcomb Boulevard contaminant fate and transport model?

Question 4

- ATSDR has been provided with information that Hadnot Point drinking water (contaminated) was periodically transferred to the Holcomb Boulevard water-distribution system (non-contaminated drinking water) during the period 1972–1987 (typically for a few hours during April, May, and/or June). This may require the use of a water-distribution system model such as EPANET to quantify the spatial and temporal distribution of historical drinking water concentrations.
  - Because the water transfers occurred intermittently, which water-distribution system modeling approach do panel members recommend as the most sensible and reliable for estimating monthly mean historical concentrations (e.g., simple mixing, all-pipes model, etc.)?
  - Because continuous descriptions of the date and duration of the water transfers are not available, do panel members recommend simulating the spatial distribution of historical drinking water concentrations solely for a "typical" month (e.g., June) during these years?
  - Given the intermittent supply of contaminated Hadnot Point water to the Holcomb Boulevard water-distribution system, what simulation scenarios do panel members recommend be developed to provide exposure concentrations for use by the epidemiological study?

Question 5

- ATSDR has set a target date of December 2009 for completing historical reconstruction modeling tasks for the Hadnot Point and Holcomb Boulevard areas. What specific activities, if any, does the panel suggest ATSDR modify and how should the project schedule be modified?