

**Comments on Draft
DOE Areas Remedial Investigation Report
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Prepared by Weiss Associates for US DOE**

Comments Submitted by

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I have reviewed this redrafted report, and have a number of the same comments that I had previously. There is still a limited discussion of potential constituents of concern at the site that could affect reuse of the property and groundwater quality.

With respect to addressing the limited number of constituents of concern that have been identified, compared to the arena of constituents that are a threat to groundwater quality and surface water quality, any final monitoring program for the site must include clear provisions for an ongoing review of potential constituents of concern, as new information becomes available. It should also be understood that, like with the perchlorate situation at Aerojet that has been in the local papers, what may be considered adequately investigated, with respect to constituents of concern today, could readily be determined to be grossly inadequate in the near future. Under these conditions, there will be need to reopen the site investigation and remediation to address new constituents that emerge during the infinite period of time that the site is a threat to public health and the environment.

Probably the most significant problem is the attempt by Weiss Associates to justify the designated level modeling effort. As discussed at the last RPM meeting, there continue to be significant problems with the designated level modeling effort, in terms of the assumed conditions for the modeling – namely, average annual moisture content, as opposed to including the potential for wetted front transport. When Weiss Associates was asked to include in their discussion of issues, modeling runs with wetted front transport, they refused to do so. This, to me, is a serious deficiency in Weiss Associates and DOE's approach. The RPMs and the public are entitled to know what could be the rate of transport under conditions where constituents are mobilized in a wetted front and transported through the vadose zone on a wetted front. Such transport does occur. At this time it is not known if this is a major mode of transport. It is, however, a real mode of transport that must be considered. As long as Weiss Associates/DOE refuse to properly address this issue, their efforts to predict the transport of constituents located in soils at the LEHR site, to groundwaters, will be considered inadequate.

The Weiss Associates plots, in which they claim that it is shown that their predictions of rates of transport are borne out by the field data, may strictly be an artifact of how the model was

adjusted to the data. As we heard, Weiss Associates found it necessary to increase the moisture content of the vadose zone in order to keep the points inside of an envelope of prediction. This kind of curve-fitting is dangerous, and can readily reflect a lack of validity of the model, especially under conditions where it is well known that the model does not account for some modes of transport that do, in fact, occur at the LEHR site.

As Susan Timm pointed out, the bottom line is that a comprehensive groundwater monitoring program will have to be conducted forever to determine when (not “if,” but “when”) constituents left in the soils reach groundwaters. It is important to note that this is not an “if” situation. Even Weiss Associates, with their approach of estimating transport based on only limited moisture in the vadose zone, predicts that, eventually, a variety of pollutants will reach groundwater. While they predict, based on annual average moisture content, that it will be a thousand or so years before the pollutants reach groundwater, it is to be hoped that there will be people in this region 1000 years from now who will want to use groundwaters that have not been polluted by the LEHR site.

The key issue that remains to be determined is how the Weiss Associates/DOE predictions of when groundwater pollution will occur will be used by the RPMs in establishing the adequacy of site cleanup, and, most important, the monitoring program that will be implemented for the site as part of site closure. Based on my experience and understanding of the situation, I do not see that the Weiss Associates modeling efforts are going to make any significant difference in the monitoring program that will be needed to determine when groundwater pollution occurs to a significant extent.

If there are questions about these comments, please contact me.

G. Fred Lee