



Oak Ridge Reservation Environmental Management  
Site Specific Advisory Board  
(ORREMSSAB)  
3 Main Street  
Oak Ridge, Tennessee 37830  
(423) 241-3665

August 28, 1996

Mr. Nelson Lingle  
Chief, Oak Ridge Remediation Branch  
DOE Oak Ridge Operations  
3 Main Street  
Oak Ridge, TN 37830

Dear Mr. Lingle:

The Oak Ridge Reservation Environmental Management Site Specific Advisory Board (ORREMSSAB) Environmental Restoration (ER) Committee completed its review of the Interim Proposed Plan for Union Valley Upper East Fork Poplar Creek Characterization Area dated June 1996. The full Board reviewed and approved the enclosed comments and recommendations at the August 28, 1996 meeting.

The ORREMSSAB appreciates the opportunity to review the Union Valley Interim Proposed Plan and looks forward to your consideration of and responses to the enclosed comments and recommendations.

Sincerely,

Bob Peelle, Chair  
ORREMSSAB

BP/sb

Enclosure



**Interim Proposed Plan for Union Valley**  
**Upper East Fork Poplar Creek Characterization Area (Issued June 1996)**

**Comments/Recommendations from the**  
**Oak Ridge Reservation Environmental Management**  
**Site Specific Advisory Board**  
**August 28, 1996**

**General Comments**

- The plan seems adequate for the immediate future, but the five year term seems questionable. If there is knowledge that no large quantity of carbon tetrachloride or other contaminant(s) exist(s) under the site so that future off-site concentrations will not increase, the plan would be more acceptable. The plan should include specific commitments for work in the near future if there is the possibility that concentrations will increase. The points of highest concentration on-site must be sought, and corrective actions planned in the near future, not five years hence. The overall effort should include the region where Scarboro Creek re-enters Oak Ridge Reservation (ORR), south of the Arboretum.
- Many small readings are reported and then discounted. When questionable readings are obtained, they should be checked using more sensitive or reliable apparatus.
- The proposed license system resembles buying short-term rights to pollute groundwater under the grantors land, an unacceptable concept used alone for a five year period.
- Plans to notify local government are too vague. Recording the licenses at the Register of Deeds office should be considered.
- A revised document should be made more understandable to the general public.
- Please indicate the source of standards and the method used to obtain contaminant standards.

The above comments are based on a concern that the reported observations show the leading edge of a serious groundwater plume.

- The Interim Proposed Plan for the Union Valley Upper East Fork Poplar Creek Characterization Area (EFPC CA) is based on the "Union Valley Interim Study Remedial Site Evaluation" (Y/ER-206/R1, February 1995). The Tennessee Department of Environment and Conservation (TDEC), DOE Oversight Division, commented on this document in a letter dated June 2, 1995. The 'UV Interim Study Remedial Site Evaluation' has not been redrafted in response to these comments. In this letter, a number of significant concerns were described, including questionable analyses of data and assumptions on the hydro-geology of the site. How have the concerns in this letter been addressed?

### Specific Comments

- Page 1, Introduction, Paragraph 3: The word "limit" as used here suggests that DOE would approve of some level of "unacceptable activities." The word "limit" should be replaced with the work "prohibit."
- Page 3, Paragraph 1: In this paragraph, it is stated that there are six groundwater monitoring wells in Union Valley. These six wells actually consist of two locations, with three wells at each location (each well monitoring a different depth). These wells appear to be inadequate to characterize and monitor changes in the plume and should be supplemented. Please explain clearly that only two locations are involved and why only two locations are adequate.

In the last line of this paragraph, it is stated that "No contamination has been found in the groundwater at the quarry." Please describe the extent of sampling activities that have been conducted at the quarry and how certain DOE is that no contamination exists there.

- Page 3, Paragraph 2: In describing the use of water from Scarboro Creek for irrigation at the Arboretum, the text states that "Some potentially hazardous constituents have been detected in the springs that feed Scarboro Creek, but the source of these constituents has not been confirmed, nor has any risk from those constituents been established." Please list which contaminants and the levels of contamination that have been found in Scarboro Creek and describe what actions are being taken to determine the source of these constituents. Also, please indicate what precautions are being taken to prevent adverse effects on human health and the environment from the use of water from Scarboro Creek. Human health and the environment should be protected even though the source of the contamination has not been confirmed.
- Page 3, Paragraph 3: Although this interim action is intended only to address contamination resulting from operations in the Upper EFPC CA, plans to investigate other potential sources either by DOE, TDEC, USEPA or another agency should be described.
- Page 5, Paragraph 2: In this paragraph, it is stated that the plume is assumed to be contained in the Maynardville Limestone. Please describe the basis of the assumption that the plume is contained in the Maynardville Limestone and the degree of certainty that this assumption is correct. This assumption is questioned in the letter dated June 2, 1995 from TDEC, DOE Oversight Division, to DOE.

Also in this paragraph, it is stated that "Little contamination is expected at 300 m (1,000 ft.) and below because there are fewer developed karst features at those depths and the formation is tighter." Is this conclusion based on a literature review or have core samples been collected in Union Valley to confirm this theory? This is especially important near the source of the plume where dense non-aqueous phase liquid (DNAPL) is suspected to be present.

- Page 5, Summary of Risks, Paragraph 1: In this paragraph, it is stated that a number of organic, inorganic, and radioactive constituents were detected in Union Valley groundwater and surface water, but that the carbon tetrachloride-dominated plume is of particular interest because it originates from the Upper EFPC CA. Please include in the document what the source(s) of the other contaminants is (are) and how are they being addressed.
- Page 5, Summary of Risks, Paragraph 3: The last sentence says that "Ecological risk evaluations were not included in the Union Valley interim study." Please state whether ecological risk evaluations will be included in the Upper EFPC CA remedial investigation.
- Page 5, Summary of Risks, Paragraph 4: In the last sentence, it is stated that "...some constituents could be found to originate from the municipal landfill or from other sources and would be outside the scope of this interim proposed plan." Although the municipal landfill and other sources may be outside of the scope of the Plan, they are still a concern of the public. Therefore, the responsible local government agency should be notified and reference to this notification should be included in the Plan. Please identify the municipal landfill and show the location.
- Page 6, Description of Alternative 2 (Institutional Controls): There is no mention of a groundwater or surface water monitoring program to ensure that the proposed institutional controls are adequate. The monitoring program that will be in place should be described (e.g., which monitoring wells and surface water locations would be sampled, sample frequency, constituents analyzed).
- Page 6, ("Institutional Controls") and Page 8 ("Short-Term Effectiveness"): Annual title searches are discussed on Page 6 ("...DOE would institute an annual title search...") and on Page 8 ("...ensured by DOE's annual title searches and notifications..."). Please explain exactly who would do the title searches and describe what mechanisms will be in place to ensure that annual title searches are conducted.
- Page 9, Costs, Paragraph 1: In this paragraph, the assumed 6-year duration of the interim actions is referenced. Please explain why the license term is six (6) years instead of five (5) years as stated in Item 2 of the license?