

**COMMENTS REGARDING THE
PROPOSED PLAN FOR THE PIT 7 COMPLEX**

BY

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AND

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SUBMITTED ON BEHALF OF

TRI VALLEY CAREs

May 1, 2006

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Subject: Comments on the Proposed Plan for Pit 7

Dear Claire:

Enclosed are Tri-Valley CAREs comments that address LLNL's Proposed Plan for the Pit 7 Complex.

Yours very truly,

Peter M. Strauss
and
Marylia Kelley

cc:

Kathy Setian, US EPA
Jacinto Soto, DTSC
Susan Timm, CVRWQCB
Leslie Ferry, LLNL

COMMENTS

1. We want to take this opportunity to thank the environmental management staff who have worked on Site 300/Pit 7. We realize that it has been a difficult process, and it has taken some time to get to this point in the process. We have been working for more than 15 years on this cleanup, and this specific site is of major concern to us.
2. The Final Feasibility Study (FS) and the Proposed Plan both reflect the addition of language that the remedy **should prevent plume migration**. We hope that these are not merely words added to satisfy regulators and the community, but a real commitment on the part of DOE to attempt to actually prevent the tritium plume from migrating. First, we appreciate that based on prior comments from TVC, the DOE/LLNL has clearly included "preventing plume migration" as part of the Remedial Action Objectives, or RAO (page 5). However, that objective is not specifically carried forward in the Summary of Cleanup Alternatives that are listed on page 5 underneath the Remedial Action Objectives.

We recommend that DOE/LLNL need to add a "remedy component" that will actually meet the objective. As it presently stands, while the objective of preventing plume migration is listed at the top of the page, there is nothing in the draft final proposed plan to demonstrate *how* LLNL/DOE will carry it out. To ensure that the objective of preventing plume migration is carried out, we recommend that DOE/LLNL add a horizontal line to the table that summarizes cleanup alternatives on page 5. The objective is "retarding plume migration," the remedy component could be listed as "enhanced monitoring of the leading edges of the plume accompanied by hydraulic control measures as needed." Tri-Valley CAREs strongly recommends that this additional horizontal line to the table be added – specifying the method that will be used to carry out the RAO.

3. Tri-Valley CAREs remains convinced that active hydraulic control of the distal end of the tritium plume should be part of the remedy, at least as an option, if the other parts of the remedy do not sufficiently "prevent migration". TVC believes that the remedy is not adequate unless the tritium plume is contained. We use this word with care, as opposed to "captured", because we believe that there should be flexibility in meeting the goal of preventing plume migration. It does not have to be complete capture: but it should slow the migration of the tritium plume to the maximum extent practicable, which would allow more time for the tritium to decay. In other words, it does not have to be all or nothing. The all or nothing approach is what, we fear, has been DOE's approach to the problem.

TVC has suggested in previous comments that the extraction/injection well gallery be expanded with a few additional extraction wells that would serve the purpose of slowing down the tritium 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.

These are not new comments, and we think that DOE in its response (dated February 15, 2006) has missed the point, an important piece of information, and is unable to go a step further in your remedy selection, which would truly provide long-term protection for the environment. DOE stated that achieving “even partial hydraulic control” would require much larger volumes of water to be extracted and re-injected into an upgradient lens underlying the pits. DOE has posited that this would inundate the pits or flow in directions that would contaminate pristine waters. This may be true if all of the water was extracted and re-injected in that lens, but that is not the only option. First of all, all the water does not have to be extracted. Second, it could be re-injected into the alluvial aquifer, or another hydrostratigraphic unit. Third, we expect that with the upstream hydraulic diversion, there would be some drying out of the aquifers, allowing more space for re-injected water. So, again, it is our strong recommendation that DOE keep this option open, and make it part of the Proposed Plan.

4. Additionally, we have reviewed all the information presented in the Remedial Investigation and the Feasibility Study. Based on our analysis, the waste sites were not fully characterized so that hot spots could be identified and excavated if appropriate. It appears from the final RI that monitoring wells (for groundwater) were not placed in Pit 3 or 5, only around them. Several boreholes measuring soil moisture concentrations were made into Pit 3, but only three in Pit 5, and along the edge of the pit. (Figure 2-15 in the July 2005 Final RI/FS). It is based on maximum tritium samples measured in 1999, at various depths.

The seven Boreholes in Pit 3 ranged from 1.6 million to 6.9 million pCi/L of tritium. We believe that these values are significant and the higher locations should be considered for excavation. Three boreholes in Pit 5 had the following results: 76 thousand pCi/L - 595 pCi/L. Because these were taken along the edges of the pit, they most likely are not representative of activities in the middle of the pit.

The text of the Proposed Plan (p. 18) estimates that 11.7 Ci of tritium remain in Pit 3, with 80% residing in the vadose zone below the pit, and only 2.4 Ci in the pit. It states that the presence of significant amounts of contamination in the vadose zone beneath the pits has bearing on the “feasibility of remedial alternatives with source control components that involve waste excavation”. We believe that it is a significant weakness of the proposed plan that excavation is taken as an all or nothing proposition. There is potentially, a "middle path" -- one that utilizes hydraulic diversion and that adds "hot spot" removal/excavation in the pits. We strongly recommend that the preferred alternative preserve the future option of excavation or "hot spot" removal by including as part of the "remedy component" further characterization and possible partial removal of toxic and radioactive waste from one or more of the unlined pits.

5. To provide a larger context, in environmental cleanup, years of experience has led to the realization that the significant uncertainty requires adopting a flexible,

iterative approach. Frequently missed target dates and failure to meet remedial action objectives (RAOs) have forced the development of mechanisms that allow for the continuous improvement and optimization of remediation technologies and techniques, known as Remedial Process Optimization (RPO). The Proposed Plan will lead to the Record of Decision. The ROD is essentially the strategic plan for achieving the Remedial Action Objectives (RAOs) (e.g., preventing plume migration). By its very nature, the ROD should incorporate a decision logic and the basis for future adaptations as part of the overall completion strategy for the site. Whatever is agreed upon here becomes the overriding legal requirement for cleanup of the site. We note that the Interstate Technology Regulatory Council (ITRC) of which the state of California is a founding member and is funded by EPA and DOE has prepared some guidance on RPO. It notes that **“Optimization should be an inherent element of the remedy evaluation, selection, and design process”**. (ITRC – Remediation Process Optimization: Identifying Opportunities September 2004 for Enhanced and More Efficient Site Remediation). What we are proposing is that DOE adopt a strategy for cleaning up Pit 7 that is flexible and iterative.

6. TVC reiterates from previous comments that if Monitored Natural Attenuation is selected, most of the contaminant mass must be reduced through degradation. We propose that an objective for any remedy that uses MNA have at least 75 percent of the reduction take place through biological, chemical or radiological degradation. The assumed future use of the land will dictate the clean-up levels, and thereby restrict the allowable uses of the land. This is a conundrum (i.e., current cleanup levels dictating future land use) that we would not like to see.
7. 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 2006 dictate how this 11 square mile site will be used in the future. In addition there have been high level talks within the current administration of stopping Site 300 related test activities. The DOE fiscal year 2007 budget request specifies that close out is being considered for Site 300.
8. TVC strongly reiterates that State Water Resource Control Board Resolution (SWRCB) 68-16 (i.e., the non-degradation policy) applies to groundwater at this site, not merely to discharges of treated water. This resolution applies to discharges: either underground or above ground discharges as is commonly understood by the general term discharge. While EPA notes that Resolution 92-49, paragraph III.G may be the more stringent of ARARs for setting in-situ cleanup standards, other Sections of 92-49 are also relevant, including paragraph III. F. Specifically, this paragraph cites that cleanup and abatement activities (emphasis added) shall conform to the provisions of Resolution 68-16.

9. Given that there are ecological receptors of special status and several rare and endangered species at Site 300 that may be affected by remedial action, we find it improper to proceed with a decision before the effects are fully known. Of particular concern are the red-legged frog and the tiger salamander. We recommend that both the United States Fish and Wildlife Service and the California Department of Fish and Game be provided the opportunity to comment on this document before a decision is final. Note that Figure 2-18 of the same document charts 2nd quarter 2003 tritium plume. The extent of the 1,000 pCi/L goes beyond Spring 24, which was 2290 pCi/L. Also, page 13-14 describes the ecology of the Pit 7 area. It notes that “amphibians are known to use Spring 24”.
10. Given the extensive community of Spanish-speaking residents in Tracy, we recommend that the Proposed Plan (and/or a fact sheet of its key points) be offered in Spanish and English.

Again, thank you for this opportunity to comment on the Proposed Plan for the Pit 7 Complex. We continue to appreciate the commitment to effective remediation that staff at DOE and LLNL have shown over the years. And, we further commend your commitment to community involvement – even as we reiterate our request for key materials to be offered in Spanish and English and that additional outreach be undertaken to involve the Latino community in the Tracy area.

We offer these recommendations in the spirit of ensuring a comprehensive and effective cleanup of Site 300 not only in the present but also into the future (until completion). We have noted above the relationship of the Proposed Plan to the ROD. In sum, we believe that the Proposed Plan for this area is one of the critical decision points for achieving the goal of effective cleanup of Site 300.

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