

TO: West Valley Citizen Task Force

FROM: Melinda Holland, Clean Sites

SUBJECT: Summary of December 16, 1997, Technical Workgroup Meeting - **Revised**

DATE: January 22, 1998

At the December 3, 1997, CTF meeting, several members requested a technical workgroup meeting to discuss their concerns about the performance of the slurry wall proposed under Alternative III for the closure of the Main Process Building (Waste Management Area 1). The technical workgroup meeting was held the evening of December 16, 1997, and was attended by: Ray Vaughan and Eric Wohlers, CTF; Dan Westcott and Sonja Allen, WVNS; Tom Attridge and Mike Weishan, NYSERDA; Bob Blickwedehl, Dames & Moore; and via conference call, Joe Price, SAIC; and Melinda Holland, Clean Sites.

The meeting began with Mike Weishan narrating a short video which showed past slurry wall installation at the SDA. After the video, discussion ensued over issues raised in Ray Vaughan's September 14, 1997 memorandum (copy attached) and questions raised by the CTF members. This document summarizes the main points of discussion but does not attempt to cover the level of technical detail discussed at the December 16th meeting.

The first topic flowed from the video of the SDA slurry wall installation. The slurry wall was constructed and tested for permeability to a total depth of 30 feet approximately one week after installation. The results showed a hydraulic conductivity of approximately  $10^{-8}$  centimeters per second, which is equal to or better than the native soil at the bottom of the trenches.

A concern was raised by a CTF member regarding the performance over extended time periods of bentonite clay in a slurry wall. The effects of seismic shock on the structural integrity of the slurry wall and the possibility of liquefaction of soils around the slurry wall were also raised as issues. The focus of the concern was about the susceptibility of the slurry wall to structural failure if some portion of the soil around the wall liquefied. A site consultant responded that if liquefaction occurred, the soil would be (under the worst possible conditions) a dense slurry which would act against the slurry wall backfill the same way as the slurry walls acted against the soil during installation. Therefore, no material migration would occur. Another site consultant responded that even if damage occurred from seismic activity, someone would be present to repair the damage under the site's institutional controls proposal which is part of Alternative III. The CTF member stated that he did not feel that **reliance on** institutional controls is ~~are~~ adequate to protect public health under Alternative III, even if ~~they are~~ allowed by NRC.

Another concern raised was the possibility that the slurry wall will divert groundwater into deeper strata such as the Kent Recessional. The concern had to do with the potential of the slurry wall creating enough back pressure to allow diversion of groundwater to deeper layers. A site consultant stated that installing a french drain just upgradient of the slurry wall can reduce this potential problem. **The member responded that a french drain cannot be expected to function indefinitely without maintenance.**

Structural integrity of the soil in proximity to the waste tanks was discussed as well as the evidence (such as a report by New York State Geologist Bob Fakundiny) of right angle fractures in the Lavery Till at three places on the site. A site consultant stated that Zintars Zadins of Dames & Moore had recently completed a literature review report on this issue; a copy of this report will be made available to the CTF. A CTF member stated that he felt that this site was not suitable for long term in-place disposal because it is resting on a sloping bedrock surface, the soil base may not be stable, and the installation of the 400 plus pilings under the Main Process Building may have opened pathways for waste migration to deeper strata. A site consultant responded that there is no data to support or negate whether groundwater is moving along the soil/bedrock interface.

The CTF member felt that the vertical fractures in the top of the bedrock beneath the site could create a problem. There is growing evidence that there are faults in the Spooner Creek area and that there is faulting above and below the salt of the Salina formation. He felt this new evidence needs further investigation as it relates to long-term disposal at the site. He also stated that there is not enough evidence that the Attica Splay of the Clarendon-Linden fault doesn't continue into the WVDP area. The DEIS did assume an earthquake of a certain magnitude happened at the site, but his concern had to do with earth-shaking and shifting occurring as a result of a significant shock. He felt it was important to understand if the Clarendon-Linden Fault is tied into the Bass Island or Attica Splay.

Another CTF member stated that his concern was the design and long-term integrity of the technology and slurry wall. A site consultant responded that the slurry wall will go to a depth of 35 to 55 feet and will be keyed (extended) into the Lavery Till. The slurry wall would be dug through the plume in two areas, but the majority of the plume would be contained within the slurry wall. An observer stated that the plume groundwater is 100,000 times higher in radioactivity than background in the area where the slurry wall would cut through the plume. She was concerned with how the site would deal with the contaminated soil which would be excavated during construction of the slurry wall. A site consultant responded that they could use soil washing technology in the areas of the plume to treat the soil to free release limits. The estimated 1,000 to 2,000 cubic yards of contaminated soil which must be removed from the trench during construction of the slurry wall would be dealt with by standard radiation handling technologies. A CTF member asked about occupational exposures which might occur during this process. Another asked for clarification from NRC on whether the contaminated soil removed during construction of the trench could be put back into the ground. A site consultant indicated this was a point of law which needed resolution by NRC but indicated that NRC has no precedents for considering contaminated solids as a waste after treatment to free release limits.

In response to another question, a site consultant stated that the slurry wall will penetrate into the Lavery Till about three feet. A CTF member asked if the slurry wall mixture would be uniform from top to bottom of the wall and whether any appreciable settling, due to variable-sized particulates, was anticipated. The site consultant responded that the slurry wall composition is amazingly homogeneous and always tests better than the target permeability.

Eric Wohlers provided the CTF with a verbal summary of this technical workgroup meeting.