

**COMMENTS REGARDING THE
SECOND DRAFT FINAL REMEDIAL INVESTIGATION/FEASIBILITY STUDY**

FOR

THE PIT 7 COMPLEX

BY

PETER STRAUSS

PM STRAUSS & ASSOCIATES

AND

TRI VALLEY CAREs

January 20, 2005

January 20, 2005

Claire Holtzapple
U.S. Department of Energy
Livermore Environmental Programs Division
Lawrence Livermore National Laboratory
P.O. Box 808, L-574
Livermore, California 94551

**Subject: Comments on the Second Draft Final Pit 7 Remedial
Investigation/Feasibility Study**

Dear Claire:

Enclosed are Tri-Valley CAREs comments that address items to be included in LLNL's Second Draft Final Remedial Investigation /Feasibility Study for the Pit 7 Complex.

Peter Strauss serves as Technical Advisor to the Tri-Valley CAREs, recipient of a Technical Assistance Grant from the U.S. EPA, and these comments are submitted by Peter Strauss in coordination with Tri-Valley CAREs' executive director, Marylia Kelley.

These comments are divided into two sections:

- 1) General comments;
- 2) Specific comments;

Yours very truly,

Peter M. Strauss and Marylia Kelley

cc:

Kathy Setian, US EPA
Ted Park, DTSC
Susan Timm, CVRWQCB
Leslie Ferry, LLNL

GENERAL COMMENTS

- 1) Tri-Valley CAREs (TVC) strongly believes that hydraulic control must be part of the remedy. Leaving large amounts of tritium to migrate in the groundwater is unacceptable, and violates the letter and spirit of State Water Resources Control Board Resolutions 92-49 and 68-16, both of which indicate that potential drinking water sources should not be contaminated.

Notwithstanding the above statement, Tri-Valley CAREs appreciates the additional analysis that was added to the draft indicating that complete capture of the plume and subsequent re-injection would run the risk of further spreading the plume, at least if reinjection is performed according to the scenario analyzed. However, we think that the goal of hydraulic control should not be abandoned. Therefore, we offer these alternate pathways forward.

First, some initial analysis should be performed to determine whether reinjection into a different groundwater lens in the aquifer might yield significantly different results.

Moreover, hydraulic control need not be approached solely as an “all or nothing” enterprise. For example, the Final RI/FS can and should analyze hydraulic control with the goal of substantially slowing the migration of the plume as the goal of the model. Slowing the migration of the plume would allow more time for the tritium to decay.

As such, we recommend that the Section on Hydraulic Control be folded into Section 3.2.2.2 (Groundwater Extraction and Ex-Situ Treatment). This remedy proposes establishing an injection well gallery, whereby extracted water containing nitrate, perchlorate, depleted uranium and tritium would be treated and re-injected. (There would be no treatment for the tritium). This could be expanded with a few additional extraction wells that would serve the purpose of slowing down the plume. In our opinion, this would provide LLNL with an adaptable strategy that could be optimized at any of a number of points, as the remedy is staged and data indicates. Optimization could take place in the upstream hydraulic diversion, extraction of source material, ex-situ treatment and re-injection, and partial hydraulic control.

- 2) We think that monitored natural attenuation (MNA) is not appropriate to consider for Pits 3 and 5 until there is a stable or shrinking plume controlled at the source. There is more tritium locked up in the vadose zone than previously had been predicted, and more ways to move it from the source. The better way to deal with this problem is to contain it, and remove the source (areas with high concentrations in the vadose zone and the pits) when practical. MNA should only be considered after the source is controlled or removed.

TVC re-iterates that if MNA is selected, most of the contaminant mass must be reduced through degradation. In DOE’s January 8 response to **TVC Specific Comment 1** it estimates that only 50 percent of the reduction in activity is due to radioactive decay. We think that this is inadequate, and further supports the need for hydraulic control. We propose that consideration of MNA as a “remedy” should be limited to instances where it can be demonstrated at least 75 percent of the reduction take place through biological, chemical or radiological degradation. (This is offered as a bare

floor, minimal percentage for **considering** MNA. Fifty percent is not in the ballpark.)

- 3) The assumed future use of the land will dictate the clean-up levels, and thereby restrict the allowable future uses of the land. This is a conundrum that we would not like to see. Tri-Valley CAREs disagrees that industrial standards should be used for Site 300. As we have stated in our Community Acceptance Criteria for Site 300, the strictest clean-up standards should be applied to the site. We recognize that residential standards may not be feasible in a few small places, but on the whole, residential standards should be used. In the future, this would allow DOE to more easily dispose of the property and limit its liability. Also, because the Bay Area is growing so rapidly, and residential growth is beginning to occur in Tracy and near Site 300, it would be unfortunate if the cleanup performed in 2005 -2006 dictate how this 11 square mile site will be used in the future. We recommend that the future land-use assumptions should consider the property multiple-use (residential, industrial, commercial and recreational) with a few areas where hazard controls are necessary due to long-lived contamination.
- 4) Tri-Valley CAREs believes that risk from groundwater should be included in the Final RI/FS. DOE has said that in the future groundwater will not be used for drinking water at Site 300. Situations change, and, so, DOE's current intent notwithstanding, the risk calculations should be part of the document. (See also our specific comment #3, below, which we believe may be a typo, but which needs clarification none-the-less.)
- 5) Notwithstanding DOE's response that ARARs that establish clean-up goals not be included in the Interim ROD, TVC strongly reiterates that State Water Resource Control Board Resolution (SWRCB) 68-16 (i.e., the non-degradation policy) and Resolution 92-49 should apply and that the goals of the interim remedies should be set to account for these.
- 6) In light of EPA Comment 2 (proceeding directly to a Final ROD for Pit 7) and its request to discuss this crucial issue at the next RPM meeting scheduled for January 28, 2005, Tri-Valley CAREs would like to participate in that discussion. Therefore, we ask that we be invited to the next RPM meeting.

(For reference, this is the EPA Comment: Despite the technical issues identified by EPA and the state regulators, we believe that these issues can and should be resolved cooperatively within the context of the Federal Facility Agreement (FFA). Once resolved, the parties will be able to move forward with a Proposed Plan and Record of Decision (ROD) for the Pit 7 Complex. In 2001 DOE/LLNL and the regulators agreed to an Interim ROD for several OUs, in part to allow time to build the remedies and evaluate their performance before setting final cleanup standards. Because the ROD and construction of the remedy at the Pit 7 Complex will occur shortly before the Final Site-Wide ROD, there is little benefit in proceeding with an Interim ROD at this time. EPA recommends that DOE/LLNL proceed directly to a Final ROD at this time for Pit 7. This will also allow the benefit of a full analysis of alternatives in light of the chemical-specific ARARs and cleanup standards. EPA would like to discuss this option at the next RPM meeting scheduled for January 28, 2005.)

- 7) Of concern is potential receptors exposed to contaminants from Spring 24 near Pit 7 and intermittent surface waters from Elk and Doall Ravines. It is unclear from the RI/FS how exposure from this source will be controlled.

SPECIFIC COMMENTS

- 1) Regarding the identification of Chemicals of Concern (p. 42), one of the criterion is that a chemical is screened out if the calculated risk was less than 10^{-6} and a Hazard Index of less than 1. Most of the data in the report uses the 1992 SWRI, which identified cancer slope factors. We recommend that these be reviewed, for many cancer slope factors have been modified in the subsequent 12 years. In particular, since volatilization is one of the pathways, we want to point out that EPA Region IX has promulgated a “provisional” PRG for TCE. This is based on new information developed in the early 2000’s. The acceptable level in terms of inhalation is considerably more stringent than the previous standard (i.e., 0.017 micrograms per cubic meter for residential exposure and 0.043 micrograms per cubic meter for occupational exposure).
- 2) At page 44, the fate and transport model indicates that tritium or uranium will not impact a hypothetical well at the eastern boundary of the site. This is not relevant and flies in the face of Resolution 68-16. We believe that the point of compliance is at the point of detection – not the site boundary.
- 3) On page 47, it states that “groundwater is used at Site 300 for drinking water”. Please indicate the location of these drinking water wells.
- 4) Referring to page 48, SWRCB Resolution 92-49 does not suggest that “background conditions should also be a long-term remediation goal.” There is no reference in 92-49 that refers to long-term.

ends