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Department of Energy

Oak Ridge Operations Office
P.O. Box 2001
Oak Ridge, Tennessee 37831—

June 1, 2000

Mr. Steve Kopp
Site Specific Advisory Board
Post Office Box 2001
Oak Ridge, Tennessee 37831

Dear Mr. Kopp:

RESPONSE TO COMMENTS PROVIDED BY THE SITE SPECIFIC ADVISORY BOARD REGARDING THE SALE OF ZINC BROMIDE SOLUTIONS FOR COMMERCIAL RECYCLING AND REUSE, DEPARTMENT OF ENERGY/ENVIRONMENTAL ASSESSMENT - 1324

Enclosed is the Department of Energy's (DOE) responses to the comments provided by the Site Specific Advisory Board regarding the subject Environmental Assessment (EA). DOE has found each comment to be of benefit to the overall effectiveness of the document and has attempted, in good faith, to address each appropriately. The final version of the EA will be modified as necessary to incorporate the response to your questions or recommendations.

If you have any additional questions, please feel free to contact Brian DeMonia of my staff at (865) 241-6182.

Sincerely,

A handwritten signature in black ink, appearing to read "R.C. Sleeman".

Robert C. Sleeman, Group Leader
Environmental Services Group

Enclosure

- cc w/enclosure:
C. Gist, EM-921
B. Westich, EM-921
F. Heacker, Bechtel Jacobs Company LLC

Document Review Record
Document: Draft Environmental Assessment for the Sale of Zinc Bromide Solutions for Commercial Recycling and Reuse,
DOE/EA-1324, February 2000
Reviewer: Steven H. Kopp, Oak Ridge Site Specific Advisory Board (May 4, 2000)

Comment No.	Section/Page	Comment	Response
	General	<p>It has been determined that the material in question is neither low-level radioactive waste nor RCRA hazardous waste. As such, the solutions can be released as government surplus property in accordance with established property management procedures that do not normally involve NEPA evaluations. In addition, the principle technical element of the EA analysis involves the protocols established in DOE Order 5400.5 for the release of "residual radioactive materials." Again, neither this order nor the protocols cited would seem applicable to these materials or the situation being evaluated. Ironically, although the EA indicates that the most likely use of the materials to be sold on the commercial market will involve the deliberate dispersion of these chemicals into the natural environment, no substantive attempt is made in the EA to evaluate the actual environmental impacts that might result from those discharges.</p>	<p>To properly respond to this comment it is necessary to address both the intent and scope of the EA. First of all, the intent of the EA was to allow the public an opportunity to comment on protocols established in DOE Order 5400.5 and DOE's findings as a result of implementing this protocol. An EA was prepared at the suggestion of the Office of Chief Counsel which had determined that the public may not have been provided adequate opportunity to comment on the release process under DOE Order 5400.5 or its requirements. Therefore, Oak Ridge Operations Office has prepared an EA in a good faith effort to allow the public an opportunity to participate in this activity and the decisions made. To address the second concern in this comment, DOE must reiterate the scope of this EA. The EA was intended to address DOE actions and not those of the private sector. DOE actions were determined to be the evaluation of impacts to the public or workers as result of the release of this material for the specific use identified. This evaluation was conducted through use of the protocol established in DOE Order 5400.5. If our evaluation determined that there were no appreciable difference between the used zinc bromide and what could be obtained from normal procurement, then DOE could subsequently sell this material for use. The actual use by a private firm was not considered to be a DOE action and thus was not addressed.</p>

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	General	The SSAB recommends that DOE discontinue any further unnecessary attempts to address this proposed action under NEPA and simply advise the State of Tennessee in formal, written correspondence that, despite earlier erroneous designations, these zinc bromide solutions are not, in fact, low-level radioactive or hazardous wastes and that all references to these materials can be deleted from the Site Treatment Plan.	The reason for developing the EA had nothing to do with change in regulatory status but rather, as explained above, to provide the public an opportunity to comment on the process used to release used materials. This material is different from other materials that have been released by DOE in the past. Materials may be released based on the level of surface contamination due to radioactivity or based on knowledge that the material never entered a radiological area. The zinc bromide could not be released based on surface contamination for obvious reasons but had to be evaluated for potential volumetric contamination. This process had not been subjected to public scrutiny, resulting in the DOE-OR Office of Chief Counsel advising Environmental Management to prepare an EA.
	General	We find that, although the inventory of used zinc bromide solutions currently stored at the East Tennessee Technology Park (ETTP) may be safely released from DOE control for recycling by Tetra Technologies, the evaluation and decision-making process may require more clarification that the document provides.	The draft EA incorporates by reference technical information from the <i>Request for Volumetric Release of Used C-37 Zinc Bromide Solutions for Commercial Recycling and Reuse</i> , which provides additional details regarding the assessment of potential impacts from management of this material.

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	General	<p>A more thorough discussion may be useful of the process in DOE Order 5400.5 to determine that the radionuclide levels of DOE-owned zinc bromide are not statistically different from the levels found in virgin material and any similarity to the Non-Radioactivity-Added (NRA) determinations for hazardous waste to be shipped off-site for commercial treatment, storage or disposal. DOE Order 5400.5 itself states that no guidance is currently available for release of volumetrically contaminated materials but that such materials may be released if criteria and survey techniques are approved by EH-1. NRA determinations are understood to have standards for use of process knowledge, analytical results, or combination of the two. Process knowledge is understood to include adequate knowledge of the complete history of the material and that it was not exposed to unconfined radioactive material or particle beams capable of causing activation. The change in the initial characterization of this material as a waste and removal from service at Oak Ridge National Laboratory to a storage facility at ETRP may indicate a deficiency in process knowledge. The NRA determination process based on analytical results is understood to involve a statistical determination that the radioactivity level is not significantly greater than background from commercially available or virgin materials. Any gap in process knowledge undermines the validity of a null hypothesis that no radioactivity has been added. We feel, therefore, that discussion of process knowledge should be added.</p>	<p>This process is described in the document <i>Request for Volumetric Release of Used C-37 Zinc Bromide Solutions for Commercial Recycling and Reuse</i>, which is incorporated by reference in the draft EA.</p> <p>DOE has NOT made a determination that the used material is not statistically different from virgin zinc bromide solutions. The analytical data, however, indicate that radiological characteristics are similar.</p> <p>The statement in DOE Order 5400.5 regarding lack of guidance is a bit dated. DOE issued additional guidance on this issue in November 1995, as discussed in the document referenced above.</p> <p>This is NOT an NRA determination, but a release of material meeting authorized limits established under DOE Order 5400.5. These are fundamentally different processes, and we regret any confusion in this regard. The reviewer describes the NRA process very well. For the zinc bromide solutions in question, DOE determined that adequate information was not available to make a NRA determination either on the basis of process knowledge nor analytical results. Therefore, the current approach was selected. Process knowledge regarding this material is discussed in the above-referenced document, but is not particularly critical to this process for determining and implementing authorized limits for release of materials containing residual radioactive material.</p>
	Page 1, Sect. 1.2, paragraph 3	D002 is the RCRA hazardous waste code for corrosive characteristic. Lead is D008.	The commenter is correct. The appropriate changes have been made in the final EA.

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	Page 3, Sect. 1.2, first partial paragraph	Samples of new zinc bromide from another commercial supplier may have increased the credibility of the comparison.	Although it may appear as a conflict when comparing the used zinc bromide to the vendor's solution, there is no reason to believe that the vendor's virgin product would be different from another company's. At this time DOE is not aware of another supplier of zinc bromide to the oil industry.
	Page 3, Table 1	All radionuclide results should be in terms of a result plus/minus uncertainty.	Measurement uncertainties not reported in analytical data package due to the very low levels of activity. In most cases, analytical results were qualified as either "J" (estimated value) or "U" (analyte analyzed but not detected). Please see <i>Request for Volumetric Release of Used C-37 Zinc Bromide Solutions for Commercial Recycling and Reuse</i> , which includes this analytical data package.
	Page 14, Waste Management	Disposal of empty containers is not mentioned.	Dispositioning of empty containers is addressed in the final EA.
	Page 18, Hydrology and Water Quality	For treatment in an on-site wastewater treatment facility, it is thought that any bromide in the treated effluent may require special consideration in the National Pollutant Discharge Elimination System permit. If so, this would be an additional disadvantage of the alternative.	The commenter is correct. This comment is addressed in the final EA.
	Page 21, Hydrology and Water Quality	The same comment about bromide in treated effluent from on-site wastewater treatment facility is applicable to leachate from a landfill	Comment noted. See previous response.