

# Tri-Valley CAREs

Communities Against a Radioactive Environment

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*Peace Justice Environment  
since 1983*

September 29, 2010

Phil Wong  
U.S. Department of Energy  
Livermore Environmental Programs  
Lawrence Livermore National Laboratory  
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Livermore, California 94551

Pete McKereghan  
Livermore Site Project Leader  
Environmental Restoration Division  
Lawrence Livermore National Laboratory  
Livermore, CA 94551

**Subject: Comments on the TFA West Restoration Project**

Dear Phil and Pete:

Attached are the comments of Tri-Valley CAREs (TVC) that address the TFA West environmental restoration project. While we are pleased that the Dept. of Energy (DOE) and Lawrence Livermore National Laboratory (LLNL) have decided to hold a public meeting on this response action, we believe that the meeting is being conducted very late in the process. We are concerned that the major decisions concerning the method and location of the restoration project have already been made prior to seeking input from the affected community.

Sincerely,

Marylia Kelley  
Tri-Valley CAREs

Peter Strauss  
PM Strauss and Assoc.

cc:

John Lucey US EPA  
Kathy Setian US EPA  
Jacinto Soto, DTSC  
Agnes Farres, RWQCB  
Claire Holtzapple, DOE  
Scott Wilson, LLNL

## Tri-Valley CAREs' Comments

1. As noted above and during a meeting between Tri-Valley CAREs and DOE, LLNL and the regulatory agencies in October 2009, we stated that, prior to making a decision, public outreach (including a meeting) should be undertaken by DOE/LLNL to inform and hear comments from those living in the area. While we are pleased that this is going to take place one full year after we were briefed on the potential proposals for TFA West, we believe that the scope of the meeting is too narrow and too late for residents most affected to have meaningful input.

TVC appreciated that LLNL developed a number of alternatives for treatment of groundwater at Well 404. However, we think that selecting a remedy on the primary basis that it would not require a Record of Decision (ROD) Amendment or Explanation of Significant Difference (ESD) before obtaining input from the community is inappropriate. We therefore request that in the future, LLNL make a concerted effort to involve the community earlier in the decision-making process when its voice can have meaningful impact on the decision.

2. Apparently, after consultation with the City of Livermore, DOE/LLNL is going to present one option to the community at its October 7, 2010 meeting. We have been informed that during LLNL's presentation to the City, the City preferred the Charlotte Way/Susan Lane pipeline route because the City owns the route under the streets rather than under the arroyo. Recognizing that this is a positive factor in route selection, we have not seen the various pros and cons of choosing one pipeline extension route over another.

3. We note that the TFA West pipeline project is described differently in two documents, both released in 2009. Tri-Valley CAREs believes that these differences are important. Specifically, one document describes the TFA West pipeline extension project as including six new monitoring wells and the other document describes the TFA West pipeline extension project as having no additional monitoring wells.

Specifically, in the DOE/LLNL Report titled, Treatability Study Summary and Proposed Cleanup Alternatives for the TFA West Area (Sept. 2009), there are no additional monitoring wells to be installed. We note in particular that there are no monitoring wells indicated to the west of Well 404, which is the extraction point for TFA West. Lack of one or more nearby monitoring wells to the west creates a situation wherein there is no indication of whether or not the "leading edge" of the plume migrates westward, which is the general direction of groundwater flow in the area. The estimated cost of the TFA West pipeline extension option in the Treatability Study is \$560,000.

In contrast, the DOE Livermore Site Office's April 2009 application to Headquarters for funds under the American Recovery and Reinvestment Act (ARRA) for the TFA West pipeline extension project includes six new monitoring wells. The ARRA submittal document states the purpose for these additional wells: "Specific accomplishments of this [pipeline] project include... Drilling of six off-site monitor wells to measure restoration progress..." The estimated cost of the TFA West pipeline extension project in the ARRA submittal document is \$966,000. In response to a question regarding the cost differential (i.e., \$966,000 vs. \$560,000), TVC's Executive Director was told by LLNL technical and managerial staff that the cost difference was, indeed, the addition of six monitoring wells.

Measuring "restoration progress" is crucial to the success of the cleanup. In plain language, having a robust plume monitoring capability in place lets everyone know with appropriate certainty that all of the contaminated groundwater in the area has been pumped into the pipeline, and sent to TFA for cleaning, before the project is terminated. TVC believes that the robust, long-term monitoring capability that the six new wells will provide is an important and necessary component of the project. Therefore, TVC recommends that a more robust pipeline project that includes the additional monitoring wells be part of a final remedy selection. Further, TVC requests that this be part of the discussion at the DOE/LLNL meeting on October 7, 2010.

4. Also in the Sept. 2009 DOE/LLNL Report, Treatability Study Summary and Proposed Cleanup Alternatives for the TFA West Area, reduction of chromium is given as an advantage for several of the options (Table 1) and as a potential disadvantage for In-situ Oxidation (mobilization of chromium). If extension of the pipeline is chosen, contaminated groundwater would be pumped to the TFA Treatment Facility. This facility does not have a treatment system for chromium.

We have sought clarification on this issue, and have been informed by LLNL technical and managerial staff that chromium is naturally occurring in the TFA West area and that if piped to TFA it will not be above cleanup standards. While this may be true, sending it through a pipeline that also receives groundwater from pumping wells other than W404 (i.e., closer to the LLNL boundary) may dilute any chromium. It is therefore TVC's recommendation that LLNL monitor for chromium at the extraction point, and if it is found above cleanup levels at the extraction point, then TFA should be modified to include an ion-exchange unit to remediate the chromium.

We note that the mention of chromium in the Treatability Study and Proposed Cleanup alternatives for the TFA West Area (Sept. 2009) is limited to the above-noted cleanup options discussion and is not discussed in any detail in the rest of the text. Thus, we are also not clear what the valence state of the chromium is, although we assume that it is total chromium, and not exclusively hexavalent. If that is not the case, we would like to emphasize that the Office of Environmental Health Hazard Assessment's (OEHHA) draft Public Health Goal (PHG) for hexavalent chromium is 0.06 parts per billion (ppb).

This contaminant (hexavalent chromium), although not new to remediation managers, has taken on increased importance in the last few years. OEHHA draws a clear conclusion of its toxicity (OEHHA 2009a):

The findings of available human, animal, genotoxic, and toxicokinetic studies all indicate that hexavalent chromium is a possible human carcinogen by the oral route. Given these observations and until more human and/or animals studies become available, it is prudent to consider this hazard in the development of a proposed PHG.

Major concerns that we have about the pipeline extension also include noise abatement, traffic disruption, and air quality. We are hopeful that at the public meeting, LLNL will take time to address these issues. As of now, there is no information. With regards to the latter concern, we recommend developing a Community Air Monitoring Plan (CAMP) similar in nature to the Plan that the New York Department of Health requires during construction projects. The intent of this program is to monitor volatile organic compounds (VOCs) and particulates during construction and shut down those activities if these indicators reach a certain level. We have attached New York's Technical Guidance to the end of this comment. TVC requests that a CAMP be part of the discussion at the DOE/LLNL October 7, 2010 meeting.

**TECHNICAL GUIDANCE FOR SITE INVESTIGATION AND REMEDIATION**  
**New York State Department of Health**  
**Appendix 1A**

**Generic Community Air Monitoring Plan**

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air. The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability.

In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical-specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH. Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

**Community Air Monitoring Plan**

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for volatile organic compounds (VOCs) and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate NYSDEC/NYSDOH staff.

**Continuous monitoring** will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

**Periodic monitoring** for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of

such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

### **VOC Monitoring, Response Levels, and Actions**

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.
- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.
- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

All 15-minute readings must be recorded and be available for State (DEC and DOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.