

**OAK RIDGE RESERVATION HEALTH EFFECTS
SUBCOMMITTEE (ORRHES)**

**CENTERS FOR DISEASE CONTROL AND PREVENTION
AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY**

Detailed Proceedings of the June 28, 2005, ORRHES meeting

Call to Order/Opening Remarks

The Oak Ridge Reservation Health Effects Subcommittee (ORRHES) convened on June 28, 2005, at the DOE Information Center at 475 Oak Ridge Turnpike, Oak Ridge, Tennessee. Chairperson Kowetha Davidson called the meeting to order at 12:18 p.m.

Introduction of Subcommittee Members and Attendees

Kowetha Davidson asked all attendees to introduce themselves. The attendees were:

Kowetha Davidson, ORRHES Chair
Peggy Adkins, ORRHES member
Don Box, ORRHES member
Herman Cember, ORRHES member
Bob Craig, ORRHES member
Don Creasia, ORRHES member
Karen Galloway, ORRHES member
George Gartseff, ORRHES member
Jeff Hill, ORRHES member
David Johnson, ORRHES member
Susan Kaplan, ORRHES member
James Lewis, ORRHES member
Pete Malmquist, ORRHES member
L.C. Manley, ORRHES member
Barbara Sonnenburg, ORRHES member
Charles Washington, ORRHES member
Chudi Nwangwa, Tennessee Department of Environment and Conservation liaison
Jon Richards, U.S. Environmental Protection Agency Region IV liaison
Brenda Vowell, Tennessee Department of Health liaison
Tim Joseph, U.S. Department of Energy
Marilyn Horton, ATSDR, Designated Federal Official for ORRHES
Bill Cibulas, ATSDR
Mark Evans, ATSDR
Jack Hanley, ATSDR
Susan Robinson, ATSDR
Bill Taylor, ATSDR
Amanda Bird, TA Consulting, Inc.
Al Brooks, member of the public
James Cardwell, member of the public
David Hackett, member of the public
Josh Johnson, member of the public
Fay Martin, member of the public

1 John Merkle, member of the public
2 Norman Mulvenon, member of the public
3 Lynne Roberson, member of the public
4 Lynn Sims, member of the public
5 Janice Stokes, member of the public
6 Luther Gibson, Oak Ridge Reservation Local Oversight Committee
7 Lu Cardwell, Clean Air Friends—Clean Air Kids
8 Pat Hunter, Clean Air Friends—Clean Air Kids
9 Rich Bonczek, SAIC
10 Michael Quick, International Chemical Workers Union Council/International Association of
11 Machinists and Aerospace Workers Center for Workers Safety
12 Gordon Blaylock, SENES
13 Ellen Smith, Oak Ridge Environmental Quality Advisory Board
14 Carolyn Krause, Oak Ridge National Laboratory
15 Janet Michel, Coalition for a Healthy Environment
16 Liz Bertelsen, ERG

Agenda Review and Correspondence

Agenda Review

Dr. Davidson reviewed the main agenda items:

- Status of action items.
- Presentation and discussion by ORRHES member Susan Kaplan on her report titled *Impacts on Oak Ridge Landowners of Off-Site Releases to the Environment from the Y-12 Plant and Associated Long-Term Stewardship Issues*.
- The draft public health assessment (PHA) *Evaluation of Potential Exposures to Contaminated Off-Site Groundwater From the Oak Ridge Reservation*, presented by Dr. Mark Evans (prepared by Lieutenant Trent LeCoultre, who was unable to attend).
- Work group reports and recommendations.
- Two public comment periods.

Dr. Davidson noted that public comment periods were the only fixed times on the agenda; times of other items were flexible. She asked the public attendees to inform her if they had questions and said she would try to have their questions presented and answered during the meeting. Barbara Sonnenburg stated that several members of the public were in attendance, and asked whether the public comment periods could be extended to accommodate any comments going beyond the set time. Dr. Davidson answered that this could be done, explaining that they would be flexible regarding items on the agenda other than the set public comment periods. Ms. Sonnenburg inquired if public comments would be time-limited so everyone had the same

1 amount of time to speak. Dr. Davidson said that she planned to allow public members to speak to
2 the extent possible without limiting their time.

3
4 **Correspondence**

5 There had been no correspondence to report since the May 3, 2005, ORRHES meeting.
6

7
8 **Motion: Approval of May 3, 2005, ORRHES Meeting Minutes**
9

10
11 Dr. Davidson asked if there were any modifications or corrections to the May 3, 2005, meeting
12 minutes. The minutes were approved by voice vote with one abstention (an ORRHES member
13 who had not attended the previous meeting).
14

15
16 **Status of Action Items**
17

18
19 Marilyn Horton explained that a status of action items had been supplied to everyone in their pre-
20 meeting mailing packages. During the meeting on May 3, 2005, a discussion was held on
21 ATSDR's *A Toxicology Curriculum for Communities* and many members requested a copy of
22 the manual. Ms. Horton noted that a CD-ROM was available at this time; however, no hard
23 copies were available because ATSDR's publications warehouse was in the process of moving.
24 When hard copies are available at the end of July or early August, Ms. Horton said, she will
25 provide manuals to those members who requested them. In the meantime, Bill Taylor had a hard
26 copy and a CD-ROM in the ATSDR Oak Ridge Field Office for people to review.
27

28 Invitations to continue serving on ORRHES were provided in the pre-meeting packages. Ms.
29 Horton said that copies of this form had also been placed at each person's seat; these could be
30 signed and returned to her today.
31

32 Ms. Horton asked whether all ORRHES members had received the draft PHA on off-site
33 groundwater. Bob Craig had not received a copy. Ms. Horton said she would give her copy to
34 Dr. Craig and added that extra copies were also available in the field office.
35

36
37 **Status of Oak Ridge Reservation PHAs**
38

39
40 Bill Cibulas thanked the subcommittee for having him and Jack Hanley sit at the table, saying
41 that he looked forward to answering their questions fairly and honestly. He referred to an
42 overhead that presented the stages of each PHA (from preliminary assessment presented to the
43 Exposure Evaluation Work Group, or EEWG, to final release). He said he recognized that
44 ATSDR had only 1 more year to complete the tenure of ORRHES and the remaining PHAs, and
45 expressed his commitment to working diligently with the subcommittee during this time to be as
46 productive as possible.

1 Dr. Cibulas said that they were on schedule to complete the remaining eight PHAs by June 2006,
2 expressing his commitment to using the resources and staff necessary to accomplish this. As the
3 overhead showed, the data validation draft (DVD) PHAs have been completed for all PHAs
4 except for mercury. Dr. Taylor is the principal author of the mercury PHA, which is in progress.
5 According to Dr. Cibulas, no problems are anticipated with keeping this document on schedule.
6 To date, all preliminary assessments (except those for iodine 131 and mercury) have been
7 presented to the EEWG. Dr. Cibulas explained that, in addition to the public comment period,
8 PHAs are also sent out for peer review. ATSDR had intended to share the comments received on
9 the Toxic Substances Control Act (TSCA) incinerator PHA at this meeting; however, due to
10 medical difficulties with two of the document's peer reviewers, ATSDR had not finished
11 receiving and responding to comments. The comments would be presented at the next ORRHES
12 meeting. Dr. Cibulas stated that the documents were on schedule; he said he hoped to complete
13 all of the PHAs by June 2006.

14
15 James Lewis asked about the handout referring to the Division of Health Assessment and
16 Consultation's (DHAC's) plan for collecting information about communities surrounding the
17 ORR, which notes that concerns will be captured (from newspaper articles and reports) and a
18 summary will be prepared. He expressed his concern about how community concerns and issues
19 specific to different contaminants of concern (COCs) would be incorporated into the PHAs and
20 addressed. In his opinion, he said, these articles contained some good questions. He asked how
21 these would be connected to the documents and included in this effort, saying they did not
22 appear to be included in the Dr. Cibulas's report on PHA status.

23
24 Dr. Cibulas said he thought that this was a good question and also expressed his concern about
25 the timing. He explained that to the extent feasible, specific community concerns identified
26 during the course of specific PHAs would be included in those documents. If a problem arises
27 with timing, he said, the concerns would probably be added as an appendix to keep them
28 attached to a specific PHA. He noted that he shared Mr. Lewis's concern, and would work with
29 the subcommittee to ensure that community concerns were attached to relevant PHAs via
30 appropriate means, either during the process, as an appendix, or through another mechanism that
31 the group might determine is appropriate. He said that they would work with the subcommittee
32 on this issue and keep them updated on the progress.

ATSDR/NCEH Update

33
34
35
36
37 Dr. Cibulas provided an update regarding the search for a Director of ATSDR/National Center
38 for Environmental Health (NCEH). Recently, Mike Leavitt, the Secretary of Health and Human
39 Services (HHS), approved the reorganization of the Centers for Disease Control and Prevention
40 (CDC), which made Dr. Henry Falk the permanent Director of the Coordinating Center (for
41 Environmental Health, Injury Prevention, and Occupational Health). The center includes
42 NCEH/ATSDR and the National Center for Injury Prevention and Control, which Dr. Tom Sinks
43 has been the Acting Director of over the past 4 months. There are now five candidates, including
44 Dr. Sinks, and each candidate has met with staff and given seminars. To his knowledge, Dr.
45 Cibulas said, the selection of a permanent director was expected in early July.

Presentation/Discussion: Impacts on Oak Ridge Landowners of Off-Site Releases to the Environment from the Y-12 Plant and Associated Long-Term Stewardship Issues

Ms. Kaplan stated that she has served on the ORRHES since it was established in 2000. For about the past 4 years, Ms. Kaplan said, she has been preparing this report, which was completed in March 2005 and consists of about 300 pages. Ms. Kaplan created Institute for Technology, Social, and Policy Awareness, Inc. (ITSPA), a 501(c)3 nonprofit organization, in 1999. According to Ms. Kaplan, the organization's mission is "To combat community deterioration, worker displacement, and damage to the environment and human health due to the development and use of technologies and by funding cuts to technology programs." She created ITSPA because, in her opinion, these issues were too sensitive and did not seem appropriate to deal with through existing mechanisms, such as the ORR Local Oversight Committee (LOC) and the Oak Ridge Site Specific Advisory Board (ORSSAB).

Ms. Kaplan indicated that she has actually spent closer to 6 years on this project including the time she has spent writing the grant, talking with people, and working on other aspects. If time allowed, she said, she would be interested in discussing the history and decision making to put these things into context. According to Ms. Kaplan, this entailed a long public participation process. She said that people might ask why these questions were being brought up at this time, but indicated that this would become clearer as she went through her presentation. PowerPoint slides were used to present detailed of the report. Information from her presentation is provided below.

Project Support

Ms. Kaplan explained that ITSPA was funded by the Citizens' Monitoring and Technical Assessment Fund (MTA Fund) in Washington, D.C., which provides funding for projects throughout the country. All of the reports funded by the MTA Fund, including the ITSPA report, are available at <http://www.mtafund.org>. The grant is administered by RESOLVE, Inc., a mediation firm, and these reports are also available at <http://www.resolve.org>. ITSPA hired KapLine Enterprises, Inc. (Ms. Kaplan) to conduct the study and hired SENES Oak Ridge Center for Risk Analysis, Inc., to provide technical support via Gordon Blaylock. According to Ms. Kaplan, Dr. Blaylock has been involved in ORR-related issues since the 1970s. She said that she probably strayed somewhat from his views, but hoped she did not stray too much.

The MTA Fund, according to Ms. Kaplan, was established as a result of the 1998 settlement of a court case in which 39 nonprofit environmental and peace groups, including the National Resources Defense Council, sued the U.S. Department of Energy (DOE) Headquarters. She explained that the money was set up to fund community-based research, and her group was one of those that received this money.

1 **Project Intent**

2 Ms. Kaplan explained that the project was intended to address issues from the perspective of East
3 Fork Poplar Creek (EFPC) property owners instead of evaluating the issues only as a:

- 4
- 5 • Scientific project, such as the “State of the Creek Address.”
 - 6
 - 7 • Public health project, as ATSDR does.
 - 8
 - 9 • Public image and economic problem, as several Oak Ridge residents do.
 - 10

11 Ms. Kaplan provided examples of EFPC property owner difficulties and concerns that she said
12 she had identified:

- 13
- 14 • Difficulty selling along contaminated waterways.
 - 15
 - 16 • Loss of use of land by property owners while waiting for remediation to take place (i.e., for
17 15 years or more while discussions and remedial actions took place).
 - 18
 - 19 • Concern about being liable and co-liable with DOE for future impacts on others.
 - 20
 - 21 o To her knowledge, Ms. Kaplan said, general indemnity is not granted to property owners.
 - 22
 - 23 o According to Ms. Kaplan, two owners were granted indemnity via suing.
 - 24
 - 25 • Lost logging revenue due to contamination concerns.
 - 26
 - 27 o Ms. Kaplan related a story that, she said, triggered her to begin these efforts. Reportedly,
28 there was a property with pine beetle damage, but there was no road to enable a
29 contractor to cross the creek so that the trees could be cut down. She said that the owner
30 was reportedly told that if a temporary bridge was installed, everything would have to be
31 removed from the creek and the materials packaged as hazardous waste. According to
32 Ms. Kaplan, the trees died and the owner lost thousands of dollars.
 - 33
 - 34 • Concern about flood water re-depositing and re-suspending contamination from the
35 floodplain.
 - 36
 - 37 o Ms. Kaplan questioned whether this was an issue.
 - 38
 - 39 • Concern about permanence of mercuric sulfide form and potential health effects from methyl
40 form.
 - 41
 - 42 • Loss of tourism industry in downstream communities.
 - 43
 - 44 o According to Ms. Kaplan, resort owners sued DOE; DOE settled with them.
 - 45
 - 46 • Concern about future releases.

1
2 **ITSPA's Use of Anonymous Sources**

3 ITSPA had promised some property owners that their identities would be kept anonymous
4 because, according to Ms. Kaplan, they indicated that they were tired of being involved in this
5 issue and that they had paid a personal price. They also expressed concerns, said Ms. Kaplan,
6 that people were angry with them for speaking up; they indicated no desire to come to the
7 forefront as this issue was raised again during the PHA process and the ITSPA report. She said,
8 however, that the property owners expressed satisfaction that someone was telling the story from
9 their perspective.

10
11 **Purpose of Report**

12 Ms. Kaplan indicated that one of the report's purposes was to make sure that what has transpired
13 in the community is not forgotten. In her opinion, she said, this was a significant issue. The
14 document was also intended to serve as an all-inclusive reference. Though she was not able to
15 include all references used, Ms. Kaplan said, many references were provided in an appendix.

16
17 **Scope of Report**

- 18 • Evaluate effects of releases from the Y-12 Plant on EFPC property owners—particularly
19 focusing on mercury, which according to research had the largest impact.
20
21 • Discuss (briefly) uranium and other contaminants, including polychlorinated biphenyls
22 (PCBs).
23
24 • Understand impacts on EFPC property owners such as economic and day-to-day land
25 maintenance issues.
26
27 • Understand health effects on residents and members of the public, for example:
28
29 o Children who play in the floodplain or the creek.
30
31 o Residents and workers performing creek bank maintenance, laying cable, and other
32 activities.
33
34 ■ According to Ms. Kaplan, the city requires property owners to maintain the creek
35 bank.
36
37 ■ Ms. Kaplan said she found no recommendations on how to safeguard against
38 potential exposures; in her opinion, there should be such recommendations.
39
40 o People who eat fish from the creek and downstream waterways.
41
42 ■ Ms. Kaplan expressed her belief that this is the area where efforts are made, such as
43 postings along the creek regarding fish consumption.
44

- In her report, Ms. Kaplan details a study by Cadmus Group that, she stated, found that most anglers do not know of advisories or ignore them because of distrust for the government.

Goals of Report

Ms. Kaplan only detailed one of the report's goals, which she considered the most important issue to discuss: explore and explain the use of the 400 parts per million (ppm) cleanup limit in Oak Ridge. In her opinion, she said, she raises issues that need answers.

What Prompted ITSPA to Apply for an MTA Fund Grant

- Conversations with EFPC property owners discussing what she considered to be trials and tribulations.
- Personal curiosity about the long-term implications of:
 - o The 400 ppm cleanup level and the possible presence of mercury in soil and sediment at levels above 400 ppm due to the sampling method.
 - o The stability of the insoluble form of mercury in the creek and the effect of microbes and environmental conditions on its transformation.
 - o Plan for followup research, monitoring, and reporting.
 - Ms. Kaplan asked what actions had taken place in the last 10 years to test for mercury in soil.
 - o Her personal perception of confusion in the community about allowable uses of the creek, definition of "free use" (she said she believed this term was used in the Record of Decision), and the potential for health effects.

Key Concepts

Ms. Kaplan provided the following terms and definitions:

- *Solubility*: The amount of a solid (e.g., mercuric sulfide) that dissolves in water or another liquid.
 - o According to Ms. Kaplan, solubility is irrelevant in being transformed to another form.
- *Transformation of mercury forms*: Conversion of mercury (e.g., insoluble mercuric sulfide) by microbial action to another form or species of mercury (e.g., toxic methyl mercury).
- *Bioavailability*: The percent of a substance that is either swallowed, inhaled in lungs, or absorbed through skin and absorbed in blood.
 - o Ms. Kaplan stated that the key to toxicity was how much gets into the blood, noting that bioavailability differed from solubility.

- 1
- 2 • *Black zone*: Mercury in EFPC soil identified visually in a dark band.
- 3
- 4 o In 1995, according to Ms. Kaplan, a DOE official told a property owner that he could
- 5 estimate the mercury concentration within 200 to 300 ppm (based on looking at the band)
- 6 that would be revealed by lab work.
- 7
- 8 • *Form or species of mercury*: Refers to metallic mercury, inorganic salts (e.g., mercuric
- 9 sulfide and mercurous chloride), and organic mercury (includes methyl mercury).
- 10
- 11 o According to Ms. Kaplan, the public was told that the soil contained mercuric sulfide.
- 12
- 13 o The exact form or species of mercury in EFPC and the floodplain is unclear and
- 14 changing.
- 15
- 16 o Can change for both chemical reasons (e.g., acid rain) and biological reasons (e.g.,
- 17 microbes).
- 18
- 19 o Analytical test results for mercury forms are highly dependant on the type of analyses
- 20 used.
- 21

22 **Map of EFPC/Sewerline Beltway Project Problem Area**

23 Ms. Kaplan presented a map to the ORRHES. She noted that EFPC begins on Y-12 property,
24 swings down along Scarboro Road, travels down Illinois to the Oak Ridge Turnpike, zigzags
25 back and forth across the Turnpike, flows down to K-25 (where it hooks up with Poplar Creek),
26 and travels downstream to Watts Bar. She also used the map to point out landmark areas,
27 including Robertsville Junior High School and the AmVet Building.

28 **Major ITSPA Concerns**

29 Ms. Kaplan outlined concerns expressed by ITSPA in the report. Those concerns and related
30 information follow:

- 31
- 32
- 33 • Use of homogenized 16-inch core samples dilutes test result (total mercury), resulting in the
- 34 likelihood that areas with greater than 400 ppm are present.
- 35
- 36 o In her opinion, she said, this is a major issue.
- 37
- 38 o Over 3,000 samples were taken in 2001 Phase I sampling.
- 39
- 40 o Average mercury value was reported instead of maximum, which in her opinion was a
- 41 key point.
- 42
- 43 o To her knowledge, she said, only five samples were analyzed in 1-inch increments in the
- 44 *Vertical Integration Study* section of the Remedial Investigation (RI).
- 45

- 1 ■ Ms. Kaplan provided two graphs showing Bruner Site data from the Vertical
2 Integration Study Section of *EFPC—Sewer Line Beltway Remedial Investigation*
3 *Report*. On the graph from page 3-259 of the report, Ms. Kaplan indicated that the
4 first 4 inches contained little mercury and then a peak occurred from 4 to 5 inches
5 deep that almost reached 200 ppm. She stated that little mercury was detected from 5
6 to 12 inches deep; mercury was then measured at over 2,900 ppm from 14 to 15
7 inches in depth. According to Ms. Kaplan, when she averaged the mercury
8 concentrations from 16 inches up to the surface, the average would be 704 ppm. She
9 said she had conducted an analysis to convert this profile to 400 ppm, and the
10 maximum mercury level would be 1,659 ppm.
- 11
- 12 ■ Ms. Kaplan presented data from page 3-258 of the same report. She indicated that
13 from 6 to 12 inches, the maximum mercury concentration measured over 3,400 ppm.
14 According to Ms. Kaplan, these data provided an average reading of 1,024 ppm. She
15 noted that this included areas where cleanup had occurred. Based on her own
16 analysis, she said, if she had a sample reading 400 ppm that looked similar to this
17 one, the peak would be 1,336 ppm.
- 18
- 19 ● Lack of resident and public education.
- 20
- 21 ○ Neither the city nor the Tennessee Department of Environment and Conservation
22 (TDEC) Web sites discuss a) the potential for mercury at more than 400 ppm to be
23 present at properties near EFPC or b) the need to be alerted to black soil when digging in
24 the floodplain fringes.
- 25
- 26 ● No notification for potential buyers, via deeds, of potential mercury contamination on or near
27 affected or potentially affected properties.
- 28
- 29 ● Unrestricted access to the creek and floodplain.
- 30
- 31 ○ ITSPA found evidence of children playing in the creek at two low-income sites.
- 32
- 33 ■ Ms. Kaplan indicated that she and Dr. Blaylock found a submerged bicycle in the
34 creek behind Royce Circle and areas where children were wading in the water.
- 35
- 36 ○ Picnic areas were located in the floodplain.
- 37
- 38 ○ No signs were found in numerous locations (e.g., Southwood Subdivision, AmVets, and a
39 dentist office on Scarboro Road).
- 40
- 41 ■ According to Ms. Kaplan, there is no punishment for people who take signs.
- 42
- 43 ■ A sign near the bridge connecting to Robertsville Junior High School is not well
44 marked, in her opinion, and is located near a school, a church with a day care, and a
45 baseball field.
- 46

- 1 o Many signs were inadequately maintained—hidden from view by brush and foliage.
- 2
- 3 o Current public discussions, which occur annually at the “State of the Creek Address,”
- 4 focus only on scientific issues instead of what Ms. Kaplan considered to be practical,
- 5 day-to-day property owners’ issues.
- 6
- 7 ▪ Ms. Kaplan proposed that TDEC possibly evaluate this twice a year.
- 8
- 9 o Photographs were presented, including:
- 10
- 11 ▪ A picture taken at the EFPC location behind the AmVet building, showing a walking
- 12 trail along the creek and no signs in place except those saying that crawdads were
- 13 sampled there. This picture also showed the location of the submerged bicycle. Ms.
- 14 Kaplan expressed concern about this area.
- 15
- 16 ▪ A picture of Southwood Subdivision, where a child’s swing set was located in an area
- 17 considered by Ms. Kaplan to be extremely close to the creek. She questioned whether
- 18 children should be in this area.
- 19
- 20 ▪ A photograph of a picnic area behind the dentist’s office on Tulsa, which, in Ms.
- 21 Kaplan’s opinion, had sufficient signage.
- 22
- 23 ▪ A picture of a grilling and picnic area behind Carden Apartments; Ms. Kaplan was
- 24 not sure of the signs located here.
- 25
- 26 ▪ Two different signs along EFPC; one located at a low-income area (in Ms. Kaplan’s
- 27 opinion, a good sign) and one behind the dentist’s office on Tulsa (in her opinion, an
- 28 “alright” sign).
- 29
- 30 • Through a survey and personal face-to-face interviews, ITSPA determined that the public
- 31 still questions past and current health effects resulting from contaminants released from the
- 32 Y-12 Plant via EFPC and other pathways.
- 33
- 34 o According to Ms. Kaplan, the public was apparently most concerned about health impacts
- 35 on children, other recreational users of the EFPC and floodplain, and EFPC workers.
- 36
- 37 ▪ In her opinion, health issues exist for people who played in the creek as children and
- 38 for EFPC workers dating back to when releases were occurring and they were dealing
- 39 with the muck.
- 40
- 41 o ITSPA is primarily concerned about:
- 42
- 43 ▪ Past users during peak periods of contaminant releases (1953–1963).
- 44

- 1 ▪ Peak releases that coincided with times of greatest known flooding of EFPC (peak
2 flooding took place in September 1944, January 1954, April 1956, and December
3 1956).
- 4
- 5 ▪ Flooding that caused stratification of mercury/sample variation. According to Ms.
6 Kaplan, this is why there are zeros in some inch breakdowns of samples and higher
7 numbers in other areas.
- 8
- 9 • In her opinion, Ms. Kaplan said, the following issues have not been addressed as well as they
10 need to be: the status of research over the past 10 years, plans for long-term research in the
11 future, and plans for long-term stewardship.
- 12
- 13 o One significant issue, said Ms. Kaplan, is that the concentration and form of mercury in
14 soils need to be periodically verified.
- 15
- 16 ▪ ITSPA questioned whether any research been conducted on analyses for determining
17 forms of mercury in soil since cleanup occurred in 1996.
- 18
- 19 ▪ In Ms. Kaplan’s opinion, long-term stewardship is a major issue and cleanup is not a
20 final or permanent solution, as DOE indicated in 1995 and to ITSPA.
- 21
- 22 o ITSPA questioned the status of research on transformation, long-term stability, and
23 bioavailability of the insoluble mercury since the 1996 cleanup.
- 24
- 25 ▪ ITSPA inquired if the effects of microbes and other environmental factors on
26 transformation of mercury to the methyl form had been studied further.
- 27
- 28 o ITSPA questioned the status of research on health effects of mercury via skin absorption
29 since 1996.
- 30
- 31 • ITSPA asked what monitoring and reporting are being done.
- 32
- 33 o ITSPA asked why the 5-year review that should have been conducted in 2001 was not
34 performed and whether there were plans to conduct it.
- 35
- 36 o In addition to making the “State of the Creek Address,” ITSPA asked why TDEC did not
37 hold public meetings to discuss the results of annual monitoring activities and the results
38 of sampling during flooding events.
- 39
- 40 ▪ In her opinion, Ms. Kaplan said, she had not seen any of this type of information
41 discussed with the public.
- 42
- 43 • TDEC has no regulatory leverage in placing and maintaining signs along the creek, nor in
44 preventing use of the creek
- 45

- 1 o TDEC must obtain permission to place signs on private property; to her knowledge, Ms.
2 Kaplan said, property owners are free to remove these signs.
- 3
- 4 o To Ms. Kaplan's knowledge, there is no recourse if signs are removed.
- 5

6 **Report Highlights**

- 7 • Documents the history of the public's discovery of contaminant releases in the early to mid-
8 1980s (particularly mercury, but also uranium and other substances) and DOE's
9 acknowledgement and handling of the issue.
- 10
- 11 • Provides specific mercury test results for properties sampled in 1984–1985 as a result of the
12 Sewerline Beltway Project.
- 13
- 14 o The Sewerline Beltway Project was a city project that, according to Ms. Kaplan, resulted
15 in spreading mercury almost to the marina on the east end of town; high levels were
16 detected in some areas.
- 17
- 18 o The areas were cleaned up. Ms. Kaplan could not recall the cleanup limit at the time (it
19 started at 10 ppm and was raised to 400 ppm), but said she believed it was probably
20 cleaned to 10 ppm.
- 21
- 22 • Documents public health and related activities in Oak Ridge, including:
- 23
- 24 o Capturing some of the U.S. Environmental Protection Agency (EPA) headquarters'
25 concerns regarding the Y-12 PHA on uranium releases.
- 26
- 27 o Capturing ORRHES issues associated with that PHA.
- 28
- 29 • Provides an overview of issues impacting property owners, including:
- 30
- 31 o The definition of "free use."
- 32
- 33 o Concern about ongoing releases.
- 34
- 35 o Materials that are hazardous and areas with contamination.
- 36
- 37 o Conflicts of interest.
- 38
- 39 o
 - For example, the credibility of DOE-funded sampling, ATSDR PHAs, TDEC
40 oversight, and oversight by community groups.
 - 41
 - One reason why Ms. Kaplan set up a nonprofit organization was so it would not be
42 tied to DOE.
 - 43
- 44
- 45 o Data issues:
- 46

- 1 ▪ DOE’s use of classified status—according to Ms. Kaplan, DOE has taken information
2 in the public domain and reclassified it in the context of EFPC.
- 3
- 4 ▪ Data missing from reports—Ms. Kaplan stated that a property owner told her that
5 DOE had left out his/her samples from the report, which were the third highest
6 detections.
- 7
- 8 o General trust issues.
- 9
- 10 • Provides equations and variables for calculating exposure doses for mercury-contaminated
11 soil.
- 12
- 13 • Identifies nearly 300 Oak Ridge properties along EFPC and provides rough estimates (not
14 accounting for topography) of their distances from the creek via geographic information
15 systems (GIS) information.
- 16
- 17 • Documents appraisal values from public records, taxable values, and sales prices of
18 properties (where available).
- 19
- 20 • Discusses what the public has been told and what ITSPA determines that they should be told.
- 21
- 22 • Uses a narrated slideshow of the driving tour conducted to identify EFPC properties (can be
23 available to meeting attendees and will be compatible with their systems if they do not have
24 Windows XP).
- 25
- 26 • Provides a general overview of the areas potentially affected by the three main DOE facilities
27 in Oak Ridge.
- 28
- 29 • Discusses legal and ethical issues regarding real estate sales, particularly the need for public
30 disclosure.
- 31
- 32 o In her opinion, Ms. Kaplan said, this is a significant issue.
- 33
- 34 o Use of homogenized 16-inch core samples (as described in the Phase Ib Sampling Plan)
35 and its potential effects on cleanup of properties.
- 36
- 37 ▪ Ms. Kaplan expressed her belief that these levels of mercury over 400 ppm possibly
38 remained.
- 39
- 40 o Disclosure is required only if contamination is known to remain on a property.
- 41
- 42 ▪ According to TDEC, Ms. Kaplan said, because properties were cleaned up to 400
43 ppm, disclosure is not required.
- 44
- 45 ▪ In her opinion, however, properties were potentially not cleaned to 400 ppm and
46 higher levels could remain.

- 1
- 2 o Even if contamination remains on a property, a large number of exemptions exist based
- 3 on Tennessee law.
- 4
- 5 ■ For instance, disclosure is not required if a property is raw farmland.
- 6
- 7 ■ Disclosure is not required if a builder develops a property and provides a 1-year
- 8 warranty.
- 9
- 10 ■ To review the law, see
- 11 http://tennessee.gov/commerce/boards/trec/rulesandlaws.html/t66/t_66_ch_5.htm
- 12
- 13 • Serves as an all-inclusive reference document.
- 14
- 15 • As a research effort, consolidated much of the data, reports, maps, newspaper articles, and
- 16 other information
- 17
- 18 o Presents maps, such as one shown from the East Fork Poplar Creek Citizens Working
- 19 Group dated 1993 depicting areas with more than 200 ppm (in green) when 180 ppm was
- 20 the limit.
- 21

22 **Next in Oak Ridge**

- 23 • ATSDR Mercury PHA will be released in the near future.
- 24
- 25 • DOE's 5-year review.
- 26
- 27 o The deadline for the review of EFPC remediation passed in 2001, but no review has been
- 28 conducted to date
- 29
- 30 • Upcoming Federal Facilities Agreement (FFA) milestone in 2006.
- 31

32 **ITSPA Recommendations**

- 33 • Impose buyer notifications via amended real estate disclosure laws and institute deed
- 34 restrictions based on potential maximum mercury levels instead of average or homogenized
- 35 values.
- 36
- 37 • Amend Tennessee law to eliminate real estate disclosure exemptions.
- 38
- 39 • Develop property use and maintenance guidelines to help property owners.
- 40
- 41 • Place additional signs along the creek and perform better maintenance of existing signs.
- 42
- 43 • Develop resident and public education programs.
- 44
- 45 o Keep children out of these areas.
- 46

- 1 o Do not dig for potting soil in the creek, floodplain, or flood fringes.
- 2
- 3 • Create an EFPC resident notification system to deal with future spills so automatic calls will
- 4 be made to telephone numbers selected by residents.
- 5
- 6 • Explain EFPC monitoring and reporting.
- 7
- 8 o Discuss follow-up monitoring activities taking place, and whether these include
- 9 monitoring for soil or only fish.
- 10
- 11 o In addition to the “State of the Creek Address,” hold public meetings to discuss TDEC’s
- 12 annual reporting activities and sampling after flooding occurs.
- 13

14 Provide the public with a rationale for accepting homogenized sampling procedures
15 (EPA/TDEC).

- 16 o Explain why homogenized sampling saves money.
- 17
- 18 o According to Ms. Kaplan, when a core sample was pulled, a clear acetate area was
- 19 present; she asked why the samples were not dealt with on this basis.
- 20
- 21
- 22 • Use the upcoming opportunity in 2006 (provided by the FFA milestone) to:
- 23
- 24 o Evaluate the effectiveness of floodplain cleanup through soil sampling (if technically
- 25 feasible) rather than monitoring mercury levels in fish, which are rising unexpectedly
- 26 downstream of Y-12.
- 27
- 28 ▪ In Ms. Kaplan’s opinion, this is an unexpected result that was presented at the
- 29 “State of the Creek Address.”
- 30
- 31 ▪ Ms. Kaplan said that this needed to be evaluated because it indicates that material
- 32 is changing to the methyl form somewhere in the system.
- 33
- 34 o Expand the community core sampling from EFPC to other areas, such as Scarboro and
- 35 Woodland (air pathway).
- 36
- 37 ▪ Core samples are needed to understand past exposures (not shallow surface samples
- 38 as conducted in Scarboro).
- 39
- 40 o ATSDR’s recommendations are required before DOE can make decisions on additional
- 41 study and sampling.
- 42
- 43 ▪ In Ms. Kaplan’s opinion, the public was in the right place with ATSDR to get things
- 44 accomplished
- 45

- 1 o Ms. Kaplan said she had spoken with Dave Adler of DOE, who reportedly stated that
2 DOE would listen to individual requests—not only to agencies.
3
- 4 ▪ The community could collectively make a recommendation, even if it disagreed with
5 ATSDR’s recommendations.
6
- 7 ▪ In Ms. Kaplan’s opinion, Loudon County was a good example of what a community
8 could accomplish through a petition.
9

10 **Quotes from an ITSPA Interview**

11 Ms. Kaplan read the following quotes, all things that were said to her during a personal interview
12 with an EFPC property owner:
13

- 14 • “I felt that an end user, if they ever had a grievance, would not accept the 400 ppm because it
15 was an average and you don’t live with averages.”
16
- 17 • “If you’re going to build a sidewalk or a road, you don’t take 18 [16] inches of soil and
18 homogenize it. You dig down and say this is the level that I want my residential sidewalk
19 going to my house. The soil there is black ... you didn’t have to test ... you could cut a
20 profile and see the black layer and it was usually 3 to 5 inches in depth. If the average was
21 1,600 ppm, how high was it really in that black layer?”
22
- 23 • “However, the government agents said, ‘That’s the protocol, that’s the way it’s written, that’s
24 the way you take samples.’”
25

26 **Final Comments**

27 Ms. Kaplan provided the following opinions at the end of her main discussion:
28

- 29 • Institutional and community memories are short, so the community must do everything
30 possible to ensure that past mistakes are not repeated, such as:
31
- 32 o Spreading contaminated soil throughout town.
33
- 34 o Allowing the public to be exposed during releases without notifying people during
35 releases.
36
- 37 o Ignoring and hiding problems from the public rather than dealing with issues head on.
38
- 39 • Activities and decisions should be well thought out and documented in reports and meeting
40 transcripts/minutes.
41
- 42 o Ms. Kaplan referred to a transcript from a January 26, 1995, public meeting discussing
43 changing the cleanup level from 180 ppm to 400 ppm, which she considered to be
44 excellent.
45

- o She expressed her belief that another meeting was held on June 8, 1995, to discuss raising the limit to 400 ppm; however, she said, no transcripts could be located.
 - Ms. Kaplan said that she was told ATSDR held this meeting. She stated her opinion that ATSDR has let ORRHES down in terms of keeping minutes of their meetings.
 - In her opinion, she said, it was a waste of money if ATSDR was not documenting these activities—an issue they have been discussing since the beginning.
- Decisions must be understood well into the future, when problems or questions might arise.

EFPC History/Context

Ms. Kaplan referred to the following quote from the ITSPA report: “The thought of revisiting the 400 ppm cleanup limit for mercury upsets some local property owners and community members, particularly those who were instrumental in getting the level raised from 10 ppm to 50 to 180 and, finally, to 400 ppm.” To her knowledge, Ms. Kaplan said, the cleanup level started at 10 ppm, noting that the Civic Center was cleaned up to this level. She expressed her belief that some areas were also cleaned up to 50 ppm, but not to 180 ppm. She indicated that some people had proposed higher limits. In her report, she stated that 1,200 ppm was proposed, but said that (according to the transcripts she reviewed) someone had actually proposed 2,600 ppm.

In her opinion, she said, the following were major events in EFPC history:

- A public meeting was held January 26, 1995, to discuss the Proposed Plan (Alternative 3), which set the cleanup level at 180 ppm.
- After this meeting, DOE raised the cleanup level from 180 ppm to 400 ppm.
- Property owners (she talked to) began hearing rumors of the pending change, but were not officially told about it until a meeting was held on June 8, 1995, to discuss the change.
 - o Ms. Kaplan said she believed that DOE did not initially plan to hold, or was slow in holding, a meeting to discuss this decision.
 - o According to Ms. Kaplan, DOE claims that ATSDR held this public meeting; she asked for a copy of the transcript if ATSDR had it because it could not be located via DOE.
 - o She asked whether the meeting was held as a result of public outcry.
- Use of homogenized 16-inch core samples in 1991 also became a point of contention, according to Ms. Kaplan, between DOE and property owners around the June 1995 timeframe.
 - o Letters to public officials had been obtained by ITSPA.

- 1 o On June 26, 1995, a property owner reportedly called John Lea (Jacobs Engineering's
2 EFPC Task Manager) requesting a copy of the sampling plan, but he did not have it.
3
- 4 o David Page (the DOE Team Leader of the EFPC Floodplain Remediation Project)
5 reportedly told a property owner that sampling procedure followed a protocol he wrote
6 and submitted to EPA, which EPA approved.
7
- 8 o Ms. Kaplan and Dr. Blaylock searched for this document (published June 1992 and
9 reportedly released July 1995), but it was not in the public record for several years as far
10 as she could determine.
11

12 The only procedure for homogenized sampling found before the release of ITSPA
13 report was in a paragraph from a DOE fact sheet dated summer 1991.
14

15 While Ms. Kaplan was preparing for this presentation, DOE reading room staff
16 finally found a Sampling Plan (received June 26, 2005); title had used a Roman
17 numeral I instead of an Arabic number 1 that was being searched for): *Phase Ib*
18 *Sampling and Analysis Plan for Soil, Sediment, and Water. June 2002.*
19

20 Ms. Kaplan cited several quotes made during the EFPC public meeting held on January 26,
21 1995:
22

- 23 • Mr. Brooks: "... the 10 ppm, which was the initial estimate, the very earliest estimate, didn't
24 change for the soil action level. And I asked myself, 'How can I go from a very toxic
25 compound, readily absorbed [the chloride form] to one which is one of the most insoluble
26 compounds known [the sulfide form] without changing the risk level?' I waited. Patiently at
27 first, then impatiently, and then in 1994 I started to look into it for myself ..."
28
- 29 • Mr. Brooks: "On July 21, 1994, we [Mr. Brooks and Mr. Maienschein] had a meeting with
30 EPA, in which ... I learned why I could not get their results. Fred [Maienschein] and I [Mr.
31 Brooks] presented our technical point of view; EPA, other members of the project, said, 'We
32 do not take exceptions to your technical analysis, but the CERCLA [Comprehensive
33 Environmental Response, Compensation, and Liability Act] procedure is a political
34 procedure established by Congress in legislation which requires us to produce unquestionable
35 safe risk assessment, irrespective of cost.'"
36
- 37 • Mr. Brooks: "... I'm here to say that, in my professional opinion, the EPA risk assessment
38 numbers are wrong with a conservative factor of approximately 500,000 to a million, and
39 they are wasting our money ..."
40
- 41 • Mr. Brooks: "I'd like to recommend that the RI goal be changed to 1,200 ppm, except in
42 those small areas showing exceptionally high bioavailability."
43
- 44 • Elmer Akin (former head of the EPA Office of Health Assessment and former ORRHES
45 liaison member, now retired): "In one sense, this is extremely refreshing. I have never been
46 to a public meeting where this side of the issue has been raised."

- 1
- 2 • Dr. Akin: “There’s not enough evidence to determine the bioavailability of mercuric chloride
3 and mercuric sulfide in man.”
- 4
- 5 • Dr. Akin: “The number [180 ppm] is going to be one of the highest mercury numbers we’ve
6 ever agreed with as it is. The ecologists are kind of going nuts about that number as being
7 high.”
- 8
- 9 • Dr. Akin: “If this number goes higher than what it is, I think there’s very few ecologists who
10 are going to agree it’s protective of the ecosystem.”
- 11
- 12 • Dr. Akin: “... there are laws on the book that say the agency is responsible for protecting the
13 ecosystem ...”
- 14
- 15 • Dr. Akin: “... there is some evidence that there’s methyl mercury in this system. It’s not all
16 mercuric sulfide ... Of course it’s 99-something percent that form, but that doesn’t mean it
17 can’t be methylated; and there is data that some species have methyl mercury in them derived
18 somewhere within this floodplain.”
- 19
- 20 • Dr. Akin: “Now, is it from the water? From the soil? Those questions can’t be clearly
21 answered. But to make the assumption that all this mercury is forevermore non-bioavailable,
22 100 percent, is quite a stretch; and that is not a very protective position for this agency to take
23 if that’s the way we’re headed here.”
- 24
- 25 • Wayne Tolbert (Vice President and Senior Project Manager at SAIC): DOE’s intention in the
26 Proposed Plan site-wide alternative three [180 ppm] is “unrestricted land use, rezoning ...
27 and a final solution.” “There is a plan to have basically a five-year monitoring program after
28 the remediation occurs.” “There would be an examination of those areas to make sure that the
29 remediation that was taking place was, in fact, being effective.”
- 30
- 31 o Ms. Kaplan said she was not sure if this 5-year review had taken place, and said that this
32 was one of her concerns.
- 33
- 34 o She asked whether TDEC determined that its annual activities took care of this review.
- 35
- 36 • Robert Peele (Oak Ridge resident): “... the bioavailability is approximately ... less than 10%
37 rather than 30% ... There were a few samples found where the major solubility [Ms. Kaplan
38 wondered whether this should have said bioavailability] was greater than 10%. There weren’t
39 very many ... We all know the mercury out in the floodplain won’t suddenly become soluble
40 tomorrow.”
- 41
- 42 • Wayne Clark (EFPC landowner): “... if in the future I seek to develop that land and then I’m
43 taken to court by a person making a claim, I feel that DOE should assume the legal
44 responsibility and hold me harmless. And that has never been addressed or dealt with, and I
45 continue to be troubled with it. The other problem that I worry about is that if we make it a

1 180 ppm or 600 ppm or a thousand, and then we have a new EPA and a new point of view in
2 the future and we heighten things up, who is the liable person at that time?"

- 3
- 4 • In response to Mr. Clark, Bob Sleeman (DOE) said: "I'm not aware of the direct individual
5 concerns in terms of liability. What I understand of CERLA, DOE, as the original generator,
6 will continue to have liability for the cleanup if the standards are low in the future."
7
 - 8 o In her opinion, Ms. Kaplan said, this is a very important issue. She expressed her concern
9 at the fact that Mr. Sleeman did not answer Mr. Clark's question.
10
 - 11 o Ms. Kaplan wondered what would happen if landowners were sued for health issues;
12 based on Mr. Sleeman's response, she said, people have to defend themselves.
13
 - 14 • Ellen Smith (resident): "Depending on the individual landowner's plans and needs, I believe
15 that if the DOE and the other agencies feel protection is necessary, they should consider
16 purchasing affected parcels at a very generous fair market value or purchasing deed
17 restrictions on future uses and land transfers."
18
 - 19 • Ms. Kaplan referred to a quote made by resident Elizabeth Peele, who suggested sending in
20 people with shovels to dig up the dark parts of the soil based on sampling results, since the
21 black zone was visible. She was not sure how feasible this was, but she said it was an
22 interesting idea nonetheless.
23
 - 24 • EFPC property owner (extracted from personal notes): "When talking about health risks
25 every agency and expert qualifies their comments to cover only short-term risks. No one is
26 yet able to guarantee anything regarding long-term health risks."
27
 - 28 o Ms. Kaplan indicated that this statement was made, but that she was not sure how true it
29 was.
30
 - 31 o Herman Cember said that one cannot guarantee any risk.
32

33 Ms. Kaplan also referenced quotes made after, but in reference to, the January 26, 1995, meeting:
34

- 35 • One EFPC property owner wrote the following regarding audience participation at the
36 meeting in a memo to Al Robinson of the Tennessee Fish and Wildlife Agency: "The first
37 two speakers, of the 21 persons who spoke, took the floor 14 different times and occupied
38 some 17½ pages of the transcript of the meeting."
39
 - 40 o According to Ms. Kaplan, people expressed upset feelings because they had not been
41 informed, even though they had been participating in the EFPC work group, and asked
42 how this could happen.
43
 - 44 o The quote referred to a list summarizing the audience participation in the January
45 meeting, which Ms. Kaplan presented to the ORRHES.
46

1 Ms. Kaplan referred to one of the quotes presented in the ITSPA report that Mr. Brooks had
2 expressed concern about during the meeting today, which were taken from a letter Mr. Brooks
3 wrote to the editor of *The Oak Ridger* on April 19, 1995, in which he thanked David Page of
4 DOE for his assistance. She read the following personal notes from a property owner regarding
5 Mr. Brooks' comments:

- 6
- 7 • "To me [this was] an extraordinary disclosure: DOE coaching a person or persons to appear
8 at a formal public meeting to pressure EPA and the State of Tennessee to accept higher
9 cleanup limits, when such higher limits accrue direct benefits to DOE."
 - 10
 - 11 • "This was part of the picture that helped reduce the area along EFPC to be remediated. This
12 has to do with getting a higher ppm limit for cleanup. The other part ... final Ib sampling
13 [approximately 3,000 samples] being determined as 0- to 16-inch homogenized soil cores
14 when in reality the mercury was deposited in strata measuring from 3 inches up to 11 inches
15 depending on each particular core. Both serve to reduce the need for cleanup."
 - 16

17 Ms. Kaplan read quotes from an interview ITSPA had with an EFPC property owner who sued
18 DOE. Ms. Kaplan indicated that the property owners had expressed significant concern because
19 they were not able to use their land for over a decade.

- 20
- 21 • "Real early in the discussions of the mercury and I think actually before DOE openly
22 confessed [range 1983], some parties alluded to another property owner and me that we
23 could not, should not, use our property because we would be co-liable with DOE."
 - 24
 - 25 • "We then started having occasional discussions with various people in the AEC [Atomic
26 Energy Commission]/DOE/ERDA [Energy Research and Development Administration]
27 operation as to when they were willing to tell us what this was all about ... what was this
28 thing called mercury ... how bad was it ... Repeatedly we were told it was premature. We
29 went from engineers ... to trying to talk to the attorneys."
 - 30
 - 31 • "When we couldn't make comfortable conversation ... we tried to go to the senior attorneys
32 that were here ... They pretty well roughed us up verbally—brow-beating us—telling us it
33 was premature and don't bother them. They succeeded in delaying all this until we suddenly
34 learned about and realized that we were beyond the legal date that you could file a court
35 proceeding."
 - 36
 - 37 • "We believe that they intentionally did that. I do not consider that they were honorable,
38 forthright citizens in their behavior ... I think they were, frankly, devious. And I felt that
39 when they had exceeded that statute of limitations, they almost changed their behavior and
40 talked to us with more sincerity, feeling that they were safer. We decided that we were going
41 to do something about it."
 - 42

43 Ms. Kaplan provided the following notes from an EFPC property owner, which in her opinion
44 showed an example of DOE reclassifying data:

- 1 • “On May 8, 1995, a property owner called a DOE official he had been working with to
2 inquire about the type of soil samples taken in 1985 on his land.”
3
4 • “However, the official informed him that he no longer had his files on the 1984/85 soil
5 sampling as other DOE personnel had recently picked up his files and told him they were
6 now classified.”
7
8 • “... the information had been open and available from 1985 until then, a decade later.”
9

10 Ms. Kaplan presented the following personal notes from an EFPC property owner, which in her
11 opinion showed an example of missing data:
12

- 13 • “On May 9, 1995, an EFPC property owner pointed out to DOE that one transect of soil
14 samples, six cores, had been omitted on Map 6, sheet 2 or 3, of the SAIC report dated April
15 13, 1993 (*EFPC—Sewer Line Beltway Remedial Investigation Report, Volume V, Maps 1–7*)
16 containing ORAU [Oak Ridge Associated Universities] Historical Data (Rapid Scan Survey,
17 page 6).”
18
19 • “This transect contained soil sample 85-0487, which showed 1,600 ppm on parcel 563.”
20
21 • “DOE indicated to the property owner that this was probably an oversight.”
22
23 • Ms. Kaplan indicated that this site had the third highest level of contamination, and the data
24 had been left out.
25

26 Ms. Kaplan provided quotes from the a workshop held by the National Center for Environmental
27 Decision-Making Research (NCEDR) in August 1996 regarding the final assessment of the
28 EFPC public participation process.
29

- 30 • “There was some sense the issue of how well the Remedial Goal Objective [i.e., 400 ppm]
31 addresses ecological risk might arise again in the future.”
32
33 • “The lack of definitive data can cause decisions to require revisiting in the future, potentially
34 limiting their durability.”
35
36 • “Perhaps the broader message is that complex environmental problems, such as those
37 pertaining to long-term management of toxic wastes, often resist simple or permanent
38 solutions, requiring instead an ongoing, flexible, and incremental approach.”
39
40 • “Revisiting decisions in the future, while time-consuming and sometimes costly, may be
41 essential for such complex problems.”
42

43 Ms. Kaplan concluded by saying that these issues may be expensive to deal with, but that there
44 are remaining questions that need to be dealt with and answered.
45

1 **Discussion**

2 Dr. Cember asked if Ms. Kaplan was referring to the 400 ppm cleanup limit for mercury. She
3 answered that this was correct.

4
5 After providing a definition on bioavailability, Charles Washington asked what form of mercury
6 Ms. Kaplan was referring to. She said it would depend on what forms were in the soil. Dr.
7 Davidson explained that these were only general definitions.

8
9 Mr. Washington asked whether Ms. Kaplan believed that the DOE official could estimate the
10 mercury concentration based on seeing the black band. Ms. Kaplan indicated that the comment
11 was not made to her—it was in the newspaper. She explained that she was providing issues heard
12 by other people, which was why she was raising the issue.

13
14 Regarding the Bruner Site data, Don Creasia asked whether anyone had looked at all of the peaks
15 to determine if they represented different forms of mercury. Ms. Kaplan was not sure, but Dr.
16 Craig said this had not been done. As she understood it, Ms. Kaplan said, these types of analyses
17 are expensive and controversial as to the appropriate methods to use. She indicated that similar to
18 ATSDR, these sampling methods assumed that the mercury was the more toxic form of mercuric
19 chloride.

20
21 Mr. Lewis asked if the Bruner Site data stratification had been done before or after the major
22 sampling occurred; Ms. Kaplan said it had been done before.

23
24 Referring to the photographs of posted signs, Dr. Cember asked whether Ms. Kaplan had
25 analyzed fish, as the sign indicated that fish were not safe for human consumption. Ms. Kaplan
26 indicated that this is discussed in the ITSPA report, adding that information presented at the
27 “State of the Creek Address” delved into fish and biota data.

28
29 Ms. Kaplan provided a handout, which she stated included comments from EPA headquarters in
30 red printing; she stated that these were the Office of Radiation and Indoor Air’s (ORIA)
31 responses to her questions for the June 2004 meeting. Ms. Sonnenburg asked for clarification
32 about the handout. Ms. Kaplan said that it contained the responses she received from EPA
33 headquarters in response to her questions. She said that the handout detailed comments made by
34 the EPA representatives who came to speak to ORRHES in June 2004. Ms. Kaplan stated that
35 she had assumed these would be made available, and that she continued to ask for them to be
36 made available from EPA. In addition, Ms. Kaplan said, she provided EPA Region IV’s response
37 to her report, which was sent to her by Jon Richards and discussed concerns about her including
38 the EPA responses (provided in the handout) in her report.

39
40 Mr. Richards clarified that Ms. Kaplan had a draft copy of working responses to her questions,
41 provided to her by Lowell Ralston on April 30, 2004. He explained that he, Jeff Crane, Bonnie
42 Gitlin, and Mr. Ralston had worked together on these responses—the responses Ms. Kaplan
43 received after the meeting as a final document in December. Ms. Kaplan said that their responses
44 are in italics in the document. Mr. Richards reiterated that the responses constituted a draft,
45 working document. He indicated that all of the actual technical content seen in red was provided
46 in the slides that everyone received during and after the meeting. He said he was concerned that

1 Ms. Kaplan was mischaracterizing this letter: he said it was not EPA Region IV responses in
2 black, but EPA ORIA and Region IV responses in black. According to Mr. Richards, everyone
3 received a package in August and a final copy in December of the official responses from Region
4 IV and ORIA together. According to Mr. Richards, these were not two separate responses as was
5 being suggested by saying that Region IV comments were in black and ORIA comments were in
6 red. He said that this was not true. Ms. Kaplan apologized if she was confused, adding that the
7 technical material was in response to her questions.

8
9 Mr. Lewis recalled when Mr. Ralston attended their meeting; in his opinion, he made some
10 interesting comments. Ms. Kaplan said that Mr. Ralston did not give a talk—she said she
11 believed that he had not been allowed to respond to her questions and that Ms. Gitlin gave a talk.
12 She said that the subcommittee had requested that Mr. Ralston talk, but he was not permitted to
13 do so. Mr. Richards said that Ms. Kaplan’s statements were incorrect; Ms. Kaplan replied that
14 they were not there to argue. According to Mr. Richards, Ms. Kaplan was making false
15 statements. She repeated that Mr. Ralston had not been allowed to stand up and give a talk. Mr.
16 Richards continued that this was not true, stating that Mr. Ralston had stood up and talked. Ms.
17 Kaplan asked if Mr. Ralston had spoken in response to her questions. Mr. Richards said that Mr.
18 Ralston had not, but that he had gone through some of his slides and provided each slide to
19 everyone. According to Ms. Kaplan, she asked Ms. Gitlin for permission to include this
20 information in her report, including the responses from Mr. Ralston to the questions she had
21 submitted to EPA. In her opinion, she said, she took the appropriate steps to include this material
22 in the document.

23
24 In his opinion, Mr. Lewis said, the sampling technique seemed to be the crux of the issue. He
25 questioned whether core samples instead of homogenized samples should have been used. Dr.
26 Cember expressed his belief that the question was really whether studies on populations or
27 animals show hazards associated with peak or average concentrations of contaminants. Dr.
28 Taylor explained that he was continuing to evaluate these issues, and his findings would be
29 presented in the mercury PHA. Ms. Kaplan indicated that she was raising these questions and
30 concerns because she did not have the answers, expressing her belief that ATSDR will need to
31 address these issues.

32
33 Dr. Evans explained that exposure limits in soil are always based on average concentrations. He
34 indicated that exposures are to average concentrations because they are dealing with exposures
35 that may occur over lifetimes. He stated that soil, as a medium, is formed of discrete particles.
36 Therefore, any soil sample is a composite, and the question is how big of a composite was taken.
37 In this particular case, he said, the composite was large enough to cover the entire area.
38 According to Dr. Evans, it is appropriate to use this sampling technique and 400 ppm as the level
39 for an average exposure. He expressed his belief that it is appropriate to compare an average to
40 an average. Ms. Kaplan said she could point out an exposure that is not an average, such as her
41 children who dig. Dr. Evans explained that this was the point of using an average—there will
42 always be values below and above the average. The point, however, is that exposures occur over
43 many years and occur to the average. According to Dr. Evans, the average is the factor to
44 consider when referring to exposure and in terms of environmental assessment.

45 L.C. Manley asked how much of a contaminant is diffused following deposition where a
46 contaminant could move deeper years later. Dr. Evans answered that one reason to conduct

1 whole core sampling is because of material deposited during flood events. Following Mr.
2 Manley's question about how to get peak values, Dr. Evans replied that exposure limits are based
3 on average values—not peak values.

4
5 Dr. Davidson said that she would have more concerns if she saw very high concentrations at the
6 top rather than low values moving to higher values as the depth increases. She said she believed
7 that you cannot be exposed to high concentrations below the surface unless you go through the
8 upper layers. Ms. Kaplan responded that this meant that the sample becomes homogenized by
9 digging unless there is a band and a child is digging down, but stated that one cannot assume that
10 this would always be homogenized. Dr. Davidson indicated that what you would bring up would
11 include everything from the top down to the bottom as well, adding that there would be no doubt
12 that you would be exposed to high concentrations if there were high detections at the top.

13
14 Dr. Blaylock explained that EPA's usual methodology considers the average for cleanup. In his
15 opinion, however, EPA is typically concerned about other types of contamination. He said that
16 the type of contamination caused by floods is unusual because a high concentration is deposited,
17 which is filled in, and then another high concentration is deposited. To his knowledge, he said,
18 DOE and EPA agreed that EPA's usual methodology was the one to use; he noted, though, that it
19 was difficult to find additional information on this methodology. Ms. Kaplan indicated she had
20 received the sampling report that weekend.

21
22 Mr. Hanley said that he had the sampling and analysis plan that was developed. He said that
23 DOE (working with EPA) prepared the plan; EPA Region IV and EPA headquarters, as well as
24 EPA's Las Vegas Laboratory, were involved. He added that EPA and TDEC reviewed and
25 approved the plan. Mr. Hanley explained that EPA uses averages in its risk assessment, and the
26 purpose of using core samples comes from risk assessment. He added that this was an issue that
27 would be clarified, addressed, and evaluated more closely in the PHA. To her knowledge, Ms.
28 Kaplan said, only about five of 3,000 samples were evaluated in 1-inch increments. She said it
29 was important to understand that: in her opinion, they could not have an accurate idea of the
30 contamination by only looking at five samples.

31
32 Mr. Washington said it was important to realize what took place at Love Canal, New York,
33 where samples were not collected in this way (instead, core samples were used). Analysts saw
34 peaks of high amounts at Love Canal, he said, and in his opinion this indicated that an unusual
35 oxidation of mercury was occurring. As a chemist, he said, one would suspect that depending on
36 the acidity of the soil and other factors, other layers would be expected to have mercury also. He
37 added that this could change over periods of time depending on what is in the soil.

38
39 In her opinion, Peggy Adkins said, this was the most practical and helpful presentation that she
40 had seen in a long time. She expressed her appreciation to Ms. Kaplan for bringing these issues
41 to the forefront. She expressed her belief that anyone who has planted has been dealing in the
42 area of highest concentration. (Ms. Kaplan interjected "potential" highest concentration.)
43 Ms. Sonnenburg asked whether the contamination on the map went further downstream. Ms.
44 Kaplan said that the contamination goes down to Watts Bar, but only EFPC was sampled for this
45 particular study. Ms. Sonnenburg asked if the Watts Bar Reservoir had been studied. According
46 to Ms. Sonnenburg, there is a great deal of flooding in the lower areas that goes into their yards

1 and about 6 feet over their dock. Mr. Richards answered that significant levels of cesium and
2 mercury have been detected in the deep channels in sediment. One of his previous project
3 managers was looking over Watts Bar when an evaluation was conducted to assess growing
4 gardens with deep channel sediment containing mercury and cesium. He said the report contains
5 the detailed information about the sampling conducted in the area. In her opinion, Ms. Kaplan
6 said, some of the recommendations written by ORSSAB were interesting to her and she included
7 them in her report. She explained her interpretation that samples were pulled from along the
8 swimming area in Kingston and averaged, and asked if this was correct. Mr. Richards was not
9 sure, but said this would be in DOE's report on the Watts Bar Reservoir, adding that the report
10 was one of the FFA commitments. Janice Stokes expressed her belief that EPA was also
11 associated with the report. Mr. Richards replied that DOE prepares the report, and EPA and
12 TDEC review it.

13
14 Dr. Blaylock explained that there are several detailed reports on mercury and cesium 137, and on
15 radionuclides traveling from White Oak Creek to the Clinch River to Watts Bar Reservoir.
16 According to Dr. Blaylock, this has been well documented, particularly regarding radionuclides
17 taken by core segmented samples. He said that mercury goes further than Watts Bar, noting that
18 it is diluted as it goes downstream. He added that cesium and mercury are present in the deep
19 sediments, and that the same is true for the Clinch River. He said there is some on the banks, but
20 that it is usually less than 17 picocuries. Ms. Sonnenburg asked if she should be concerned about
21 flooding where she lives, over the Meigs County border. Dr. Blaylock expressed that he
22 personally would not be concerned.

23
24 Dr. Cember said he understood the exposure pathway through fish and the bioconcentration and
25 biotransformation from inorganic to methyl mercury, which was much more toxic than inorganic
26 mercury. He questioned, however, the human exposure pathway for mercury that is 8 inches
27 below ground. Ms. Kaplan replied that she has sons who dig. Dr. Cember asked how the mercury
28 gets into their bodies. Ms. Kaplan explained that they could get it on their hands, and also
29 indicated one of her concerns was associated with people who eat dirt (pica behavior). She noted
30 that such people might not constitute a large group, and questioned whether this was an issue to
31 be concerned about.

32
33 When evaluating the cleanup level (180 ppm originally and then 400 ppm) in the floodplain soil
34 for inorganic mercury, Mr. Hanley explained, ATSDR used a residential scenario. In addition,
35 the most sensitive population (young children), the most highly soluble form (mercuric chloride),
36 and the most probable exposure routes (hand-to-mouth ingestion and playing in dirt) were
37 considered and exposure was assumed to occur every day to 400 ppm. Ms. Kaplan noted that
38 ATSDR did not use 1,600 ppm. Mr. Hanley said that ATSDR concluded that 400 ppm of
39 mercury in the EFPC floodplain was protective of public health. Dr. Cember stated that the
40 evaluation considered exposure day after day to 400 ppm, indicating that sometimes exposure
41 could be to 1,600 ppm and sometimes less, with an average of 400 ppm. Mr. Hanley noted that
42 this was correct.

43
44 Ms. Stokes said that she herself is a classic example of a Watts Bar Lake resident of Kingston.
45 According to Ms. Stokes, her legs broke by themselves last March: she had stepped into a hole,
46 and when she removed her legs from the hole, a substance resembling tarnished silver remained

1 on her legs for more than a week that could not be washed off. She stated that many experts have
2 told her that this was probably mercury. She expressed her belief that it is also in the Clinch
3 River, within the water intake for the City of Kingston. She said that she lived on the lake and
4 had a dock at Southwest Point, at the confluence of the Clinch and Tennessee Rivers. According
5 to Ms. Stokes, unless you owned lakefront property, the only area for swimming in the 1950s
6 and 1960s was at the City Park.

7
8 In her opinion, she said, there have been many deaths that cannot be attributed to anything,
9 including her 16-year-old neighbor who died of a heart attack and three neighbors having kidney
10 cancer. She expressed her concern that they continue to study the contaminants when
11 contaminants are known to cause effects, and questioned why they do not study the people. In
12 her opinion, this was ridiculous—it had gone on for 12 years with ATSDR and even before that.
13 She stated that the chemicals have not killed her yet, but expressed her belief that they have
14 certainly disabled her. Ms. Stokes expressed her belief that if the agency could not see the health
15 effects she and other people have and the health effects caused by these elements, then ATSDR
16 was wasting its time and taxpayers' money and she did not appreciate it. She stated that she was
17 here after 12/13 years asking them again to study the people.

18
19 In her opinion, Ms. Stokes said, Ms. Kaplan had done a wonderful service for this board. She
20 expressed her belief that some honorable and caring people serve on ORRHES, but that some
21 other members are serving their own interests. She expressed her opinion that the subcommittee
22 consisted of people with conflicts of interest in real estate, as DOE contractors, and via other
23 connections. According to Ms. Stokes, she and other people had raised the same issues as Ms.
24 Kaplan 10 years ago during the EFPC studies. She said that these issues continue to arise, and in
25 her opinion they will not go away because the contamination remains. She said that her
26 generation learned these lessons the hard way and so will the next generation. She expressed her
27 belief that the contamination will stay because mercury sinks and evaporates into a gas at 72°.
28 She said she would guarantee that there has been some volatilization of mercury, using an
29 example to express her belief that volatilization would occur with the low water level in EFPC
30 on a 100° day in mid-August.

31
32 She expressed her belief that people in power gather that the public can be deceived and blown
33 off by intellectual jargon, but mercury and other chemicals are in EFPC. According to Ms.
34 Stokes, a board member had a 2-year-old child enrolled in a day care near the creek, and the
35 child played next to the creek and had seizures. She asked to be looked in the eye and told that
36 they cared, expressing her belief that they did not. In her opinion, she said, they needed to take
37 action and stop wasting nearly 2 million dollars a year because it was preposterous. She thanked
38 Ms. Kaplan for what she had done for the community, expressing her belief that Ms. Kaplan was
39 also a victim. In her opinion, she said, others look at those who are concerned as though they can
40 be blown off, but they cannot be.

41
42 Mr. Lewis expressed his viewpoint that this amounted to a discussion about the public and
43 protecting public health versus a child playing in the dirt, a landowner, and those who excavate
44 land. Based on his observations, he said, this is not an issue from the general public perspective,
45 but an issue regarding whether there is a concern for an individual landowner living in the
46 floodplain. In his opinion, he said, there is probably no issue if everything stays the same.

1 However, the question remains on addressing these issues for an individual, such as someone
2 who has a child or wants to sell property and notify people of what could be there. He said that
3 he continues to hear that this is about the public, but repeated that this appeared to be an
4 individual issue.

5
6 In terms of public disclosure of real estate, Ms. Kaplan replied, a person may buy a piece of
7 property that has a 1-year warranty from a developer. When that person becomes aware of the
8 problem, according to Ms. Kaplan, the owner could be responsible to inform a buyer even
9 though the owner was never informed. She questioned who was educating people on these
10 issues. She said she had spoken with a lawyer who said that this was a possibility even if you
11 were not informed. Ms. Kaplan indicated that the tri-party agreement said that the area was
12 cleaned up because it was remediated to 400 ppm on average. She said, however, that she could
13 not alleviate her concern that 1,600 ppm or 3,000 ppm, even if it is 6 to 8 inches down, is still an
14 issue.

15
16 Ms. Smith said that she had researched this history and looked at the data on mercury levels in
17 floodplain soils. In addition, she said, treatability studies were conducted as part of the feasibility
18 study on this subject. In her opinion, she said, the findings were quite interesting. She stated that
19 a number of studies were conducted to investigate what it would take for mercury to come out of
20 soil. She referred to Ms. Stokes' comment that mercury would volatilize at a low value; according
21 to Ms. Smith, soil was roasted to incredibly high temperatures and mercury did not come out
22 until very high temperatures were reached. Also, she said, plants were grown in mercury-
23 contaminated soil so that the vegetables and leaves could be analyzed for mercury, but the
24 practical evaluation of the availability of mercury in that soil using various methods of extraction
25 indicated that mercury was not coming out—it was not available. To her, the findings suggested
26 that plants were not being exposed to mercury and it was not coming out of the air. In her
27 opinion, Ms. Stokes' fears were similar to those that many of them had when they first heard
28 about the mercury here. She expressed her belief, however, that some people who had these fears
29 stopped being afraid after these investigations occurred because the information indicated they
30 were not being exposed to what they had thought they were.

31
32 Ms. Stokes expressed her belief that there were mercury rings and mercury in the trees. She
33 asked whether Ms. Kaplan's report discusses the update on leaves and trees causing evaporation.
34 Ms. Kaplan said that this was not included. Ms. Stokes indicated that information on this topic
35 had been presented to the ORSSAB and could be found in the minutes.

36
37 Ms. Kaplan stated that her primary concern is that levels of mercury are rising in fish, which in
38 her opinion indicated that the mercury was being transformed somewhere. Ms. Smith replied that
39 her information was hearsay, but she was told that fish were being exposed to what was being
40 released into the water from the Y-12 Plant—not to mercury in soil. She indicated that the plant
41 still releases certain amounts of mercury in very small concentrations in water. Fish are exposed
42 to water over time; according to Ms. Smith, more natural organic matter in water helps keep the
43 mercury in the solution in a form that is available to fish. Thus, she said, it is associated with
44 very low concentrations in water itself. According to Ms. Smith, material deposited in the
45 floodplain does not typically erode away but is buried and remains there. To her knowledge, she
46 said, this material is not coming out of the floodplain into the water; rather, material is entering

1 the water from the Y-12 Plant. Ms. Kaplan questioned that if this was true, then mercury would
2 show up in the fish that closer to the creek. However, according to Ms. Kaplan, findings show
3 that these fish are well downstream of Y-12; she said this was why she expressed this concern at
4 the “State of the Creek Address.” As she understood it, Ms. Kaplan said, this mercury could be
5 coming from the soil. Ms. Smith expressed her belief that they did not know where the mercury
6 was coming from. Ms. Kaplan said that she had asked this question and been told that it was a
7 possibility.

8
9 Ms. Sonnenburg asked Dr. Taylor if he could address some of Ms. Stokes’s request by
10 evaluating individuals and looking at particular areas of concern (as indicated by members of the
11 public) for the mercury PHA. Dr. Taylor replied that this would not be part of his work. Mr.
12 Brooks indicated that it had already been done twice for people eating fish—once in Oak Ridge
13 and once in Watts Bar Reservoir. Ms. Kaplan said that this examined urine and hair. Ms. Stokes
14 expressed her belief that people were found to have mercury contamination; Ms. Kaplan said that
15 to her knowledge there was only one person. Mr. Hanley explained that the Tennessee
16 Department of Health (TDOH) and NCEH drew urine samples and tested people living near Oak
17 Ridge in 1984–1985; the findings would be discussed and presented in the PHA. Also, Mr.
18 Hanley said, it was determined that the most likely exposure would be from fish down in the
19 Clinch River and Watts Bar Reservoir, and a study on this was conducted in 1997.

20
21 Ms. Sonnenburg expressed an interest in hearing from some of the other experts. She questioned
22 whether one could detect mercury levels in bones and blood by evaluating urine: she had been
23 told that this did not work. According to Ms. Adkins, she has heavy levels of mercury poisoning.
24 She expressed her belief that mercury does not show up in hair or urine unless it has been
25 agitated by chelation—after other toxins are removed from the body—and it could take 2 to 3
26 years for mercury to show up even if present in high levels. She indicated her belief that mercury
27 is not easy to detect and is reluctant to show up even though it causes damage and embeds in the
28 deep tissues of the brain. According to Ms. Adkins, she had been tested at the University of
29 Tennessee (UT) and was told she was fine. Ms. Sonnenburg asked how she had been tested. Ms.
30 Adkins said she was tested via urine and hair, but mercury did not show up. However, after
31 chelation, according to Ms. Adkins, mercury showed up in huge levels about 3 years after other
32 toxins had been removed. Ms. Sonnenburg said she was told that urine testing shows nothing for
33 people who eat fish, and questioned why urine was tested when the substance could be in all
34 parts of the body and not show up. Mr. Hanley said that the study conducted in 1994 included
35 urine analyses, but the 1997 study included blood samples. Ms. Sonnenburg said she believed
36 that the 1997 study included mostly urine sampling; Mr. Hanley said that she was incorrect. Ms.
37 Kaplan said that she has summaries of these studies in her report, and Mr. Hanley said that
38 summaries were also on the ORRHES Web site.

39
40 Michael Quick is with the International Chemical Workers Union Council
41 (ICWUC)/International Association of Machinists and Aerospace Workers (IAM) Center for
42 Workers Safety, teaches HAZWOPER training to BWXT employees, and is a longtime Oak
43 Ridge resident. In his opinion, he said, the 400 ppm level seems to have been deemed safe
44 provided there is no disturbance of soil or anything else. He expressed his belief that this was a
45 good presentation of the report. He asked what happens if soil is disturbed by tree-planting,
46 digging, gardening, or other such activities. He said that if someone buys the property, even if

1 contamination is 6 inches below ground, these activities would have changed something in his
2 opinion. He stated that this might be safe if nothing changes; however, he asked what happens if
3 these activities occur and changes do take place. He asked what the degree of threat would be for
4 people living downstream and people doing the work. Ms. Kaplan indicated that she had
5 statements related to his comments that she would discuss so they would be incorporated into the
6 record.

7
8 In his opinion, Mr. Quick said, it appeared to be a common sense approach to notify residents
9 living there now and if plans change. He questioned why there was reluctance for notification,
10 saying that as a resident he found it difficult to see the reason. He asked if it was because
11 developers or the city itself were trying to revamp the area's image and feared having this issue
12 resurface. In his opinion, Mr. Quick said, it was a no-brainer that people living there should be
13 warned.

14
15 Mr. Hanley expressed his belief that the question regarding mercury changing over time was
16 good, noting that this issue would be further evaluated in the PHA. He indicated that mercury
17 had been evaluated in the 1990s. He elaborated on the three different forms of mercury.
18 Elemental mercury, which is associated with vapor problems, was detected in air (above soil) at
19 concentrations about 2,000 times below levels where health effects have been observed. Organic
20 mercury, which is the more toxic form that bioaccumulates in fish, was basically detected in soil
21 at background levels. Most of the mercury is inorganic—what ATSDR refers to as inorganic
22 salts. According to Mr. Hanley, the form could not be identified and the mercury was determined
23 to be relatively unavailable, as it would not come out of soils and therefore would be difficult for
24 DOE to extract. Mr. Hanley indicated that they would evaluate the issue dealing with change
25 over time and see if this could be added to the discussion in the PHA. In his opinion, he said, Ms.
26 Kaplan's report brings up many issues. He indicated that the answers exist, but this was an
27 opportunity for ATSDR to bring these answers to the forefront and clarify them so that the public
28 can be informed about past decisions, findings, and why ATSDR determined that this was
29 protective of health.

30
31 Mr. Cardwell asked whether mercury poisoning would stay in the system forever or if it would
32 work itself out. Dr. Blaylock answered that organic mercury will usually pass through the system
33 with little taken up. On the other hand, he said, methyl mercury goes into the blood stream,
34 usually accumulates in the brain, and remains for a long time—causing permanent damage, such
35 as tremors.

36
37 Ms. Stokes said she had experience with mercury because she has been poisoned with it. She
38 said she has conducted research on the substance for probably about 10 years, and that studies on
39 mercury date back several years. She expressed her belief that mercury has been a poisoning
40 element since its existence. As she understood it, she said, if an acute dose of mercury is taken
41 into the body, it will show up in the urine; however, with a chronic dose, mercury will not come
42 out in blood or urine except in minute traces. In her opinion, she said, it probably indicates that
43 the person has a huge body burden of mercury if traces of mercury are detected in blood or urine.
44 Ms. Stokes expressed her belief that fish absorb mercury through water and eating biota, and
45 then turn the mercury into methyl mercury once the substance is in their bodies.

1 According to Ms. Stokes, there was a scientist working with trimethyl mercury who died a few
2 months after the chemical went through her glove. To describe trimethyl mercury's toxicity, Ms.
3 used the example of elemental mercury in a thermometer. She said that a pin-size drop would be
4 enough to poison a child even if it were vacuumed up; she based this statement, she said, on
5 studies of identical twins exposed where one died and one survived. In her opinion, she said, it
6 did not mean that contamination did not cause a death if two people are exposed and only one
7 dies. Instead, she said, this indicated that one person's nutrition, susceptibility to poisons, and
8 other factors were better. She cautioned the group to remember that these toxins affect people
9 differently.

10
11 Ms. Sonnenburg asked about blood tests. Ms. Stokes repeated her opinion that a person probably
12 had a heavy body burden if any trace was found in blood samples. She agreed with Ms. Adkins,
13 expressing her belief that a higher level would be shown if the body is agitated by chemicals and
14 that a trace would have to be used if it was not agitated.

15
16 Mr. Brooks said that he lives next to the floodplain. He explained that he had horses that
17 currently grazed on the floodplain and had their hair and feces sampled. He also grew tomatoes
18 on the floodplain; these were sampled as well. According to Mr. Brooks, the samples showed
19 nothing. He indicated that he would not pursue all of the technical issues of the report, but would
20 rebut some of the statements regarding public participation, particularly his own. He read from
21 page 7 of the report, "He [Brooks] said the mercury in the floodplain is essentially innocuous
22 because it is one of the most insoluble compounds known." Mr. Brooks said that this was not the
23 only reason, noting that data in the literature are never mentioned in the report. According to Mr.
24 Brooks, there are studies on the uptake of mercury in humans (noting a study related to mercury
25 sulfides and the mineral cinnabar, used in Chinese traditional medicine to calm nerves), which
26 found that uptake was minimal. In his opinion, he said, this report leaves out and selects
27 information to support a decision, but does not include information in literature or that has been
28 presented at various meetings. Therefore, he believed, the report is biased.

29
30 Mr. Brooks referred to a quote from a letter to Joe LaGrone published in *The Oak Ridger* that the
31 report states was upsetting to some: "I would especially like to thank Mr. David Page and many
32 others of the DOE and the contractor staff who assisted me in the presentation of the opposition
33 view during the last several months." He then brought up a quote provided in the report, cited as
34 personal notes from a property owner regarding Mr. Brooks's statements: "To me [this was] an
35 extraordinary disclosure: DOE coaching a person or persons to appear at a formal public meeting
36 to pressure EPA and the State of Tennessee to accept higher cleanup limits when such higher
37 limits accrue direct benefits to DOE." Mr. Brooks said he was unaware that being civil was a sin.
38 Regarding the implication that he and DOE had the same objectives, Mr. Brooks expressed his
39 belief that he and DOE both had concerns that the risk analysis for mercury had been calculated
40 incorrectly. In fact, he said, there was evidence in DOE reports of original computations being
41 changed to those mandated by EPA. Further, he said, Mr. Page had assisted him, but in his
42 opinion the report's use of the word "coached" suggests a personal insult to his integrity. As far
43 as he and EPA having the same objectives, Mr. Brooks said that the cost was estimated at over 1
44 billion dollars. According to Mr. Brooks, Fred Maienschein had estimated a safety factor of
45 500,000, and he and DOE had expressed their opinions that this was wasting money.

1 Mr. Brooks commented on the plural use of “persons,” saying that he had spoken for himself
2 alone. He added that anyone familiar with Mr. Maienschein, Josh Johnson, and himself would
3 know that being coached is not a possibility. He explained that Mr. Page’s assistance was limited
4 to providing names of risk assessors and a toxicologist for him to speak with about risk
5 calculations and to answer his questions about the project. Also, according to Mr. Brooks, he
6 asked SAIC to provide him with a disk of mercury levels to avoid rekeying several thousand
7 numbers and had also discussed how the data were massaged. He stated that he never suggested
8 any remediation levels or direction of efforts, and was never asked to.

9
10 Mr. Brooks referred to another statement in the report from page 9: “Something here appears to
11 be all wrong. Al Brooks spoke nine times at the meeting, more times and more pages of
12 transcript than anyone else.” According to Mr. Brooks, this statement asks whether the meetings
13 were manipulated—a serious charge against a professional person. He said that asking someone
14 for assistance should not be classified as conspiracy or collusion, adding that this assistance was
15 available to anyone who asked politely. Ms. Kaplan made a correction that he had spoken 14
16 times. Mr. Brooks stated he was not aware that there was a set time limit for speaking at public
17 meetings. In his opinion, he said, the report makes no mention as to whether the comments made
18 by himself and other members of the public were valid or not. According to Mr. Brooks, both
19 Almer Akin of EPA and Fred Saffron of SAIC said that public claims were technically correct
20 though EPA calculated these things differently—incorporating safety factors into the input
21 data—from a position based on EPA’s congressional mandate, which in his opinion was a
22 political and not a scientific position.

23
24 Mr. Brooks expressed his belief that EPA’s method to calculate risk had been a bone of
25 contention on the Lower EFPC project. According to Mr. Brooks, the basic error was that EPA
26 had no mercuric sulfide data (except for minimal data in scientific literature) and used mercuric
27 sulfide—the most soluble known form of mercury compounds—in its calculations and
28 substituted these values for the most insoluble. In his opinion, he said, this produced very biased
29 data, which was what they had been opposed to.

30
31 To conclude, Mr. Brooks said, he felt that the worst transgressions of the ITPSA report are not in
32 impugning him, as he is now retired and his past colleagues (including what he referred to as the
33 friendly opposition) know he is not coachable. In his opinion, he said, the real damage would be
34 to current DOE employees who have been maligned and have no way to respond because DOE
35 does not respond to reports of this nature. He expressed his belief that DOE made every effort to
36 be open with the public, but that this report accuses them of manipulation and conspiracy. He
37 said he could not see how this could lead to either improved public participation or an improved
38 environmental management program; in his opinion, it was non-productive.

39
40 He continued by saying that the allegation of conspiracy is ludicrous, and questioned exactly
41 whom he conspired with—DOE, including Mr. Page? According to Mr. Brooks, he was openly
42 opposed to DOE as long as the agency appeared responsible for distorted risk assessment, and
43 thereafter opposed to DOE’s silence and EPA’s risk assessment shortcomings. He noted that co-
44 conspirators do not oppose each other, as he had done. He asked if this was implying that he
45 conspired with the public, and recalled that the vast majority of the public had commented that
46 the 180 ppm level was too low. In his opinion, he said, this report is divisive: it divides DOE

1 from the public, inhibits trust on false ground, and clouds ATSDR's PHAs because they use
2 DOE data.

3
4 Mr. Brooks asked how he might know who harbors such low opinions of his effort and give them
5 an explanation, given that anonymous sources are cited in the report. In his opinion, he said, both
6 unidentified large landowners in table 9 are easy to figure out; he said he was human enough to
7 ponder which one was poorly informed. He expressed his belief that the public and science have
8 been divided, adding that all views opposed to EPA risk assessment were based on published or
9 project data that represented thousands of hours of determined work. However, in his opinion,
10 the report brushes this aside by labeling it as manipulation or worse, thus reducing its status to
11 opinion.

12
13 Mr. Brooks suggested that this report be read with caution and that, in his opinion, the lack of
14 citations, incompleteness of citations, and anonymity of quotes will guide the reader. He said that
15 the reference link on the Internet would provide an idea of the scope of the problem and the
16 diverse opinions of EPA risk assessment. He says he refers to about 47 papers that have been
17 accumulated and read during this process, containing all of the information that rarely comes out
18 in the public—much of which he considered to substantiate the claim that 400 ppm is adequate.
19 He stated that people indicate that the level was first 10 ppm, then changed to 400 ppm. He
20 expressed his belief, however, that the first level was actually 720 ppm: it was then dropped 10
21 ppm, and gradually increased. According to Mr. Brooks, these levels changed as new
22 information became available about the nature of mercury and how insoluble it was.

23
24 Mr. Brooks explained that the risk had not changed, and therefore they asked themselves how
25 you could go from the most soluble compound to the insoluble compound without changing the
26 risk. According to Mr. Brooks, they found that EPA substituted the one known value for
27 inorganic mercury (mercuric chloride) for any unknown compound, but this did not change the
28 risk level. He said that this was the reason for their work, not because there was manipulation
29 from DOE. Mr. Brooks stated that they were pressured by their knowledge of science and to
30 reach a reasonable solution for EFPC. Mr. Brooks added his opinion that the report also deals
31 with many technical issues that are not completely stated and that contrary data exist to many of
32 the report's claims. He expressed his belief that this matter was not as cut-and-dried as the report
33 would make it seem.

34
35 Ms. Stokes referred to Ms. Sonnenburg's question about studying individuals, and expressed her
36 belief that the reply was that ATSDR does not do that type of work. She questioned who would
37 do this type of work because, in her opinion, it was needed here. She asked if they should request
38 that ORRHES be dissolved and the money put into where they could get the best product. She
39 asked if TDOH could do this work, noting that she has had different experiences with the agency
40 over the years and had seen what she considered to be good work. In her opinion, she said, the
41 contaminants have been studied and identified (Y-12 releases into EFPC, X-10 releases into Beer
42 Creek, and K-25 releases into Poplar Creek, all leading to the Clinch River).

43
44 Ms. Stokes asked what they could do to learn who has been affected and how to keep health
45 effects from occurring again. She said that they could possibly contact an agency other than
46 ATSDR, since in her opinion ATSDR is certainly not doing what they need in the community.

1 According to Ms. Stokes, ATSDR has been asked to leave different places because it continues
2 to have inconclusive results. She expressed her concern that there has always been a question of
3 objectivity and questions about the agency's data collection methods. In her opinion, she said,
4 ATSDR used flawed data that was questioned when first presented. She expressed concern about
5 conflicts of interest and findings that say there has never been and never will be harm to the
6 public from uranium and mercury. She said that if people found this to be true, then she had
7 property to sell them. In her opinion, she said, ATSDR had a lot of good and smart people, but a
8 terrible history of developing proper results for humans.

9
10 Dr. Cibulas expressed his belief that Ms. Stokes had raised some very important questions. He
11 said that he would not go into too much detail on the agency's mandate, capabilities, and
12 responsibilities. However, he explained that ATSDR conducts health assessments as a first step
13 in evaluating exposures, and can identify concerns and make recommendations that generally
14 drive any follow-up steps for individuals who have been exposed. The agency can also conduct
15 exposure investigations; two have been conducted here for fish and biological monitoring. When
16 these studies identify exposures considered to be of concern, this generally extends beyond their
17 particular division, which was why Dr. Taylor indicated that he was not able to follow up on
18 these types of studies: it is not part of the public health assessment process. When these types of
19 exposures are found, DHAC can ask the Division of Health Studies (DHS) to become involved.
20 Through these means, ATSDR can conduct health studies on people who were identified as
21 exposed, conduct surveillance, and place people on registries.

22
23 Ms. Stokes expressed her belief that Congress took this responsibility away from ATSDR. Dr.
24 Cibulas denied this, saying that ATSDR has always had the mandate and responsibility of
25 conducting follow-up health studies on individuals who they have found are at risk of exposure
26 as a result of exposure investigations and PHAs. He stated that this was never a mandated
27 responsibility that was taken away from the agency. ATSDR does not, however, set up clinics,
28 provide physicians to communities, or provide primary care.

29
30 Ms. Stokes asked if ATSDR has ever offered funding to help people get screening. Dr. Cibulas
31 replied that ATSDR has a cooperative agreement with and provides some funding for a number
32 of clinics across the United States—a group called the Association of Occupational and
33 Environmental Clinics (AOECs). ATSDR can refer individuals who are looking for this type of
34 support and medical care to these clinics. Ms. Stokes asked how much it costs to fund the clinics.
35 Dr. Cibulas expressed his belief that the agency provides about \$500,000 a year to help fund
36 these clinics. In her opinion, Ms. Stokes said, it would be cheaper to set up a clinic to help
37 evaluate people than to keep this subcommittee for another 2 to 3 years. She claimed that the cost
38 of a clinic would be about one-third of the 2-million-dollar budget for Oak Ridge (site activities
39 and the ORRHES). Dr. Cibulas explained that \$500,000 was not the total support for one clinic;
40 other federal agencies also provided funding. He could not provide the total amount spent for
41 supporting the clinics, but said that he would provide her with this information.

42
43 Janet Michel wondered how many years this community has been asking for monitoring of
44 people and some type of clinic. According to her, they were always told that this could not be
45 done. Ms. Stokes said that she personally started requesting a clinic in 1992, but that requests
46 dated back to the 1980s. Dr. Davidson explained that the ORRHES conducted an extensive

1 evaluation to determine whether the community qualified for an AOEC clinic, but it did not
2 qualify. In her opinion, Ms. Stokes said, there was no way for this subcommittee to be unbiased
3 when examining these issues because its members are heavily tied to industry and area real
4 estate. She expressed her belief that their loyalty would not be to the people because they had
5 been trained and employed by DOE and probably had their college tuition paid for by DOE.

6
7 Dr. Davidson replied that the ORRHES encompasses a diverse group of individuals with varied
8 backgrounds—it is not a homogenous group. Though some of its members were employed at
9 ORNL, none to her knowledge were DOE employees. Ms. Stokes said everyone here knew what
10 she was saying, telling attendees not pretend they did not know that this was a biased board. In
11 her opinion, the ORRHES was biased toward industry and finding no significant findings in
12 health reports. According to Ms. Stokes, this particular site is in the middle of an approximate
13 23,000-person city and was the closest city to any nuclear weapons site in the United States
14 (except possibly for one in Colorado). In other areas, she said, nuclear sites are hundreds of miles
15 away from populated areas. She said that they did not have to believe her, but that they could
16 find the truth themselves if they researched it.

17
18 Ms. Michel said she was not aware that an evaluation had been conducted that found that the
19 community was not eligible for monitoring or a clinic. She asked if this evaluation was available
20 for the public to review. Dr. Davidson expressed her belief that this information could be found
21 in earlier meeting minutes, noting that Pete Malmquist had been the head of the group that
22 conducted the evaluation. Dr. Malmquist confirmed that he had chaired that group, which had
23 indeed conducted this evaluation several years ago. He said that they had worked through TDOH
24 and had received assistance from Brenda Vowell. He explained that they had looked at the
25 possibility of piggybacking through one of the clinics in Lake City, Oliver Springs, or Wartburg;
26 however, they did not qualify for this clinic. According to Dr. Malmquist, they had considered
27 and evaluated all of the available possibilities.

28
29 Also, Dr. Malmquist expressed his resentment toward being called biased. He said that he is a
30 retired veterinarian from Roane County who never worked for DOE or anyone else. In his
31 opinion, he said, he is not the least bit biased and served as the Chairman of the Board of Health
32 in Roane County for 25 years. He stated that his interests are in public health, noting there is a
33 difference between individuals and the public.

34
35 Ms. Michel questioned what was meant by not qualifying for a clinic, particularly referring to
36 how Dr. Cibulas said that ATSDR could provide one. Dr. Malmquist said he had not heard Dr.
37 Cibulas say that ATSDR would provide a clinic; rather, he said, Dr. Cibulas had indicated that
38 ATSDR could provide a way to go to individual clinics. Ms. Stokes pointed out that Dr.
39 Malmquist was a veterinarian, and expressed her belief that many medical doctors would say that
40 humans were not consistent with animals. Dr. Malmquist said that they had not looked at animals
41 in this evaluation. They had evaluated the possibility of getting a clinic in this area for people.
42 According to Dr. Malmquist, they had looked very hard to get a clinic here, but they had not
43 qualified under any guidelines that could be found.

1 According to Ms. Stokes, there was a cluster of five cases of amyotrophic lateral sclerosis (ALS,
2 or Lou Gehrig's disease) on one street, but they did not qualify for assistance because the cases
3 were not reported in the same year.

4
5 To support Dr. Malmquist's comments, Mr. Lewis said that they had gotten the Health
6 Resources and Services Administration (HRSA) involved in the process. HRSA had come to
7 Oak Ridge and looked at evaluating all areas to see if they qualified for this type of clinic. They
8 had identified several AOECs (with the closest one being in Meharry, Tennessee). Mr. Lewis
9 recalled that a grant of about \$500,000 was being given to HRSA. As part of the effort, Mr.
10 Lewis said, he had questioned why UT would not look at something like this. If they had
11 returned to this issue, Mr. Lewis might have prepared a recommendation to see if the State of
12 Tennessee would look at UT becoming an AOEC clinic. Ms. Michel recalled HRSA saying that
13 Oak Ridge was not a medically underserved community, which she considered to be the key
14 phrase. In her opinion, she said, the problem with this community is that physicians are afraid to
15 test people for contamination in their bodies and the one physician who tested people was run out
16 of the community. She expressed her belief that this was why no one tests, adding her opinion
17 that UT does not become involved because UT Battelle runs ORNL. According to Ms. Michel,
18 an organization she is involved with had an EPA technical assistance grant at UT, and UT
19 became worried and did not want involvement with them because of UT Battelle.

20
21 Mr. Hanley indicated that Mr. Lewis and Dr. Malmquist presented the subcommittee members'
22 evaluation to the ORRHES at an August 2002 meeting. He said that more information on the
23 evaluation, the calculations computed, and HRSA criteria are available in the Oak Ridge Field
24 Office. Dr. Taylor could provide her with the files, including the meeting minutes and handouts.
25 According to Mr. Hanley, a program review was conducted to examine the mandates of ATSDR,
26 DOE, and the state to determine whether there was any way to have a clinic funded; none of
27 these entities, however, have a mandate to provide medical care. Mr. Hanley said that all of this
28 information was included in the evaluation, expressing his belief that the information was clearly
29 presented to ORRHES and the subcommittee made a recommendation on this issue at that time.

30
31 In her opinion, Ms. Michel said, there was also a disconnect because there were people who
32 wanted medical care, but also those who only wanted to be tested and monitored. She asked Dr.
33 Cibulas about his comments regarding providing monitoring in other communities, and asked
34 what the difference was between other communities and this community that did not qualify. Dr.
35 Cibulas explained that ATSDR would conduct health studies through its Division of Health
36 Studies, which comes into a community if significant exposures and health concerns have been
37 identified. For these individuals, he said, ATSDR will conduct follow-up epidemiological
38 investigations, but they had to be exposure-driven to qualify for this type of investigation. He
39 explained that a PHA is the first step in trying to identify if significant exposures exist that
40 warrant this type of epidemiological investigation—where there is actually a probability of
41 looking at cause and effect.

42
43 Ms. Stokes said the community did not need ATSDR here and that they should go home. Dr.
44 Davidson reminded meeting attendees that they needed to be respectful of one another. Ms.
45 Stokes apologized, but said that in her opinion, this has gone on for years. Dr. Davidson said that
46 she understood, but that they still had to maintain respect for each other.

1
2 In her opinion, Ms. Kaplan said, this still remains a controversial issue. She asked that she be
3 permitted to go through some of the quotes from her report to give actual statements that Mr.
4 Brooks made in 1995 and put things into context regarding what people were thinking at that
5 time. She expressed her belief that people were very upset about the domination of a public
6 meeting by a couple of individuals. In her opinion, she said, DOE needed to be careful about the
7 appearance of conflict of interest. She said that she had tried to tell the story and asked for an
8 opportunity to tell the rest of the story. Dr. Davidson polled the subcommittee to ensure that
9 members would stay until the agenda was completed to ensure they had a quorum. The group
10 held discussions about staying and enough individuals agreed to remain until the agenda was
11 completed.

12
13 Ms. Sonnenburg said that she had spoken with public members at the break who wanted to speak
14 and asked for time to do so. She expressed interest in hearing from individuals who had not
15 spoken yet.

16
17 Dr. Cember stated that he had two facts to share. He conducted a study years ago on the
18 distribution, deposition, and clearance of mercury in rats and dogs. In one case, he was using
19 mercuric chloride and was trying to inject the substance into the belly of a rat. The rat kicked
20 him, and he injected the chemical into his pinky instead of into the rat. He had his assistant check
21 him with a sensitive scintillation counter. All of the mercury had essentially concentrated in his
22 kidneys. An *x* was been placed on his back in indelible ink to measure the daily activity. After
23 about 3 months of measurement, the mercury level was immeasurable. When he plotted the data
24 on a semi-log plot, it fell on a straight line with an 11-day half-life; this was the effective life
25 considering elimination from the body and radioactive decay. He said that a tiny amount came
26 out in his urine, but most of the mercury was eliminated in his feces.

27
28 Dr. Cember detailed another study he conducted analyzing excretion via urine and feces. He
29 explained that the method of analysis for urine means that you cannot distinguish if what comes
30 out in cells is sloughed off from the kidneys or eliminated as a liquid. When the cells were
31 filtered out, Dr. Cember found that 96% of the mercury in urine was in cells that had sloughed
32 off. He said that he saw this in animals that had gotten relatively high amounts of mercury. With
33 low amounts, they had less coming out in the urine and more in the feces. Through additional
34 studies, he determined that elimination in urine is a pathological process that occurs when cells
35 in the renal tubules are poisoned by mercury; mercury kills those cells and they are sloughed off.
36 He said that mercury will only be found in urine when there is a large enough amount of mercury
37 to damage the cells in the kidneys. He also found that significant amounts of mercury are
38 secreted by cellular mucosa. According to Dr. Cember, he had nice data on the elimination via
39 the gastrointestinal tract. Regarding how mercury is carried in the body, he said that it is not only
40 carried in the blood. He explained that mercury binds to and is carried by plasma proteins
41 (globulins and albumins). If you separated the globulins and albumins and removed them from
42 the blood, he said this would be a more sensitive analysis than a gross analysis of blood.

43
44 Dr. Cember said that mercury clears out of the body. He explained that when conducting these
45 types of studies, he needed to use an amount of mercury that was non-toxic to the rat to obtain
46 proper data. Dr. Cember said that the small amounts he received were cleared rapidly; nothing

1 was detected in his head or anywhere else. He said that it could be measured in his body in the
2 first few days, but after that, it was essentially only seen in the kidneys. He had used bichloride
3 of mercury, which he said maybe different than other mercury compounds.

4
5 Regarding solubility, Dr. Cember said he had done some work with sulfide. He noted that this
6 substance was extremely insoluble in water, but relatively soluble in the stomach. Because of the
7 large amount of hydrochloric acid in the stomach, if enough sulfide is ingested it will dissolve so
8 that it can be absorbed into the blood and transported throughout the body. He referred to Ms.
9 Stokes's question about why they are not studying individuals or people, offering what he
10 characterized as an educated guess. He said that enormous amounts of clinical and
11 epidemiological data are available on mercury poisoning. Occupational data are available,
12 including data related to Mad Hatter's disease (a classic example of mercuric nitrate exposure
13 that caused disease in workers manufacturing felt). In addition, about 20 years ago, a chemical
14 company in Japan was disposing of enormous amounts of mercury into Minamata Bay. He said
15 that a large number of people living around this developed crippling diseases, and there are lots
16 of data about these exposures.

17
18 Dr. Cember said that there are also a lot of data related to these exposures, and also data showing
19 the occupational exposure limit of 0.1 milligram per cubic meter (mg/m^3) of air. He said that data
20 have documented workers having tremors after 2 years of exposure at the OSHA limit when
21 monitored at the average value ($0.1 \text{ mg}/\text{m}^3$). According to Dr. Cember, there is a voluminous
22 amount of data that all lead to dose-response relationships, and therefore, scientists know what
23 average type of dose will produce certain types of effects. In his opinion, he said, this was why
24 contaminants are looked at instead of individuals. He said that if the level of a contaminant is so
25 low related to what is known about the dose-response curve, health effects would not be
26 expected among people. He said this was based on enormous amounts of data on the dose-
27 response curves. He stated that he would guesstimate that it would be a waste of money to look
28 at people when contaminants would be so low that no health effects would be expected; he
29 gathered that this was why there were looking at contaminants and not going further.

30
31 Mr. Lewis asked that they summarize what they have done here and where they are going. He
32 expressed concern that they spend so much time, questioning what their specific objectives are.
33 Likening Dr. Cember speaking to E.F. Hutton speaking, he said that Dr. Cember should be at the
34 head of the table so people can get responses to their questions at the time they are asked: people
35 lose interest, he said, when they have to wait for answers. According to Mr. Lewis, they needed
36 to figure out how to free these resources and use this knowledge and talent to respond to these
37 issues in a timely manner. Dr. Davidson expressed her belief that Dr. Cember had just done this.
38 Mr. Lewis expressed concern that they might have missed the opportunity if Dr. Cember had not
39 spoken up.

40
41 Regarding the quote Ms. Kaplan provided from the June 1995 EFPC public meeting, to which
42 she added Mr. Maienschein's name in brackets, Mr. Brooks said she should have included about
43 30 more names.

44
45 Ms. Stokes asked who recommended changing the cleanup level to 1,200 ppm. Ms. Kaplan was
46 referring to a quote from Mr. Brooks, she said, noting her opinion that he was a highly respected

1 member of the community, an outspoken individual, a former ORRHES member, a community
2 activist, and a retired scientist from ORNL. She expressed her belief that Mr. Brooks had led the
3 charge on changing the cleanup level to 400 ppm.

4
5 Ms. Smith elaborated on her quote that Ms. Kaplan presented from the June 1995 EFPC public
6 meeting. According to Ms. Smith, at one time in the CERCLA process for EFPC, the preferred
7 alternative for many people was to have DOE buy their contaminated property and turn the area
8 into a public park. She stated that the idea was to preclude, through land use controls, certain
9 types of uses that would cause distribution of the soil. To her recollection, someone at DOE had
10 said that DOE did not have the legal authority to do this and further someone at EPA Region IV
11 asserted to her that this action would not be sufficiently protective. In her opinion, she said, since
12 this was a floodplain, it did not make much sense to use taxpayer money to turn it into buildable
13 land, particularly when contamination was present. She expressed her belief that by January
14 1995, it was clear that the direction was to go toward cleanup instead of imposing land use
15 controls. In her opinion, she said, the preferred alternative (a public park) still would have been a
16 good option. Ms. Kaplan agreed but spoke of a need to focus on the future, adding her opinion
17 that many of these issues have not been well documented.

18
19 Dr. Davidson noted that many mercury-related issues had been discussed at the meeting so far,
20 including issues brought up by public attendees with some responses being provided during the
21 meeting. She noted that ATSDR is currently preparing the mercury PHA, and that the three
22 people mainly involved in preparing the report—Mr. Hanley, Dr. Taylor, and Dr. Cibulas—were
23 present at the meeting.

24
25 Pat Hunter introduced herself as affiliated with Clean Air Friends—Clean Air Kids from Loudon
26 County. She thanked Mr. Lewis for inviting them to the meeting and stated that she liked what
27 she had heard from Ms. Kaplan. She expressed her belief that whether you live in Loudon
28 County or Oak Ridge, they needed to look at contaminants that they find are causing major
29 problems. According to Ms. Hunter, their children in Loudon County were sick. In her opinion,
30 Ms. Stokes had made some excellent points regarding agencies evaluating these health issues
31 relative to these contaminants. She expressed her belief that, when looking at these data to see
32 whether things are safe or not, for those who are monitors and are getting sick, one must evaluate
33 these issues realistically. She said that today it is the older population, but that they owed it to the
34 children to look at these issues and resolve them—not to push them off or forget about them.

35
36 Ms. Hunter expressed her hope that this agency and subcommittee will look at mercury,
37 uranium, and health issues. She asked that the agency look at the health issues of people in these
38 communities because, in her opinion, they were becoming sick and these issues needed to be
39 addressed. She said that for employers, insurance will cost more, and similar types of issues will
40 trickle down. She stated that if children are getting sick with developmental problems, then they
41 too will suffer throughout their lives and in everyday life. In her opinion, she said, they would be
42 doing a great disservice by ignoring these problems and saying the chances are one in a million.
43 She expressed her belief that there is something wrong with the air, soil, or water when people in
44 the community are developing cancer, and she referred to this situation as a wake up call.

1 Ms. Adkins asked the attendees to imagine that, from the time that they were conceived until
2 they were 23 years old, they were impacted by springs affected by mercury every time they ate,
3 drank water, washed a wound, showered, swam, and ate fish. For months, Ms. Adkins said, she
4 has been working on a project compiling information. She has met with people individually who
5 are helping her map where toxic wastes were buried, including mercury and other contaminants.
6 She has had maps made (she presented these to the group) on which she is marking where items
7 were buried based on her interviews. According to Ms. Adkins, some burial sites were 300 feet
8 deep. She said that some of her sources told her that when they went back to check on the sites 5
9 years later, the substances had drained into the bedrock of the earth in that area. She said she was
10 relentless in her search and asked anyone who knows where things were buried to contact her.

11
12 Dr. Cember asked if these were substances buried on or off site. Ms. Adkins said it was both. She
13 also had a topographical map of the same area, showing the ridges. According to Ms. Adkins,
14 when she shows where the releases from the plumes occurred, you will be able to see the ridges
15 and where the toxins were carried. She expressed her belief that they should be able to know the
16 kinds of illnesses related to the toxins and be able to trace them to the illnesses from the areas
17 where contaminants were disposed of.

18
19 Ms. Adkins indicated that she also had a regular map and was making red dots to indicate the
20 burial sites and dumping grounds used for toxins. She said that she has recorded what was
21 dumped into each one. In her opinion, she said, you could see where things were buried on the
22 limestone slab and where they were carried. For example, she pointed to the pink slab on her
23 map, indicating her opinion that this was where a lot of waste from K-25 and possibly Y-12 was
24 dumped and buried. She expressed her belief that this was the most porous of all of the slabs.
25 According to Ms. Adkins, mercury and other contaminants sank below 300 feet. She said she
26 was referencing people she considered to be very credible sources who said that contaminants
27 would stay on this limestone slab. In her opinion, she said, they should be able to track where
28 people should be sick based on where the contaminants were dumped. She expressed her belief
29 that they will be able to see pathways, not just around water but in underground sources as well.

30
31
32 **Presentation/Discussion: Evaluation of Potential Exposures to Contaminated**
33 **Off-Site Groundwater from the Oak Ridge Reservation**
34

35
36 Dr. Evans explained that he was presenting work conducted by Lt. LeCoultre (who was unable to
37 attend) and Mr. Hanley regarding the public comment draft PHA for off-site groundwater.

38
39 Regarding the scope of the PHA, Dr. Evans said that the document is an evaluation of the
40 potential for off-site exposure of the community to contaminated groundwater—it is not,
41 however, a) a characterization of on-site groundwater contamination, b) a report on the
42 effectiveness of various remedial ongoing actions related to groundwater, or c) an evaluation of
43 exposures to contaminated surface water or sediment that may be the result of discharge of
44 contaminated groundwater.

1 Dr. Evans presented a map of the ORR watersheds, which are broken into three different areas
2 for this PHA: East Tennessee Technology Park (ETTP) Watershed, Upper East Fork Poplar
3 Creek (UEFPC)/Bear Creek Valley Watershed, and White Oak Creek (Melton Valley and Bethel
4 Valley) Watershed. He said that DOE, the U.S. Geological Survey (USGS), and various
5 contractors have studied the groundwater in the area extensively. The following generalizations
6 were made about groundwater flow:

- 7
- 8 • Groundwater occurs in the unconsolidated zone—bedrock is typically very near the surface.
 - 9
 - 10 o Very little unsaturated flow and not a lot of sediments.
 - 11
 - 12 o No alluvial flow unless in river valleys and creeks.
 - 13
- 14 • Groundwater primarily occurs in cracks and fissures in the bedrock.
- 15
- 16 • Fractures decrease significantly with depth.
 - 17
 - 18 o Fractures and cracks caused by dissolution of limestones and other rocks by fresh water.
 - 19
- 20 • Flow paths to surface water are very short.
- 21
- 22
- 23 • As much as 95% of shallow groundwater ends up as surface water.
- 24
- 25 • Seeps, springs, diffuse discharge to streams.
 - 26
 - 27 o There are no areas of concentrated discharge per se; rather, a lot of little fractures along
 - 28 the area constitute a baseflow to streams.
 - 29
- 30 • The Clinch River is a major topographic feature that prohibits migration of groundwater off
- 31 site.
- 32

33 Dr. Evans presented a map of the ETTP Watershed, noting the range of samples collected. The
34 map showed some of the on-site wells; and yellow labels represented off-site seeps, wells, or
35 springs that have been sampled at least once. According to Dr. Evans, even though basic geology
36 and hydrogeology indicate pretty short flow paths and not much contamination off site, these off-
37 site areas were still sampled to ensure that contaminants were not showing up there.

38

39 Dr. Evans provided the following points regarding the ETTP summary:

- 40
- 41 • Groundwater contamination is a result of several commingling volatile organic compound
- 42 plumes.
- 43
- 44 • Plumes occur in the shallow groundwater.
- 45
- 46 • Mitchell Branch serves as a discharge point for shallow groundwater.

1
2 • There is no evidence that site-related contaminants have migrated beyond ORR boundaries in
3 groundwater from ETTP.

4
5 • Contamination has moved off site in surface water.
6

7 Dr. Evans explained that during the study of off-site ETTP seeps, springs, and monitoring wells,
8 two contaminants were detected above comparison values (CVs). However, he said, these were
9 naturally occurring and not site-related.

10
11 Dr. Evans presented a map of the X-10 area. In his opinion, he said, a good number of off-site
12 areas that have been sampled for the White Oak Creek Valley Watershed. He read the following
13 summary points regarding Bethel Valley and Melton Valley:

- 14
15 • Very shallow water table with short flow—paths to surface water.
16
17 • The corehole 8 plume is intercepted, treated, and released under a National Pollutant
18 Discharge Elimination System (NPDES) permit to surface water.
19
20 • The hydrofracture process is expected to effectively and safely contain contamination.
21
22 • Groundwater discharges to surface water (White Oak Creek and Melton Branch).
23
24 • Contamination moves off site in surface water.
25

26 Dr. Evans presented a map of the Y-12 area, noting that a number of areas had been sampled. He
27 stated that this represented the only area with an off-site groundwater plume that has migrated
28 beyond the reservation boundary. He presented the following summary statements regarding the
29 Bear Creek Valley and UEFPC Watersheds:

- 30
31 • Groundwater contamination occurs in the Maynardville Limestone.
32
33 • Groundwater flows along strike (down the valley) beyond the ORR boundary into Union
34 Valley (where it leaves the reservation).
35
36 • Groundwater surfaces via seeps, springs, and diffuse discharge to streams.
37
38 • Site-related groundwater contamination has not been detected beyond Scarboro Creek.
39
40 • The nearest residential well is approximately 2.25 miles away.
41
42 • No exposure has occurred to the groundwater plume coming from Y-12.
43
44 o No residential drinking water wells are affected.
45
46 o There are a few wells, but most of the area is restricted.

1
2 o Dr. Evans expressed his belief that DOE has property restrictions and institutional
3 controls with property owners to prevent groundwater use in the area of the plume.

4
5 o The plume is undergoing treatment and remediation.
6

7 Dr. Evans presented a slide showing the off-site groundwater data that were used and evaluated
8 in the PHA. This included data from the Oak Ridge Environmental Information System (OREIS)
9 database and TDEC reports. It includes over 2,150 on-site and over 120 off-site monitoring
10 locations.

11
12 Community concerns that had been extracted from the Community Concerns Database were
13 presented. Dr. Evans indicated that concerns related to groundwater would be responded to and
14 included in the PHA. He read the community concerns.

- 15
- 16 • Is the groundwater helping to contribute to kidney cancer?
17
 - 18 • Past exposures to arsenic from groundwater may have resulted in high levels of arsenic in my
19 body.
20
 - 21 • Groundwater flows from the Y-12 Plant to Scarboro.
22
23 o According to Dr. Evans, this was not true.
24
 - 25 • What effect do the solid waste storage areas have on groundwater?
26
27 o In Dr. Evans' opinion, he said, they are contributing some to shallow groundwater
28 plumes, but not to groundwater exposure.
29
 - 30 • Concern that communities that share a limestone slab with a burial ground or dumping
31 ground might have contaminated groundwater.
32
33 o Dr. Evans said that there is contaminated groundwater in the K-25 area.
34
35 o All monitoring data, according to Dr. Evans, indicate that discharges are to Mitchell
36 Branch or Poplar Creek—not migrating under the Clinch River, which is not
37 hydrogeologically possible.
38

39 Dr. Evans read the following statements regarding residential wells:
40

- 41 • In 1996, TDEC initiated a residential well sampling program (these data were received and
42 included in the PHA).
43
- 44 • There were 71 residential wells identified southwest and within 2 miles of the ORR.
45
- 46 • A house-to-house survey in 1996 revealed no anecdotal problems with well water.

1
2 • Based on analytical results, TDEC reports “no discernible impact [to residential wells] from
3 the activities of DOE on the ORR.”

4
5 Regarding residential well data, ATSDR found that:

- 6
7 • Near ETTP: only one sample (boron, in 1998) exceeded the CV.
8
9 o All concurrent and subsequent samples were well below the CV.
10
11 o The detection could have been an analytical problem, but this is a naturally occurring
12 element.
13
14 • Near ORNL: no contaminants were detected above CVs.
15
16 • Near Y-12: no contaminants have been detected above CVs.
17

18 Data for seeps and springs were presented in tabular format, including the area, substance,
19 number of detects, samples detected above CVs, CVs, maximum concentrations, maximum
20 locations, and dates maximum concentrations were detected. Dr. Evans indicated that lead and
21 manganese were detected above CVs near ETTP, but in his opinion the detections were not that
22 elevated and could be a result of plumbing.
23

24 The following summary was presented for the seeps and springs data:

- 25
26 • Near ETTP: for both substances (lead and manganese), concurrent samples from an adjacent
27 well yielded concentrations below CVs.
28
29 • Near ORNL: thallium was not detected in this well 6 months earlier.
30
31 o One thallium detection is the only significant concentration off site.
32
33 o Subsequent sampling has not been conducted.
34
35 • Near Y-12: seeps and springs with elevated contaminant levels are within the known extent
36 of the East End volatile organic compound (EEVOC) plume.
37
38 o Subsequent sampling has not been conducted of seeps and springs.
39
40 o Much sampling of wells and plume has occurred as undergoing remediation.
41

42 The following summary points were presented:

- 43
44 • Groundwater at ORR is shallow with short flow paths to surface water
45

- 1 • Water bodies surrounding the site and subsurface geology prevent most off-site migration of
2 contaminant plumes.
- 3
- 4 • The only site-related off-site groundwater contamination is from Y-12 in Union Valley.
- 5
- 6 • No site-related contaminants have been detected in residential wells.
- 7
- 8 • Exposure to the off-site EEVOC plume is unlikely because of zoning regulations,
9 administrative controls, and the absence of residential wells.
- 10
- 11 • There is no public health hazard from exposure to contaminated groundwater emanating from
12 the ORR.
- 13

14 For more information, Dr. Evans suggested contacting Lt. LeCoultré at 404-498-0332 or
15 tlecoultr@cdc.gov.

16 **Discussion**

17
18 Mr. Washington asked whether underground explosions in this area could have caused fissures to
19 go even deeper. Dr. Evans said they could, but asked if such explosions had occurred on the
20 reservation—he was not aware any had taken place on site. Mr. Washington asked how far it
21 would have to be; Dr. Evans replied that it would have to be directly there.

22
23 Mr. Washington asked if these wells had only been sampled at one time. Dr. Evans expressed his
24 belief that there were two separate sampling events, but that some of the monitoring wells were
25 probably sampled on a semi-regular basis. Most of the off-site seeps and springs have been
26 sampled once or twice. According to Dr. Evans, there were two sampling episodes: one occurred
27 in the 1980s and one took place about 1995. He expressed his belief that TDEC conducted the
28 most recent study in 1995.

29
30 Mr. Washington asked if they had taken into consideration that they would drill a hole and pump
31 effluents down into one of these sites in particular. Dr. Evans asked whether he was referring to
32 the on-site hydrofracture zone; Mr. Washington said he was correct. Dr. Evans said that this was
33 in the deep aquifer, which was a completely different aquifer zone. Dr. Evans explained that
34 there are numerous sources of on-site contamination, but said the point was that most of that
35 contamination is not migrating as a groundwater flow to any off-site locations. He said that the
36 shallow burial sites are migrating in the shallow subsurface, discharging it into creeks. Mr.
37 Washington responded that they could not know that for sure, noting his opinion that the
38 pathway from Oak Ridge to Chattanooga is contaminated as a result of contamination from some
39 of these sites. Dr. Evans said that there was contamination in surface water, including the Clinch
40 River and Watts Bar. Though it might have originated in the shallow subsurface, it left the site as
41 surface water—not as groundwater. In his opinion, Mr. Washington said, this made no
42 difference. Dr. Evans agreed in terms of exposure, noting that this still needed to be evaluated,
43 and expressed his belief that surface water exposures were evaluated in the White Oak Creek
44 PHA.

1 Don Box asked whether the survey included the very large spring coming out from under the Y-
2 12 building. Dr. Evans said that he did not have the specifics of that spring: the state study only
3 looked at off-site springs and seeps. He expressed his belief that the spring had probably been
4 studied, but not in the context of off-site groundwater. According to Mr. Box, there was quite a
5 bit of mercury in the Y-12 building. Dr. Evans expressed no doubt about there being
6 contamination on site or about contamination having leached into groundwater; he said that the
7 question, however, was whether there is exposure to groundwater or springs or seeps.

8
9 Mr. Lewis asked if anything would be expected to change as a result of a tremor or light
10 earthquake. Dr. Evans said that no changes would be expected. He explained that these flow
11 paths are well established and topographically controlled. The rock becomes more impermeable
12 as it gets deeper. Therefore, he said, the rock wants to follow the line of least resistance from
13 high to low areas. From fractures, the flow will be downhill until it finds the nearest spring or
14 stream and then discharges.

15
16 Mr. Box questioned whether there were any known hydrofracture wells that transported
17 contaminants off site. Dr. Evans said he was not sure, but expressed his belief that this was a
18 pretty successful procedure. He indicated that some migration has occurred, but it would be in
19 much deeper systems than these flow systems. In his opinion, he said, nothing from that area has
20 left the site. According to Dr. Evans, the rate of migration is much smaller in deeper areas
21 because the fractures are much less and the rock is relatively impermeable. Mr. Manley asked
22 why the hydrofracture procedure was discontinued. Dr. Evans answered that EPA changed its
23 rule regarding subsurface disposal because it did not constitute treatment. Even though the waste
24 was sequestered and isolated, according to Dr. Evans, EPA declared that this was not actually
25 treatment. Therefore, Dr. Evans said, there was still a potential for migration, and it was being
26 monitored. Mr. Brooks expressed his belief that it was being treated and it was being put into
27 grout.

28
29 According to Ms. Adkins, two geologists had told her that Dr. Evans's comments about the
30 yellow slab (referring to her map) were correct for that slab. However, based on conversations
31 with these experts, she said that the bright pink slab on her map (Chickamauga Slab) is
32 extremely porous and karst. She said she was told that there are underground drainage channels
33 (deep in the bottom of the Chickamauga Slab) that run where things were buried at K-25. She
34 expressed her belief that the slab is extremely porous and any chemicals and acids (e.g., nitric
35 and hydrochloric) easily erode deep into its bedrock. In her opinion, she said, it was not shallow
36 as Dr. Evans had described. Dr. Evans asked Ms. Adkins to be mindful that she was referring to
37 a two-dimensional picture and depth (vertical dimension) is what truly matters on the
38 Chickamauga Limestone. He said that she was correct: the limestone is susceptible to dissolution
39 by acids. However, he said, they are not finding these contaminants in the monitoring wells,
40 which suggests that they are not migrating in that direction but discharging to surface streams.

41
42 Ms. Adkins asked whom Dr. Evans was referring to. He said that TDEC, DOE and its contractor
43 researchers, USGS, and ATSDR have agreed on this water flow conceptual model. According to
44 Ms. Adkins, people have told her that when they went to sample they were told where to test. In
45 her opinion, they were not allowed to sample in areas most likely to contain toxic damage. In the
46 last 2 weeks, she said, she has heard 10 times that people could not test where they asked to test,

1 but only where they were told they could test. She expressed her belief that everything comes out
2 fine in water tests when DOE is involved, and she said people discussed methods used to ensure
3 that the test results were fine. In her opinion, they could not count on accuracy when DOE has
4 been involved because they have everything to lose.

5
6 Dr. Evans said that multiple organizations have been involved in work around the reservation,
7 including TDEC, USGS, and other entities. He explained that there are always limitations on
8 where you could drill wells based on property ownership, where you can find water, and other
9 factors. In his opinion, there are ways used to pick locations that are entirely appropriate.
10 However, he could not say whether these represented biases.

11
12 Tim Joseph expressed an interest in having any information Ms. Adkins could provide regarding
13 these statements that people are making. He said that he would investigate this issue and asked
14 her to provide him with any papers and statements that she had. For a long time, he said, DOE
15 sampled residential wells on both sides of the river for anyone who wanted their wells sampled.
16 Jeff Hill indicated that they had discussed this issue and some new sampling that was being done
17 on new wells that were drilled by the river. He asked whether the information was available. Dr.
18 Joseph answered that he had not followed up yet on this issue, but asked Mr. Hill to e-mail him
19 as a reminder to follow up. Dr. Evans said that ATSDR has typically received large data dumps
20 from the OREIS database, and could not confirm whether data from those wells would be
21 included. Mr. Hill said that they were being drilled a few months ago. Dr. Joseph said he did not
22 know the time it took for data to be entered into OREIS, but stated that data are automatically
23 dumped into OREIS after quality assurance/quality control (QA/QC). As done at other sites, Dr.
24 Evans suggested, they should go back to see if new data are available that would contradict or
25 supplement what has already been done.

26
27 Dr. Davidson pointed out that the PHA will be sent to the EEWG. She asked Ms. Adkins to
28 ensure that her comments were submitted to Tony Malinauskas, Work Group Chair, for inclusion
29 in the comments that will be sent to ORRHES.

30
31 Ms. Sonnenburg asked if she could send Dr. Joseph a list of the wells that had been avoided so
32 he could make sure that were tested. Dr. Joseph answered that he could not make sure that the
33 wells were tested in the future, but he could see if they had been tested in the past. He said that
34 he could also give Ms. Adkins or any other resident information on how to get their wells tested.
35 He explained that TDEC—not DOE—tests residential wells. Dr. Joseph asked if Ms. Adkins had
36 contacted TDEC as he had previously suggested to have her neighborhood wells tested. Ms.
37 Adkins said that she had not. In his opinion, Dr. Joseph said, she needed to do this—it is a free
38 service.

39
40 Ms. Adkins said that they needed to be careful where they tested. She said she was talking to a
41 geologist who said that they needed to test in the meander of a creek instead of outside because it
42 erodes outside and deposits on the inside. Dr. Joseph said that those comments concerned surface
43 water, not groundwater. Dr. Evans said that groundwater samples could be collected from the
44 tap, but noted that plumbing can contribute a lot of problems, such as lead detections as an
45 artifact of plumbing.

1 Mr. Lewis asked if anyone could dig and pump a well for water without having it tested. Mr.
2 Nwangwa indicated that TDEC has a program to test all wells. Dr. Joseph expressed his belief
3 that this was not required: he said that anyone could put a well on his or her property and not
4 have the well tested before using it for drinking water. Nonetheless, he said, the state does offer
5 free services. As he understood it, Dr. Evans said, the State of Tennessee only requires that a
6 licensed driller drill the wells and that a driller's log of the well be submitted to TDEC. Dr.
7 Joseph said that any person could dig a well. Ms. Sonnenburg questioned why DOE would not
8 test the well. Dr. Joseph indicated that DOE used to have a testing program, but that TDEC now
9 handled this sampling, adding that there was no need to have duplication of efforts.

10
11 Ms. Vowell clarified that the groundwater division of TDOH will sample, but will not check for
12 chemicals. Dr. Evans confirmed that only biological samples were collected, and she said that
13 this was correct. Mr. Lewis asked if TDEC could provide a summary on its program so that they
14 would not need to return to this issue again. Dr. Evans indicated that all of this information was
15 presented on TDEC's Web site, which could be linked to from the ORRHES Web site, and
16 provided information on the state's programs for groundwater testing, water management, and
17 other services. Mr. Hanley said that TDEC presented this information a few years ago. Dr.
18 Davidson suggested having the EEWG evaluate this issue.

19
20 Dr. Cember asked how the corehole 8 plume had been treated. Dr. Evans said he believed a
21 carbon filter was used, but he was not completely sure. Dr. Cember asked how wide the plume
22 was. To his knowledge, Dr. Evans said, this probably followed standard groundwater
23 remediation practice, where a) a well is installed and pumped, b) the water is run through some
24 carbon filters, c) it is certified that the water is clean, d) monitoring treatment standards take
25 place, and e) the water is put back into surface water. Dr. Cember asked about the fraction of the
26 plume that would be pumped out through this method. Dr. Evans answered that it varies by each
27 site; in this case, it could be precise if the correct fracture was found. Dr. Craig expressed his
28 belief that a French drain was used. According to Dr. Evans, intercepting it before it becomes
29 surface water would be more logical.

30
31 Regarding the Bethel Valley and Melton Valley summary, Ms. Adkins expressed her belief that
32 the third statement was not true for the Chickamauga Slab because the hydrofracture area is in
33 shale. Dr. Evans said that it is not in surface limestones. Ms. Adkins expressed her belief that it is
34 extremely porous under the Chickamauga and contaminants were likely to sink down, which in
35 her opinion contradicted Dr. Evans' comments regarding short pathways. As he understood it,
36 Mr. Brooks said, hydrofracture wells terminate in shale, thereby remaining geologically stable
37 for a few million years. Dr. Evans agreed, stating that it would remain stable longer than their
38 lifetimes. According to Dr. Evans, shales are typically pretty tight, which was why they had to be
39 fractured to get porosity down there. In his opinion, Mr. Brooks said, if there had been enough
40 fresh water going through to move the system, it would have removed the salt, which was not
41 consistent with poor retention.

42
43 Dr. Craig asked whether the groundwater plume leaving Y-12 contained trichloroethylene
44 (TCE). Dr. Evans said that the plume primarily contained TCE and its breakdown products. In
45 his opinion, he said, the plume had various contaminants, though most were not at really high

1 levels. He noted that the plume also had dense nonaqueous-phase liquid (DNAPL), a product that
2 is present under portions of Y-12.

3
4 Mr. Richards asked if the residential wells were up in Union Valley; Dr. Evans said this was
5 correct.

6
7 Mr. Washington asked whether Dr. Evans was familiar with the S-3 ponds at Y-12 and the
8 remediation of them. Dr. Evans replied that he was not intimately familiar with them, but said
9 that remediation is ongoing and had knowledge of the general area of the off-site groundwater
10 plume.

11
12 Dr. Davidson asked if Dr. Evans was stating that the limestone slab is bounded by the Clinch
13 River. Dr. Evans said this was correct.

14
15 In discussions of the seeps and spring data, Dr. Cember asked where the manganese was from.
16 Dr. Evans said that it was naturally occurring. In Dr. Cember's opinion, some of the manganese
17 concentrations were high. He said that volitional tremors can be caused by manganese as well as
18 mercury, adding that people develop Parkinson's disease spontaneously. He questioned how they
19 could separate the effects of naturally occurring Parkinson's disease from the effects caused by
20 mercury and manganese. Dr. Evans did not believe this was conversant with data underlying the
21 CVs; he added that all of the toxicological profiles discuss this information. He said that the
22 standard was 500 ppb, which goes back to the dose-response relationship, and that this CV was
23 on the conservative side of the dose-response curve. Dr. Cember asked if CVs were based on
24 exposure to only that agent, and asked if there was exposure to several agents. In his opinion, Dr.
25 Evans said, this was interesting to know since the agents have the same mode of action. Dr.
26 Cember said they are almost the same, the similarities related to dopamine receptors and similar
27 factors. Dr. Evans noted that this should be kept in mind.

28
29 Ms. Smith asked for a definition of CVs. Dr. Evans explained that these are health comparison
30 values used as a standard for determining contamination. He noted that ATSDR has to determine
31 whether something represents a health threat, and CVs are used as preliminary screening values.
32 He indicated that they were similar to the maximum contaminant levels (MCLs) used by EPA,
33 noting that they were drinking water standards of various sorts.

34
35 Mr. Lewis asked Dr. Evans to project a sheet containing concerns from a document prepared by
36 The RadioActivist Campaign (TRAC). Mr. Lewis explained that this document was distributed
37 in the community and discussed groundwater. In his opinion, he said, whether or not Dr. Evans
38 believes the information is not the issue. He asked Dr. Evans to read the following regarding the
39 groundwater/surface water pathway, described by the author as referring to a contaminated
40 stream in Scarboro: "Scarboro residents expressed frustration that their concerns for
41 contaminated water seeping from ORR into Scarboro had not been addressed. TRAC compared
42 maps of DOE, TDEC, and EPA ... sampling locations with the locations of community
43 concerns. Residents pointed to a stream emerging from the north side of Y-12, flowing north
44 along the east side of South Fisk Avenue, and joining East Fork Poplar Creek west of the
45 intersection of Tusculum Drive and East Tulsa Road. That stream is shown on the 'Oak Ridge &
46 Anderson County, TN street map.' TRAC collected Sample 6 from the stream to address this

1 specific concern. Results were positive.” Dr. Evans said that if Mr. Lewis believed this sampling,
2 then he had some land he wanted to sell him. Mr. Lewis explained that he was not pointing out
3 whether or not the report was accurate. He said that this is a publication that is out there in the
4 community. According to Mr. Lewis, this was a concern raised by someone, and added that he is
5 not laughing at the issue. He stated that it is a given—this is a concern that has spread through
6 the community. Mr. Lewis said he did not find this concern in the database and expressed an
7 interest in seeing this type of issue addressed. Dr. Davidson said that this organization was
8 coming to present at a work group meeting. Dr. Evans agreed that this concern should be in the
9 database.

10
11 Mr. Lewis said that these types of issues and comments are in the newspaper. In his opinion, Mr.
12 Lewis said, regardless of whether they agree with the sampling conducted in this study, it might
13 carry more credibility within the community. Mr. Lewis expressed concern that he repeatedly
14 brings this up; when a person identifies an issue, he said, at a minimum the agency needs to
15 address it. Mr. Hanley explained that Lieutenant LeCoultre received the document a few weeks
16 ago, and is planning to address it in the community concerns section of the document by using a
17 diagram or figure. Mr. Hanley pointed out that this was something that occurred recently, and
18 Lieutenant LeCoultre is already responding. According to Mr. Lewis, some of these issues were
19 voiced by community members in meetings and captured in newspapers 3, 4, and 5 years ago.
20 Mr. Lewis expressed his belief that to win people’s trust, they had to treat people’s concerns as if
21 they were reasonable and valid and address them in a timely manner. If they did not do this, he
22 said, then these types of things are released first. In her opinion, Dr. Davidson said, the best way
23 to address these issues was by having the group that prepared the report come and talk to the
24 community. She indicated that they were trying to do this and that they wanted the group to
25 come to town and answer the community’s questions. Mr. Washington indicated that they could
26 address the concerns even if they did not come here. Dr. Davidson said she understood this, but
27 that they were trying to also go one step beyond. Mr. Lewis asked if she missed the point. Dr.
28 Davidson answered that she did not miss the point; they said that they would address the issue,
29 and were also trying to get the group to come here.

30
31 Dr. Evans said that they have been discussing seepage into the Clinch River. From his
32 perspective, he said, it is difficult to address an unattributed citizen concern—he was not sure
33 how to respond on a technical basis to this other than through a paper. He expressed an interest
34 in hearing from the community members instead of through a second-hand, non-peer-reviewed
35 paper. In his opinion, Mr. David Johnson said, this related to the element of trust: if the
36 community does not participate or trust them, then they needed to go to the community to regain
37 its trust and capture the public’s concerns (regardless of what they are).

38
39 Dr. Evans asked how many public availability sessions had been held in the community to
40 communicate directly on a “retail”—not “wholesale”—level. Mr. Hanley said that ATSDR held
41 one and the state had some prior to that. Dr. Evans suggested these as a means for ATSDR to
42 interact directly with the community instead of through these types of unattributed documents or
43 other media. Mr. David Johnson said that the process of bureaucracy is not people-friendly. In
44 his opinion, he said, grassroots personalities might take offense at dealing in this manner and
45 prefer interfacing with personalities.

1 Ms. Smith said she attended a public meeting where TRAC presented its results. According to
2 Ms. Smith, the researchers did not represent their work as the be-all and end-all; rather, the
3 message was that Scarboro community members had pointed to this particular location as an area
4 of concern, and therefore it was sampled. She expressed her belief that someone needed to take
5 this as a flag and follow up at this location. She stated that TDEC had told her that it had data
6 from the creek that could be shared, but had not supplied the data yet. She suggested reviewing
7 these data instead of bringing TRAC back, and conducting followup because this one area was
8 identified as one that people had expressed concerns about.

9
10 Dr. Evans expressed his belief that sampling had probably already been conducted at the creek.
11 According to Mr. Manley, the creek had been sampled twice: Florida A&M University (FAMU)
12 conducted the first sampling, and EPA conducted a second sampling to verify FAMU's results.
13 He expressed his belief that plenty of data should be available.

14
15 Dr. Creasia said he had no familiarity with the waterflows in Oak Ridge, but asked whether
16 anyone had tested in any of the creeks or wells around the Oak Ridge Country Club. Dr. Evans
17 asked if this was northwest of Y-12; Dr. Craig said this was correct, adding that it was very close
18 to areas that have been sampled a lot, but he was not sure if it itself had been sampled. Dr. Evans
19 said he would have to refer this question to Lt. LeCoultre, since it dealt with specific locations
20 where on-site sampling has occurred.

21
22 In the Northeast, according to Dr. Creasia, a common practice for removing contaminants is to
23 pump them into fissures or drop them off on back roads. He asked whether similar problems had
24 been reported here. Ms. Adkins said she had been told many stories regarding people bringing
25 truckloads of waste and dumping the materials in various places; she said she had markings of
26 these areas on her map to show where things had been buried. According to Ms. Adkins,
27 thousands of tubes of picric acid were dumped into the edge of the Clinch River and exploded
28 there. In her opinion, she said, contaminants are everywhere around there. Dr. Creasia indicated
29 that this could be a source of contamination rather than the plants. In terms of residential wells,
30 Dr. Evans said, contaminants detected are commonly occurring natural elements. Dr. Creasia
31 said he was referring to other contaminants, such as PCBs, that are especially common in the
32 Northeast. According to Mr. Brooks, the flow of contaminated water from Y-12 to Scarboro had
33 to be considered; the contaminated water would have to flow from the plant, through the hill, and
34 at the same level without any change in altitude. Mr. Hanley indicated that Lt. LeCoultre was
35 preparing a map of elevations to convey this point.

36
37 Ms. Adkins asked Dr. Evans to return to the slide containing the sources of off-site groundwater
38 data. In her opinion, she said, this is a significant problem. She complimented Dr. Evans as a
39 presenter and stated that Mr. Hanley, Dr. Taylor, and Ms. Horton were great people from
40 ATSDR in her opinion. But, she said, they are a joke in the community for reasons such as the
41 list of sources. She expressed concern that they laugh at studies conducted by anyone without a
42 DOE connection. She said she did not know the influence DOE has had on TDEC monitoring,
43 but her sources have told her that DOE tells TDEC where it may and may not sample. In her
44 opinion, she said, this was why the public did not trust them. She asked the group to look at all of
45 the sources being used for information, saying that they were obtaining information from the
46 people who polluted their environment yet they were still treating these as valid sources. She

1 expressed concern that many people laughed at the report brought in by Mr. Lewis, but noted
2 that it was an organization other than DOE conducting a study.

3
4 According to Ms. Adkins, many people have told her details about how they doctored tests. For
5 instance, Ms. Adkins said individuals told her that they knew when to flush, to add chemicals,
6 and other techniques to use prior to testing. She expressed concern that records have been lost.
7 She said she had been told about a study on K-25 workers' excrement: the results indicating the
8 amounts of cesium and strontium found, she was told, were not released. In her opinion, she said,
9 DOE keeps many secrets and no one other than DOE-related personnel trusts the department.
10 She expressed concern that ATSDR was using these data as a basis for the PHA.

11
12 Dr. Joseph said that he did not necessarily expect Ms. Adkins to trust him or DOE. However, he
13 explained, he has been involved with on-site groundwater, surface water, and biota sampling for
14 17 years, including collecting samples in the field and conducting QA/QC of the samples.
15 According to Dr. Joseph, he has never seen anything except purely honest scientists who would
16 never risk their profession; he has never been associated with someone he did not trust. He said
17 that this would not change her mind, but that he was sure that these are good data. Ms. Adkins
18 indicated that things might have occurred differently before he was there. Dr. Joseph responded
19 that these types of activities would have not changed because he started to work there. Ms.
20 Adkins said she had a lot of stories from people who have no reason to lie.

21
22 Dr. Evans said he agreed with many of Ms. Adkins's comments, noting that people could come
23 up with whatever sample they wanted if they knew what to do. However, he continued, the
24 sources being used have undergone different levels of peer review, including reviews by EPA,
25 the state, and ATSDR. According to Dr. Evans, the purpose of peer review is to look for obvious
26 indicators of bias. He noted that she was contending that the DOE reports are biased and the
27 TRAC study is not, but explained that the reason he had laughed at the report was that TRAC
28 would not submit its materials to the same type of review process that the sources being used in
29 the PHA have undergone. In her opinion, Ms. Adkins said, if the initial data are no good, then it
30 will not matter who conducts the review.

31
32 Mr. Hill explained that K-25 workers in the Paper, Allied-Industrial, Chemical and Energy
33 (PACE) Workers International Union had expressed a similar concern about DOE being the only
34 agency that was checking their drinking water. According to Mr. Hill, the PACE Union asked
35 EPA to test their drinking water and the agency prepared a full report to convey its findings. Mr.
36 Hanley noted that other organizations are part of these efforts. For example, DOE had brought
37 FAMU into Scarboro, which contracted with Florida State University (FSU) and Florida
38 Department of Environmental Protection (FDEP). Mr. Hanley asked Mr. Richards about EPA
39 oversight of CERCLA sampling and the remedial investigation/feasibility study (RI/FS) data that
40 are used.

41
42 Regarding EPA oversight, Mr. Richards said that EPA commonly conducts split or duplicate
43 samples at any Superfund site. He could not, however, answer where TDEC specifically took
44 samples, and said he agreed that this should be looked at. He said he welcomed independent
45 sources, but that this report discredits itself by a) claiming that radium comes from nuclear
46 weapons, b) stating that radium at 0.5 picocuries per gram (pCi/g) is not natural, and c) misusing

1 MCLs. He expressed his belief that these factors cause the report to lose all credibility. He
2 indicated that he had hopes about this independent review, but expressed his opinion that the
3 authors obviously knew nothing about the basics of health physics. In his opinion, he said, the
4 report destroyed everything that it tried to do. Though its authors might have legitimately gone to
5 these locations, the report's incorrect application of MCLs to sediments and other factors
6 destroyed the entire report in his opinion.

7
8 Mr. Lewis expressed his belief that the approach used by Mr. Richards to address this issue and
9 respond to the report brings credibility, which is helpful for the community. Mr. Richards replied
10 that Mr. Crane had asked him to address the report, but said he was not sure how the agency
11 would respond,. In his opinion, Mr. Lewis said, the Scarboro community has been waiting for a
12 response for the past 4 or 5 years, since FAMU conducted its sampling. He said that there is a
13 tendency to look at the last person who did something.

14
15 Dr. Davidson asked Dr. Evans whether the following statement was true: "The significance of
16 looking at contaminated groundwater is that it has the potential to become surface water or to be
17 used as well water." Dr. Evans said that was correct. Dr. Davidson questioned if there were any
18 other problems associated with contaminated groundwater; Dr. Evans explained that
19 volatilization of could occur depending on the contamination present. For instance, TCE could
20 volatilize in the area of the TCE plume. Dr. Davidson asked if he was referring to toxic vapors.
21 He said that he was, but that it would take a unique set of conditions, which would not really
22 occur in this area, to produce an air problem. Enclosed spaces, such as basements, could be a
23 significant issue in areas that did have these problems.

24
25 Mr. Lewis asked if the presentation had included a clear definition of the differences between
26 surface water and groundwater. Dr. Evans said he had not seen one. Mr. Lewis said that they
27 should begin with definitions as a reference point. Dr. Evans agreed, noting that these definitions
28 should appear in the beginning of the PHA, during the discussion of the scope of the problem.
29 According to Dr. Joseph, it was important to note that the media changes: going from
30 groundwater to surface water and from surface water to groundwater. He indicated that this was
31 simply based on surface water being above the surface and groundwater being below the surface.

32
33 Mr. Washington asked about the use of innocuous dye. Dr. Evans said he was aware of these dye
34 trace studies.

35
36 Dr. Malmquist indicated that he had run a landfill in Roane County for many years. He said that
37 monitoring wells were flushed with distilled water several times prior to taking samples to ensure
38 a proper sample. According to Dr. Malmquist, the landfill had been accused of contaminating
39 wells all around the system. When they hired TDEC or someone to sample the wells, the wells
40 were flushed first. However, according to Dr. Malmquist, no problems were found regarding the
41 leachate at the landfill or the monitoring procedures used. He explained that usually
42 contamination was found from the site itself rather than the landfill, such as a septic tank
43 draining into the well or other issues.

1
2
3 **Health Outcome Data Work Group**

4 Dr. Malmquist asked Mr. Hanley for an update on the Cancer Incidence Assessment (CIA). Mr.
5 Hanley provided the history of the request for this assessment, stating that a recommendation
6 was made in April 2003. In August 2003, Dr. Malmquist reported what Dee Williamson of DHS
7 had committed to looking at: cancer incidence data from the Tennessee Cancer Registry (TCR)
8 from 1990 through 1996 for 26 different cancers. She was to evaluate the selected eight counties
9 and 49 census tract geographic areas and compare them to state rates while adjusting for age and
10 gender. Last year, ATSDR found that the state had data to 2000 and data on about 40 different
11 cancers. Since this time, Ms. Williamson had received the new data, and there has also been
12 transition within the registry.
13

14 As of 2005, Mr. Hanley said, Ms. Williamson has the cancer incidence data for the eight counties
15 he presented a map outlining the areas that would be included. The data could be evaluated and a
16 report could be completed for internal review by July 2005, with a public comment version
17 probably released in the fall for these eight counties. For the rural counties within the census
18 tract component of this geographic area of interest, however, there are problems with the census
19 data. For example, 75% of the cancer cases in the registry only have a post office (P.O.) box
20 number; there is no address (geolocator) to identify the census tract that the person lives in.
21 Therefore, someone with a P.O. box in Ten Mile could actually live in another census tract.
22 Because they do not know exactly where someone lives, Mr. Hanley said, misclassification
23 would result—cases could be put into the wrong census tracts. According to Mr. Hanley,
24 addresses with P.O. boxes represented about 9% of cancer cases in Loudon County, 9% in Knox
25 County, and about 27% in Roane County.
26

27 Dr. Craig indicated that Roane County would not matter. Mr. Hanley said this was correct
28 because all of Roane and Anderson Counties are included in the study; they do not need to be
29 segmented because the study will include all of the cases. Mr. Hanley noted that Rhea and
30 Morgan Counties are also rural and have a high number of P.O. boxes. It needs to be determined
31 where these people live—there are hundreds of cases of this problem.
32

33 Dr. Craig expressed his belief that people were not likely to live too far from their P.O. boxes.
34 He asked whether zip codes could be used. Mr. Hanley was not sure. Dr. Malmquist indicated
35 that he has a P.O. box in Kingston, but lives outside Kingston. He explained that people could
36 live in one census tract and have a P.O. box in a different tract. If someone had a P.O. box in
37 Kingston, he said, he or she could live almost from Knox County to Rockwood because of the
38 rural routes. In his opinion, he said, going by census tracts could cause a significant problem
39 regarding the rural counties.
40

41 Mr. Lewis asked the percent of P.O. boxes versus those with full addresses within a tract. Mr.
42 Lewis answered that 75% of the cases of cancer in Meigs County have P.O. boxes; only 25% of
43 them have actual addresses.
44

45 Mr. Hanley explained that when Ms. Williamson committed to evaluating data by census tracts,
46 she had been familiar with conducting this type of evaluation in Memphis, Tennessee. Though

1 unlike these rural counties, Memphis is a metropolitan area with a high number of physical
2 addresses. Mr. Hanley said that they could work with some of the numbers, such as those for
3 Knox County (only had P.O. boxes for about 10% of its addresses). For the counties with large
4 percentages of P.O. boxes, however, this would cause significant misclassification. Dr. Craig
5 asked for the solution; Mr. Hanley said that it was to use the data for the eight counties. Dr.
6 Malmquist clarified that it would be for each individual county and then the eight counties
7 combined.

8
9 Mr. Lewis stated that he had a limited knowledge of the various P.O. boxes, but asked whether
10 people typically had boxes close to their residences. Mr. Hanley indicated that there are only
11 three census tracts in Meigs County because of its small population. Mr. Lewis said he
12 understood this, but asked whether the P.O. box areas would be covered with the tracts they
13 included. Mr. Hill expressed his belief that Meigs County would be easy to decipher because
14 there is only one P.O. box located in Ten Mile within Meigs County. Mr. Hanley referred to the
15 map, asking how many people would use the P.O. box in Ten Mile but live below the census
16 tract. Mr. Hill replied that it was only about 4 or 5 miles below the county line. Dr. Malmquist
17 stated that there are people in Roane County with P.O. boxes listed in Ten Mile. Mr. Hill
18 expressed his belief that they could correctly estimate the census tracts for about 90% of the P.O.
19 boxes in Meigs County. Mr. Hanley asked about Rhea and Morgan Counties. Mr. Lewis
20 expressed his belief that they could obtain an appropriate estimate if they determined where the
21 post offices were located.

22
23 Dr. Evans said that because these were relatively rare cases, misclassifying cases might cause an
24 astronomical relative increase in one area and decrease in another that would significantly
25 confound the data. Ms. Galloway said that there were also complications in rural areas where
26 people use a P.O. box across the county line.

27
28 Dr. Davidson asked if they could include all of Meigs, Rhea, and Morgan Counties. In his
29 opinion, Mr. Hill said, this would dilute the data by including people they were not concerned
30 about. Dr. Davidson expressed her belief that they had drawn such a fine line about areas they
31 were and were not going to consider, but someone could live only 10 feet away. Mr. Hill
32 indicated that they had selected the areas based on the river, including areas where the lake was
33 not used for recreation or heavily fished. When they divided the boundaries in Meigs County, Dr.
34 Malmquist said, they had looked for a natural boundary and took Highway 68 across the dam to
35 Spring City. He noted that if they looked at the census boundary, they had not taken the
36 boundary by census tract. Mr. Hanley recalled that they had not wanted to include Knox County
37 because this would draw a large number of people who were not exposed.

38
39 Dr. Craig suggested using Meigs, Rhea, and Morgan Counties in their entirety, but using census
40 tracts for the remaining areas. Dr. Malmquist said that this could work. Mr. Hanley asked about
41 Blount County: not familiar with the area, he asked how to proceed if there was a high percent of
42 P.O. boxes for that county as well. Mr. Hill indicated that Blount County was upstream, so
43 contamination would not flow up to Knoxville. Dr. Malmquist explained that they had included
44 Blount County because there was an air plume that could go down into that area. Mr. Hanley
45 indicated that this was an iodine plume. He asked whether the group want to use the entire
46 county or remove it altogether if there was a high percentage of P.O. boxes. Dr. Malmquist said

1 he would rather cut it out. In her opinion, Dr. Davidson said, removing the county would cause
2 less error than including it.

3
4 Mr. Hill asked about the number of cases in Meigs County. Mr. Hanley had not seen the
5 pertinent data. He explained that statisticians and Ms. Williamson had presented the problem to
6 him, and he was delegated to discuss the information with the ORRHES.

7
8 Ms. Vowell said there would be very small numbers of cancer cases in the smaller counties. Mr.
9 Hanley indicated that Ms. Williamson has a limit of cases she will not analyze; Dr. Taylor said
10 the limit was five or less. Dr. Malmquist asked Ms. Vowell if it made more sense to include the
11 entirety of smaller counties such as Meigs and Rhea. In her opinion, Ms. Vowell said, this would
12 be better because of such counties' small populations. She could speak for Morgan County, most
13 of whose population she said would be covered from Oliver Springs to Wartburg. She said there
14 were not many people after leaving Wartburg, so including the entire county would not be
15 adding a large population.

16
17 According to Dr. Malmquist, Meigs County has a population of 9,500; Morgan County has a
18 population of 18,000; and Rhea County has a population of 27,000. He expressed his belief that
19 they were not referring to a large population, indicating that the number of cancer cases would be
20 statistically small over the entire county. Ms. Vowell said this was true, particularly if there was
21 a breakdown into gender and other categories.

22
23 In his opinion, Mr. Lewis said, this information should not be difficult to obtain. He explained
24 that he had attended the meeting on the Loudon County report. Initially, he said, they had looked
25 at entire counties; then the chair of that committee suggested delving deeper to determine what
26 was occurring in various communities. Mr. Lewis said that the state's response on the videotape
27 indicated that it could do a study in 5 or 6 months, using information similar to what they were
28 trying to obtain. In his opinion, he said, Loudon County was taking its study to this level, but did
29 not seem to have any problems associated with obtaining the same type of data. He said that they
30 had talked about census tracts, voting precincts, and other types of information, but that the state
31 had indicated that it could complete the study by looking at those areas.

32
33 In his opinion, Mr. Lewis said, Bonnie Bashor (TDOH's Director of Environmental
34 Epidemiology) made an interesting statement, saying that she would meet the needs of the
35 people. He said that available HRSA data on Loudon and Franklin Counties could have helped
36 make this decision. Mr. Hanley expressed an interest in having a copy of this information. Mr.
37 Lewis suggested reviewing it as a work group and making a call. Mr. Hanley said he would
38 speak with the epidemiologist who worked on the Loudon County report. To his knowledge, he
39 said, the Loudon County report used crude rates, whereas the CIA is adjusting for age and gender
40 and using standardized incidence ratios. These are different types of analyses, but the differences
41 would be explained within the CIA.

42
43 In his opinion, Mr. Lewis said, the Loudon County report was driven by health issues and
44 responded to public requests, questions, and needs. He expressed his belief that this report would
45 help their community. Mr. Hanley indicated that the CIA would compare rates of cancer for the
46 eight counties to the state average, and also compare rates within the geographic area to the state

1 averages. Mr. Lewis expressed his concern that the earlier meeting's minutes had not captured
2 enough detail about the discussion of plumes and expectations for this recommendation. In his
3 opinion, he said, they were trying to satisfy the needs of the public where it was practical. He
4 expressed concern that ORRHES had not seen a formal program outlining the plans for this
5 evaluation by plumes. He said he had read an e-mail from Mr. Hanley indicating that he would
6 explain these details, but asked whether ATSDR planned to look at these data by plume, noting
7 that they had drawn a map based on the plumes. If particular contamination was detected in a
8 plume, he asked, did ATSDR plan to put these census tracts together—and if not, why not? In his
9 opinion, doing so would provide a general idea of what is happening in these particular areas.

10
11 Dr. Davidson said she did not recall this being part of the recommendation. Mr. Lewis did not
12 disagree with her, but noted that a discussion had been held on this topic. He expressed concern
13 that they might not formulate the most detailed recommendations to convey their points, but said
14 this had been discussed and suggested that they keep in mind the spirit in which the
15 recommendation was prepared. Dr. Cibulas explained that he had had some discussions with Ms.
16 Williamson and her Division Director, in which they indicated that they were still willing to do
17 that work. However, he asked for the approval of the committee to move ahead with evaluating
18 the eight counties—work which could be quickly turned around. According to Dr. Cibulas, DHS
19 had identified problems with conducting a more focused plume analysis, some of them related to
20 the geocoding of individuals. This would need to be worked out with the state, he said, but
21 ATSDR is still willing to do this. He said he had heard one proposal about including the entire
22 county for areas with geocoding issues, noting that they would discuss this with the state and
23 epidemiologists to ensure its feasibility. He added that ATSDR was definitely willing to do what
24 could be done.

25
26 Mr. Hanley presented the most recent diagram of the PHA process. Mr. Lewis said that he
27 recalled this diagram very well and said he understood the latest figure, but asked about ATSDR
28 grandfathering what had been started with them. Mr. Hanley noted that ATSDR is committed to
29 complete what it promised as best it can. He explained that there are criteria regarding health
30 outcome data for PHAs and went through the diagram showing why ATSDR will and will not
31 conduct additional health outcome analysis. ATSDR evaluates the following exposure-driven
32 criteria to make this determination: a) completed pathways, b) time of exposure, c) exposed
33 population, d) sufficient exposure level, e) latency periods, f) geographic units, and other criteria
34 that follow. This is documented in the PHAs.

35
36 Mr. Lewis was not in disagreement, but said he was not sure whether the Loudon County report
37 was prepared according to the revised version of the *Public Health Assessment Guidance*
38 *Manual*. According to Mr. Lewis, the Loudon County report also evaluated other diseases and
39 captured health outcome data. He commented on two sections that he considered to be
40 particularly good: a) a section addressing health outcome data related to various diseases
41 associated with particular issues and b) a needs assessment section that included a survey of the
42 community. He expressed his amazement that this could be accomplished under the ATSDR
43 letterhead. Mr. Hanley said that this report was exposure driven, and expressed his belief that
44 TDEC had identified areas for further evaluation. Based on these exposures, they looked at
45 additional health outcome data.

1 Mr. Lewis indicated that the Loudon County group had a physician and nurse on board.
2 According to Mr. Lewis, many health issues being raised were being placed on the top of their
3 list. In his opinion, he said, their own leadership is not pushing health issues. He expressed his
4 belief that health issues raised by the physician and nurse on the Loudon County board (from
5 what he could surmise) carried a lot of weight, which focused their effort on health outcome
6 data. In his opinion, he said, this is very helpful to people within the community regardless of
7 whether something is statistically correct. He said people needed the information and ATSDR
8 had to explain it. He expressed appreciation for Dr. Cibulas's comments, noting that they needed
9 to ensure that their activities serve the needs of the community.

10
11 Dr. Malmquist had to leave, and moved to accept Dr. Cibulas's proposal to move forward with
12 the cancer incidence data for the eight counties, while continuing to work on the census tracts
13 and plumes, with ATSDR presenting the information to them as soon as possible.

14
15 Mr. Lewis agreed with moving forward, but suggested asking ATSDR for the following three
16 reports:

- 17 • All counties individually and added together.
- 18 • All of Rhea, Meigs, and Morgan Counties; parts of Loudon County; all of Anderson County.
- 19 • All counties disregarding P.O. boxes.

20
21
22
23
24 Dr. Malmquist agreed to remove Blount County because it was a small area and difficult to do,
25 but recommended coming back to look at plumes. He expressed concern that they have waited
26 over 2 years for this report, and the report might not be published until 2007 if they wait for this
27 additional information. In his opinion, Mr. Hill said, it appeared that ATSDR could provide these
28 reports based on the information the agency already has. He expressed his belief that this would
29 give ATSDR an opportunity to make and defend a decision.

30
31 Mr. Hanley asked Mr. Hill to repeat the third report he suggested. Mr. Hill said it would include
32 all of the counties, but disregard the P.O. boxes that cannot be differentiated in Morgan, Rhea,
33 Meigs, and Blount Counties. Given Ms. Vowell's comments, he said, he expected that this would
34 provide results similar to the other reports requested. Dr. Malmquist said this was not necessarily
35 true, providing the example of Meigs County where 75% of the cases had P.O. boxes. Mr.
36 Hanley expressed concern that this would be excluding 75% of the data, which was a significant
37 amount of data and not a preferential approach to use. Dr. Cibulas added that there are other
38 counties with 25% to 30% P.O. boxes.

39
40 Dr. Craig recommended that they conduct the first two reports and work on something to address
41 the issues to better geolocate cases. Mr. Hanley asked if he was referring to using the 49 census
42 tracts; Dr. Craig said this was correct. Mr. Hill suggested doing something different if the third
43 report shows large differences. Dr. Davidson pointed out that zip codes go along with P.O.
44 boxes. In her opinion, Dr. Davidson said, the third report is a good proposal, but she was not sure
45 it would provide the same results because it would involve eliminating a large portion of those
46 particular census tracts. Mr. Hill asked about the difficulty involved in conducting that particular

1 study; Dr. Hanley indicated that it would involve evaluating a significant amount of data. Dr.
2 Cibulas expressed concern that it would not be a credible study, indicating that their
3 epidemiologists would probably not let them do a study of that nature.

4
5 Dr. Davidson suggested applying the idea they have been discussing—using modified census
6 tracts—that would exclude Blount County, but include all of Meigs, Rhea, and Roane Counties.
7 Mr. Lewis asked if this was also including what Dr. Cibulas had said. Dr. Cibulas indicated that
8 if they were comfortable with the modified plume area, then this type of analysis was feasible
9 and they should definitely go forward with that.

10
11 After discussion among the ORRHES members, Dr. Davidson read the following motion: “The
12 ORRHES recommends that the Cancer Incidence Review report should include an analysis of
13 each of the eight counties individually; a modified census tract analysis that will include all of
14 Meigs County, all of Rhea County, all of Morgan County, but exclude Blount County.
15 Otherwise, remaining counties stay as they are in the census tract.” The recommendation passed
16 with 12 votes in favor, none opposed, and no abstentions.

17
18 Dr. Cember asked whether commonly occurring cancers, such as skin cancers, would be
19 included in the total number of cancers. Dr. Davidson said she was not sure, but expressed her
20 belief that skin cancer was not included. Dr. Craig explained that they had selected particular
21 cancers that were somehow related to their areas of interest.

22
23 Though he said he trusted what Dr. Cibulas said, Mr. Lewis expressed an interest in having
24 things in writing. He said that some plumes might go downstream, while others might go
25 upstream. He asked whether ATSDR would evaluate the plumes in a segmented fashion by
26 considering the different contaminants associated with different plumes or if they would
27 homogenize them. He asked whether they would separate them in relation to how they had
28 initially drawn the map.

29
30 According to Dr. Davidson, Ms. Williamson had said that this analysis should not be associated
31 with any particular types of exposure (because it could not do that) and that they needed to be
32 mindful of whether the analysis will convey to people that they can associate exposure with the
33 outcome of these data when they cannot. In his opinion, Mr. Lewis said, they sometimes had to
34 use this type of approach to get people to bring up their health issues. Mr. Lewis said he was not
35 stating that there is a connection, but that was the way they looked at things. He questioned not
36 following this logic when they had drawn a map based on the plumes.

37
38 Dr. Davidson said that they were looking at the entire map; Mr. Lewis was referring to particular
39 small areas. ORRHES could make a decision on further investigations based on the findings;
40 however, they did not want to give the impression that people can associate their cancers with a
41 particular plume. Mr. Lewis asked how many times he needed to say this: they must address
42 these types of things if they are going to meet the needs of the community. Dr. Davidson
43 suggested that ORRHES make an additional recommendation to request that particular type of
44 analysis, which was more specific than what had been voted upon. She said she was not
45 indicating that they could not request that particular analysis; she stated that they had to put that

1 particular recommendation on the table so there would be no mistakes as to what was being
2 requested.

3
4 Mr. Lewis said he had been instrumental in identifying the census tracts, noting that they were
5 originally only planning to deal with data at the county level. He said he had found information
6 on a site in New York, which he had shared with the group. He stated that they held a discussion
7 about subdividing their information and tying it into plumes. As a result, in his opinion, they
8 ended up with a modified version of their original intent of evaluating the plumes. He expressed
9 his belief that census tracts were not necessary if they were not going to look at the plumes,
10 except for the purpose of separating Knox County. In his opinion, he said, subdividing by plumes
11 would be helpful to people and give them an idea of what is going on in the area.

12
13 Dr. Davidson suggested that ORRHES make a specific recommendation for this type of report if
14 the subcommittee had an interest in it. Mr. Lewis recommended that ATSDR look at the data by
15 plumes. He indicated that he was not sure this would work, but said that ATSDR needed to look
16 at the plumes, evaluate them, and present the findings to ORRHES. Ms. Adkins asked whether
17 this would factor in the ridges and aerial pathways instead of only where contaminants were
18 blown. Dr. Cember indicated that it was inherent that an airborne plume would follow those.

19
20 Mr. Lewis said he was not asking that information be so pinpointed that it removes anonymity;
21 rather, he requested that information be general enough that people can make sense of it. In his
22 opinion, he said, people would be interested in this type of information. Dr. Cibulas said that this
23 would require a staged process. If ATSDR sees something in the county-level data, then the
24 agency will (if it can) work to try to identify more specific plume-type areas. He said that they
25 could make a recommendation now, but they would need to see if anything could even be
26 identified.

27
28 Ms. Adkins said she also had a wind direction map that shows the direction at different times of
29 the year, which could be helpful in this context. Mr. Hill asked about the difficulty of generating
30 a map similar to Ms. Adkins' that would pinpoint where the actual cases have been identified,
31 but not be specific enough to pinpoint people. In his opinion, he said, this could help them see
32 areas of potential concern. Dr. Cibulas was not sure, but said it should not be too difficult via
33 GIS technology. Dr. Evans indicated he had done something similar at Paducah Gaseous
34 Diffusion Plant, stating that it was possible to rank cancer incidences in a census tract by
35 frequency and incidence. Dr. Cember asked if Dr. Evans was referring to using a colored pit to
36 designate that site of each cancer. Dr. Evans said this could not be done. Dr. Creasia questioned
37 how they could possibly pinpoint cases when so many addresses were unknown.

38
39 Mr. Lewis asked Dr. Evans how he did this at Paducah. Dr. Evans explained that he used coded
40 census tracts, not points. Mr. Hill said that zip codes would be helpful. Dr. Davidson suggested
41 they ask Ms. Vowell if the TDOH would allow its data to be used in this manner. Ms. Vowell
42 said she would have to speak with people at the registry, but—based on conversations she had
43 with Toni Bounds (formerly with the registry)—you had to be careful when using small numbers
44 because people could probably be identified. In her opinion, she said, this would get into
45 concerns associated with the Health Insurance Portability and Accountability Act of 1996.

1 Mr. Lewis asked why the Paducah information had never been presented as an example and
2 expressed an interest in reviewing what was done at Paducah. He indicated he had not seen this
3 in the PHA. Dr. Evans said it could possibly be included as an appendix.

4
5 Regarding Mr. Lewis's motion, Mr. Hill suggested asking for as much detail as possible. He
6 asked if they had to wait until the next ORRHES meeting to obtain the information or if it could
7 be provided to the work group as soon as it is available. If they see a pattern with an example, he
8 said, then they can ask for more information. He did not want to wait and do nothing, he said,
9 until the next ORRHES meeting. Mr. Hanley replied that the report could be drafted with an
10 internal review started in July. The report would not be released, however, until the
11 communications plan was ready. ATSDR's Community Involvement Branch will be presenting
12 this plan to the Community Concerns and Communications Work Group (CCCWG) at the end of
13 July. After this, ATSDR will take comments and present the plan to ORRHES at its following
14 meeting. ATSDR will take their comments and implement them into the plan. Mr. Hanley
15 indicated that Mr. Lewis and Dr. Malmquist have been working on this for a long time and
16 continue to note the importance of effectively communicating the findings. The report will be
17 presented to ORRHES, ATSDR will receive input from the subcommittee, and it will be released
18 around October 2005.

19
20 Referring to Mr. Hill's comments, Mr. Lewis said, they were asking to talk to Ms. Williamson or
21 someone else soon so that they could get an idea of the findings and the direction to determine
22 whether or not to proceed with Dr. Cibulas's suggestion. He explained that they were not
23 necessarily asking for a formal report: they wanted some input and general discussion at a work
24 group meeting to guide the effort. Mr. Hill expressed concern with waiting until November to
25 see any information in case it is not what they had expected. Mr. Hanley asked what specific
26 information they were asking to speak with Ms. Williamson about. Mr. Lewis answered that they
27 were asking to speak with her about the data and plumes to follow up on another level of detail.
28 Dr. Davidson suggested that Dr. Malmquist contact Ms. Williamson to set up a work group
29 meeting to look at the data.

30
31 Dr. Davidson indicated that there was a motion on the table to ask ATSDR to conduct a cancer
32 incidence analysis by plume. Dr. Craig expressed his belief that this was going to be another
33 level to evaluate if the data showed something. Dr. Davidson rephrased the motion: "ORRHES
34 recommends that ATSDR conduct a cancer incidence analysis by plume if there are data
35 indicating that it can be done." The motion passed with 11 in favor, none opposed, and one
36 abstention.

Exposure Evaluation Work Group

37
38 Filling in for Dr. Malinauskas, Dr. Craig began by saying that (to his knowledge) the EEWG had
39 met once since the last ORRHES meeting to discuss comments received on the White Oak Creek
40 radionuclide releases PHA. The comments were compiled and evaluated. It is the
41 recommendation of the work group that ORRHES recommend that ATSDR address and respond
42 to the ORRHES comments on the PHA for Oak Ridge Reservation White Oak Creek
43 radionuclide releases. Everyone has received copies of these comments, and the EEWG officially
44 recommends that the comments be passed from ORRHES to ATSDR.
45
46

1 Dr. Davidson made a small modification to comment 38, regarding weighting factors. The
2 comment asked for examples, but she was requesting that ATSDR also include the actual
3 weighting factors used in the calculations and provide them in the document. Dr. Craig said that
4 this correction would be included.

5
6 Mr. Lewis said that a visitor from a Coalition for a Healthy Environment had also attended the
7 meeting. In Mr. Lewis's opinion, the visitor had done an excellent job of explaining his position
8 regarding an article he had written in the newspaper. Mr. Lewis had invited him to the meeting,
9 and said that it was refreshing to have him there. According to Mr. Lewis, the group embraced
10 this new visitor and Dr. Malinauskas invited him back to provide input at additional meetings.

11
12 Ms. Adkins said she had learned many interesting details since this report was released. She said
13 she had a list of 222 statements from people noting where things were dumped and buried. She
14 referred to number 131 on her list, which was one of her examples: someone indicated that nerve
15 gas was disposed along White Oak Creek. According to her source, Ms. Adkins said, phosgene
16 was burned openly in an open fire by the creek. She said someone also told her about hexavalent
17 chromium being dumped by the creek that, in her opinion, was never really addressed. She
18 expressed her belief that there are a lot of these issues that are not discussed, but that people
19 know about. Dr. Davidson asked whether Ms. Adkins was going to add her comments to those
20 being submitted by ORRHES. Ms. Adkins said that she gathered so, adding that a source told her
21 that thousands of tubes of picric acid were also dumped into the creek. Dr. Davidson asked if Ms.
22 Adkins was trying to determine whether these chemicals were found in ATSDR's analysis. Ms.
23 Adkins agreed that this would be appropriate.

24
25 Mr. Hanley asked if Ms. Adkins had timeframes for these disposals. According to Ms. Adkins,
26 she had different timeframes and had been keeping notes. Dr. Craig said he believed she was
27 referring to disposal in Rogers Quarry, where a lot of this took place. According to Dr. Craig, the
28 waste was placed into tanks; the tanks were shot and then sunk. Dr. Craig said that these had all
29 been cleaned up with underwater submarines at a cost of about 5 million dollars, and the areas
30 sampled for many years. Based on her comments, Dr. Craig expressed his belief that Ms. Adkins
31 was primarily referring to disposal that occurred in quarries. Ms. Adkins said she was referring
32 to different disposal, but that she also had Rogers Quarry marked on her map.

33
34 According to Ms. Adkins, she also had locations where nerve gas was dumped and openly
35 burned by DOE employees left over from World War II. Dr. Creasia expressed his belief that
36 Oak Ridge had never had nerve gas; Ms. Adkins disagreed. Dr. Creasia explained that his
37 expertise was in this field, and said she could believe there was never nerve gas in Oak Ridge.
38 Dr. Davidson said it might be possible, but said she would be surprised. Dr. Craig expressed his
39 belief that it would not have been coming out of White Oak Creek anyway.

40
41 Dr. Davidson said that they would ask ATSDR to check the monitoring records and recheck for
42 the particular contaminants listed in Ms. Adkins' comments. She asked if there were any
43 objections, noting that they were voting on the entire package with modifications and additions.
44 The vote passed PHA with 12 in favor, none opposed, and no abstentions. Dr. Davidson noted that the
45 groundwater PHA is the next assignment for the EEWG, and asked Dr. Malinauskas set up a

1 timeframe for having comments to him. Dr. Craig indicated the public comments are due August
2 19. Dr. Davidson noted that a meeting would need to be held before then.

3
4 Mr. Lewis noted that they had heard a lot of comments from Ms. Adkins on groundwater, asking
5 how these comments would be addressed and where they would be presented (in the body of the
6 document or somewhere else). Dr. Davidson said that they had asked earlier for ORRHES
7 members to submit their comments to Dr. Malinauskas so they would be collated with the
8 comments of the full subcommittee. Dr. Craig suggested that the analysis would be appropriate
9 for the EEWG. Dr. Davidson said she would prefer to have all of Ms. Adkins's comments
10 become part of their formal presentation of comments to ATSDR. Ms. Adkins said she would
11 prefer to present her comments in total when she had received the data on the 300-foot-deep
12 burial wells and present them to ORRHES at one time. Dr. Davidson asked if she would have
13 them before they met to discuss the comments on the groundwater PHA before August 19.

14
15 To be honest, Ms. Adkins said, she was not sure what to do about her comments. She said she
16 felt that nothing she says has any credibility and what she says is passed off as a joke. As a
17 result, she said, she has no interest in saying anything to anyone. She indicated that she will
18 continue to gather information, but she did not know what to do with the information or whom to
19 give it to. In her opinion, she said, she had dozens of alarming quotes from people who did the
20 burying and shooting of canisters, and were reportedly told by DOE officials that they could not
21 record any conversations or report these activities. She expressed concern that she was not sure
22 anyone here was sincere enough to hear these things and she was not sure how they could
23 proceed without knowing what and where things were buried. In her opinion, she said, there are
24 porous underground canals and aquifers, and learning this was the key to many issues. However,
25 she said she felt that no one really wanted to hear about them. Several ORRHES members,
26 including Drs. Creasia and Craig, responded that they had an interest in hearing these details
27 from Ms. Adkins. Dr. Davidson said that this was the reason she asked Ms. Adkins to submit her
28 comments along with those from ORRHES—because they are all taken and responded to.

29
30 Dr. Craig said that Dr. Joseph had asked Ms. Adkins for with more specific information,
31 expressing his belief that Dr. Joseph would follow up on these issues. Dr. Davidson suggested
32 that Ms. Adkins provide any comments on groundwater via the ORRHES to ensure that they are
33 responded to. Mr. Lewis indicated that she could also send her comments to ATSDR. Dr.
34 Davidson said that this was true, but in her opinion it was good to keep them together with the
35 other ORRHES comments.

36
37 Ms. Adkins said that one person who has conducted research on groundwater for 4 years was not
38 able to attend the meeting today. According to Ms. Adkins, this person has all kinds of
39 information and had a PowerPoint presentation ready to show the ORRHES. In her opinion, Ms.
40 Adkins said, there needs to be a way to incorporate this information also. Dr. Davidson asked if
41 this individual had a copy of the document; Ms. Adkins said she did. Dr. Davidson indicated the
42 individual could also submit her comments to ATSDR directly. Ms. Adkins expressed an interest
43 in having the individual's report be sent directly to the groundwater staff because of her years of
44 work in this field. Dr. Davidson said she could do this also and asked if the individual was on the
45 e-mail list for meetings. Ms. Adkins said she was.

1
2 **Community Concerns and Communications Work Group**

3 George Gartseff said that his work group had met several times since the last ORRHES meeting,
4 and that discussions during those meetings have had three main topics. First, the work group has
5 discussed the updated ORRHES Web site and had a remote connection to go over the site
6 enhancements. In addition, a usability test is planned for mid-July. Second, the work group spent
7 a significant amount of time discussing Dr. Robert Brent's presentations. They talked about the
8 effectiveness of these presentations, particularly at addressing community concerns. In general,
9 the work group brought up questions about the perceptions of past failings of the community
10 needs assessment and the effectiveness of communications with the public. According to Mr.
11 Gartseff, the discussions on the presentations could be summed into very broad questions to
12 ATSDR:

- 13
14 • What was the agency's impression of these presentations?
15
16 • Were the presentations effective?
17
18 • What measures does the agency use to gauge whether these types of outreach activities are
19 effective?
20
21 • How are we capturing any lessons learned to bring forward for improving any future
22 presentations involving community outreach?
23
24 • Are we publicizing these activities well enough to get the intended audience to attend?
25

26 As a work group, the CCCWG had expressed general disappointment in the fairly low
27 attendance. Dr. Cember asked how long the attendee list was; Mr. Gartseff answered that
28 ATSDR had given them a number of about 35 people who were characterized as those outside of
29 ORRHES and ATSDR. Mr. Lewis indicated that the next question asked was how many people
30 from the general public had attended. Mr. Gartseff said that the group had felt attendance was
31 low and expressed concerns that it was not publicized well enough, which relates to questions of
32 planning, lessons learned, and other issues.

33
34 Mr. Gartseff said that while discussing these presentations, the work group had issues related to
35 the minutes. According to Mr. Gartseff, the minutes did not appropriately reflect some comments
36 made during the discussions of Dr. Brent's presentations and community concerns. When these
37 were modified, Mr. Gartseff said, they reportedly still did not reflect these concerns. Mr. Gartseff
38 said that this led into a discovery that the format of the meeting minutes had differed from what
39 ORRHES had become accustomed to seeing over the past few years; the work group passed a
40 motion to not approve that set and any subsequent minutes that incorporated the different format.
41 According to Mr. Gartseff, this also touched on administrative issues as to how the rest of the
42 work groups and ORRHES do their business. Instead of creating a recommendation to discuss
43 tonight, Dr. Cibulas was here to speak to this issue.
44

45 Mr. Lewis asked to make two clarifications. In his opinion, he said, if they had detailed minutes
46 of the meeting, it would have been clear that they had broken down the full count of attendees to

1 about 10 to 12 people in Oak Ridge and about 7 to 8 in Kingston. He expressed concern that they
2 used the term “format” regarding the meeting minutes, but that the CCCWG had also discussed
3 content. He expressed his belief that this was not an isolated issue, although the term “form” was
4 being used when some of the content had been modified. In his opinion, he said, there would
5 probably have been no issue if only the format was changed. He asked that this be recorded in
6 the minutes.

7
8 Dr. Cibulas said that the minutes have been revised. ATSDR’s Office of Communication
9 recently looked at the minutes and made some subtle recommendations regarding them. He
10 expressed his belief that minutes are very important as they serve as an important record for
11 management and people who could not attend, and also are a good way to gather concerns that
12 the agency needs to hear about, review, and respond to. He stated that detailed minutes are
13 required under FACA. He said that he shared this concern that the minutes must accurately
14 reflect the meetings and capture needed information in an appropriate fashion.

15
16 According to Dr. Cibulas, ATSDR had a sense that the tone of the meetings needed to be more
17 objective. Therefore, the minutes were amended a little bit to reflect and put more emphasis on
18 actions and decisions discussed during the meeting. He expressed his belief that the process and
19 the content had not changed. In his opinion, he said, the change was not brought to the ORRHES
20 because the sense was that the changes were minor. The videotapes and audiotapes are always
21 available to back up the work group and ORRHES meetings if a closer examination of the
22 minutes is necessary. He expressed his belief that the minutes accurately capture what the
23 committee discusses, most importantly the actions and decisions, and that after looking at the last
24 work group meeting minutes they would agree that they were acceptable to the ORRHES
25 members. He indicated that if there were strong feelings that these changes were more than
26 minor improvements, than this could be discussed further. Dr. Cibulas summarized that the
27 changes were made after the Office of Communication expressed a strong sense that some of the
28 minutes had tone issues and needed to be more objective.

29
30 Mr. Lewis thanked Dr. Cibulas for his comments, stating that he had raised most of the issues
31 regarding the minutes. In his opinion, he said, there was a core issue pertaining to a particular set
32 of minutes associated with the effort made by Dr. Cember to bring a qualified expert to assist
33 them in discussing various issues, such as birth defects. Mr. Lewis explained that they had been
34 trying to convey what they perceived as the root cause and weaknesses possibly associated with
35 the low turnout at these presentations. He saw, he said, a programmatic breakdown between what
36 they had seen advertised and the low turnout. He expressed his personal opinion that Dr. Brent
37 was an excellent presenter, though he did not find that he had received necessary information in
38 advance within a timely manner. In addition, he expressed his belief that Dr. Brent had not been
39 familiar with the specific issues of the community and held conversations with him on this topic.

40
41 Mr. Lewis expressed frustration, saying that the person in charge of communications should have
42 been reviewing this effort in order to improve the process and identify the weaknesses. In his
43 opinion, he said, when he saw the meeting minutes, the detailed discussions in this area had
44 appeared to be removed or sanitized. He expressed frustration that they had looked at the process
45 and at the flyer to see its weaknesses, but expressed his belief that the level of detail regarding

1 discussions on corrective actions to improve the process were not included in the minutes when
2 they needed to be.

3
4 He said that the tone is conveyed when people are not representing things appropriately. He
5 stated that he would become frustrated if someone indicated he was talking about format when
6 his concerns were more related to content. He stated that the purpose of raising issues is
7 sometimes not a result of a single issue, but an issue that has happened several times.

8 He said that he had conducted outreach, which was the reason for some of the large turnout at
9 today's meeting. According to Mr. Lewis, when he chaired this work group he would reach out
10 and bring people to meetings. He indicated that the effectiveness of their efforts is not only for
11 them to understand, but also to spread the message to the public. He indicated that they needed to
12 evaluate how they present things. He explained that they had found out Dr. Brent was giving
13 different presentations in Oak Ridge and Kingston. The work group had also discussed how
14 about 1,100 flyers and e-mails were distributed, and had evaluated the flyer. According to Mr.
15 Lewis, work group members indicated that the flyer would not attract people to the meeting
16 based on its content and appearance.

17
18 He continued that he sometimes uses a tone when he sees programmatic weaknesses or
19 breakdowns regarding issues that have not been responded to. In his opinion, he said, the
20 community deserves its best efforts, and said that they can do a better job of educating the public
21 on what they are discussing to bring more people to the forefront. According to Mr. Lewis,
22 comments made at the right time often help people, such as having Dr. Cember respond directly
23 to questions from the public. In his opinion, Mr. Lewis said, because of his style and expertise
24 Dr. Brent did an excellent job in dealing with some individuals who might not be considered
25 friends of ATSDR or ORRHES. He expressed his belief that these individuals appeared to leave
26 with a high degree of understanding and respect. Mr. Lewis expressed disappointment that there
27 had not been a larger audience.

28
29 Mr. Lewis also expressed disappointment that key issues that have been raised in the public via
30 newspapers and other sources were not presented to Dr. Brent so he could address them.
31 According to Mr. Lewis, he had shown Dr. Brent an article from *The Tennessean* about grades in
32 school and whether children were possibly suffering from birth defects, but Dr. Brent had not
33 seen it beforehand. In his opinion, Mr. Lewis said, it would have been helpful to share this and
34 other key concerns that have been expressed in the community over the last 10 years so that Dr.
35 Brent could have addressed some of them during his presentations.

36
37 Mr. Lewis said that he had made another point—which was why he had pushed for the detail—
38 regarding Dr. Brent's response to his question about what he would have used to advertise. He
39 explained how Dr. Brent presented an example of what he did in *Life* magazine that Mr. Lewis
40 considered beautiful, displaying information in a question-and-answer format. Mr. Lewis
41 suggested looking at this article and comparing it to the flyer to see whether it would have helped
42 attract a larger audience. It was a focus for him to help the community understand and bring
43 them to the table. In his opinion, he said, there are some programmatic weaknesses that need to
44 be improved with the advertisements and communications being developed at ATSDR, as well
45 as some of the presentations.

1 He said that he applauded Dr. Cibulas for modifications made today to listening to the public at
2 large and to their health issues. He stated that David Hackett had said that he did not know 10
3 people who were overly concerned about contamination issues, but most people he knew wanted
4 to discuss health issues. He said he liked the Loudon County report because it evaluated health
5 issues as part of its effort, stating his opinion that you gain credibility by knowing and focusing
6 on health issues. He indicated that he would provide some of the questions and comments to Dr.
7 Cibulas so he could see where their focus is, noting that in some cases people had some issues
8 that would be categorized as anecdotal information. In his opinion, he said, Dr. Brent could have
9 responded to some of these issues instead of saying that an answer would be provided later.
10 Though some people might not consider anecdotal information, he expressed his belief that they
11 still needed to listen to these concerns and try to address them.

12
13 Mr. Lewis said he spent about 10 years collecting and collating these types of concerns,
14 expressing his opinion that he was not aware of how bad it was. He expressed his belief that they
15 could make efforts to improve the situation, but was not sure that senior management was
16 necessarily aware of what occurs at these different levels. According to Mr. Lewis, if Dr. Cibulas
17 read some of these meeting minutes and examined the history of what has transpired with
18 ATSDR's advertisements and other issues, he would see what they were attempting to
19 accomplish. He expressed his hope that ATSDR took his comments as constructive criticism,
20 saying they could work toward improvement. He recommended that Dr. Cibulas monitor what is
21 going on so that they do not have more ATSDR staff from Atlanta sitting in the room, expressing
22 his opinion that having too many staff attend these meetings is not effective.

23
24 Mr. Lewis also expressed concern about the fact that he had mentioned using the "Dr. Bob
25 [Overholt] Show" and that there was no followup until afterwards. If ATSDR is going to address
26 the public's issues, Mr. Lewis said, Dr. Cibulas should look at what is going on and see what
27 adjustments can be made given the limited resources for that task. Mr. Lewis said that they work
28 with Dr. Taylor, adding his view that some styles work more effectively in the community than
29 others. In his opinion, he said, if certain things taking place were monitored closely with an
30 objective view, then they might be able to improve operations and attract more people to come to
31 meetings, which would benefit the community.

32
33 Dr. Cibulas thanked Mr. Lewis for his comments. They have 1 year left, he said, and ATSDR is
34 willing to do what is necessary to make it the best year possible. He also expressed
35 disappointment in the sparse attendance of Dr. Brent's presentation, stating he also finds him to
36 be an excellent speaker. Since ATSDR was going into the larger CIA, it appeared logical to
37 educate and provide some information the community on radiation, cancer, and birth defects. He
38 said he believed that this was still a good idea, but agreed that lessons learned indicated that they
39 had done something wrong. He said that they were all disappointed in this turnout. Over the next
40 year, Dr. Cibulas said, they need to do better to ensure that they accomplish as much as feasible.

41
42 Dr. Cibulas said he understood Mr. Lewis's comments regarding the minutes, noting that he had
43 given him a sense of why they had been changed. He expressed his belief that they were still
44 minor changes, but said that he was willing to listen to a recommendation from ORRHES if the
45 subcommittee found that the minutes were no longer consistent with what was agreed to as far as
46 how the minutes would be captured. Although he was open to a recommendation, he noted that it

1 was the agency's impression that the minutes capture the actions and decisions, and are what
2 they consider to be a fair reflection of what transpires with the subcommittee.

3
4 Mr. Lewis complimented the minute-taker, Ms. Bertelsen, saying that she does an excellent job
5 when left alone. He said he would reduce his comments as long as they are effective and do not
6 repeat the same mistakes. In his opinion, he said, the problem is that issues raised are not being
7 addressed, which is all he has ever asked for. He indicated that he has placed an emphasis on
8 work group minutes so people can follow things that take place. He expressed his belief that the
9 minutes needed to reflect when adjustments are discussed regarding programmatic issues. He
10 indicated that he never asked for verbatim minutes, adding his opinion that continuity in the
11 discussions is very important to those who cannot attend and as a tool to decipher what they are
12 doing.

13
14 Dr. Cibulas stated that they would proceed with the minutes and ensure that all they fairly
15 represent all programmatic issues. If there are comments indicating that programmatic content
16 has not been captured, then they will ensure that it is accurately reflected. If the ORRHES leaves
17 this responsibility to ATSDR, Dr. Cibulas said, ATSDR will make sure that the minutes are an
18 accurate reflection of the discussion and are done correctly.

19
20 Mr. Hill said that he personally appreciates that the comments are modified, because in his
21 opinion, they sound better than what he actually said. In his opinion, he said, they needed to be
22 mindful that statements made by community members were captured accurately—either exactly
23 what they said or extremely close to their actual words. He expressed concern that it really hurts
24 community members when they find they have been misquoted or perceive that they have been
25 misquoted, adding his belief that this has gotten them into trouble in the past.

26
27 Dr. Davidson expressed her belief that there are some instances when people say what they did
28 not mean to say. In her opinion, she said, explanatory information can be placed into brackets
29 and flagged as additional comments. However, she said, the minutes should accurately reflect the
30 meeting tapes.

31
32 Mr. Hanley indicated that he has draft summary documents for two PHAs: White Oak Creek and
33 the modified TSCA incinerator. He noted that they have discussed means of effective
34 communication and asked for the ORRHES members to provide comments on these documents.
35 He asked if he could receive the comments at one of the next two CCCWG meetings. He said
36 that he looked forward to receiving the comments.

37
38 Dr. Davidson brought up the issue of public availability sessions, suggesting that the CCCWG
39 should look into the logistics of holding these sessions—for example, how and where to hold
40 them. In her opinion, she said, these were an effective means of communicating with the public
41 and they needed to be established. She said that the format could be open discussion or
42 something else; she suggested holding them outside Oak Ridge to reach people they normally do
43 not target. Dr. Davidson asked the CCCWG to look into this as long as there were no objections.
44 Mr. David Johnson did not object, adding his opinion that Ms. Hunter from Loudon County
45 would be a good resource to tap into fresh ideas. He suggested that they make their process more

1 inclusive of other personalities. Dr. Davidson checked to make sure they had Ms. Hunter's
2 contact information, which they did.

3
4 Mr. Lewis asked Dr. Cibulas whether he found most of the comments from the public to relate to
5 the technical issues of exposure evaluation or if most people he had heard from were interested
6 in health issues. In his opinion, Mr. Lewis said, there was no point in having public availability
7 sessions if they were going to be on topics that the community is not concerned about. Before
8 going to the community, he recommended, they should find out the issues and advertise
9 properly. Then, he said, they could go to the community and address the concerns. He indicated
10 that he had proposed that the Health Outcome Data Work Group evaluate these types of issues,
11 but no meeting has been held yet. He expressed his belief that they could say that the comments
12 received today had disrupted their activities, but said this had happened because there has been
13 no forum for these individuals to discuss these types of issues even after being here for 4 years.
14 In his opinion, he said, this was another programmatic issue and they needed to set up something
15 that could deal with responding to these issues, similar to how Dr. Cember responded to some of
16 the public's questions today.

17
18 Mr. Lewis referred to a comment, from the Paducah PHA, in which a man asked about
19 synergistic effects of an ordnance plant and the Tennessee Valley Authority (TVA) on the
20 releases at Paducah. According to Mr. Lewis, some concerns were grouped together, and the
21 response said that workers needed to report their problems to their companies. Mr. Lewis
22 expressed his belief that this individual was dealing with issues outside the fence and was asking
23 ATSDR to look at these; in his opinion, this showed an avoidance of issues and this had to be
24 dealt with to help people understand. He indicated that some people are better than others at
25 helping people understand these issues, and stated his opinion that they needed to lead with these
26 people. He said that some simple actions get results, such as testing a well because someone asks
27 for it. In his opinion, he said, this was what people want, adding that Dr. Brent did this in how he
28 dealt with individuals and Dr. Henry Falk did this for the Scarboro community when he looked
29 at children to address the community's health issues.

30
31 Dr. Davidson tasked the CCCWG to work with ATSDR to discuss the issues and concerns
32 regarding the setup of availability sessions and to come to an agreement on how these should be
33 conducted.

34
35 In her opinion, Ms. Galloway said, the continuing problem is that the public wants to discuss
36 individual health concerns, but they are chartered to discuss public health concerns. She
37 expressed her belief that the public feels their concerns are being homogenized, and she has not
38 seen or heard a solution to address this issue—when the public has one expectation and ATSDR
39 is chartered to do something quite different. She said that people are looking for answers to their
40 particular health concerns, and recommended that they put a lot more consideration into how to
41 address these people even though ATSDR is not here to address individual health concerns.

42
43 Dr. Cibulas said that this was very fair. He explained that ATSDR is a public health agency, and
44 in his opinion, it is a disservice for people to feel that the agency is neglecting this issue. She said
45 that he was pleased when he spoke with Ms. Stokes personally and she said she had been to two
46 of ATSDR's AOECs. He said her concerns are still concerns for which she has not received

1 satisfactory answers, but he was not sure what else they could do; they were talking about public
2 availability sessions, and if they used this route to deliver PHAs and bring in the community,
3 they would need to ensure that health is a significant part of these sessions. In his opinion, he
4 said, it would be a complete disservice for ATSDR to neglect that it is a public health agency or
5 for people to feel that the agency does not care about their health.
6

7 Mr. Gartseff indicated that ATSDR, via Dr. Cibulas, had responded to the main points on the
8 work group meeting minutes issue. The CCCWG will address other issues as discussed during
9 this meeting (such as public availability sessions) and will establish contacts with the agency if
10 needed.
11

12 Ms. Robinson presented an update on the Oak Ridge Web site redesign project. She presented a
13 project status diagram to show completed and upcoming activities. ATSDR was still making
14 efforts to conduct the usability testing. At the March 22 meeting, the ORRHES members ranked
15 a list of site enhancements, which ATSDR has been working on since that time. They had
16 assumed that ORRHES members would have had more time to help ATSDR recruit people for
17 the usability testing, but this has not occurred due to all of their busy schedules. She indicated
18 that they needed to put some time into recruitment, and had asked the CCCWG whether it should
19 conduct testing without enough subjects or postpone the testing. Based on discussions with the
20 CCCWG, it was decided to postpone the testing. Ms. Robinson indicated that she spoke with Ms.
21 Hunter and other meeting attendees, who expressed an interest in participating in the testing.
22

23 Ms. Robinson referred to a slide detailing the Web site enhancements and read through them in
24 order from the highest- to the lowest-ranked item.
25

- 26 • Interactive map: show areas of projected contamination by year and community areas—show
27 overlapping exposures.
- 28
- 29 • List of top issues (what people are asking about—questions and answers).
- 30
- 31 • Links to additional information on possible health effects by types of contaminant (could be
32 cross-linked with interactive map).
- 33
- 34 • Add “Current Activities” section (list of Oak Ridge PHAs in progress) and add a “3-month
35 look-ahead calendar.”
- 36
- 37 • Add timeline to show the operating periods of the three main facilities (X-10, Y-12, and K-
38 25).
- 39
- 40 • Best ORRHES and work group presentations.
- 41
- 42 • Search engine for minutes of ORRHES and work groups only.
- 43
- 44 • Open-ended feedback or comment input box.
- 45

1 ORRHES members also provided individual suggestions, but these were not discussed in detail.
2 She indicated that Wilma López has been working on many of the site enhancements. One
3 enhancement that is not easy to address is the interactive map. Ms. Robinson explained that they
4 needed the PHAs completed to populate the map and to have the content programmed. She said
5 she could go into details regarding the list of top issues and the actions that will be taken to
6 address each one, but noted that the CCCWG had discussed them and recommended that
7 everyone read these at their leisure. If anyone had questions, she asked that they send them to the
8 work group—they will work on them together.

9
10 According to Ms. Robinson, nearly all of the enhancements have been addressed. That morning,
11 she had spoken with Ms. López, who indicated that most of the enhancements are not visible on
12 the Web site because they are still undergoing QA/QC on the test server. They should be posted
13 from the test server to the main site next week or the following week. ATSDR plans to come to
14 Oak Ridge during the week of July 11. They have gone ahead and begun making enhancements
15 instead of focusing on recruiting for usability testing. In her opinion, Ms. Robinson said, this
16 would be beneficial because they could now test some of the enhancements.

17
18 Ms. Robinson referred to a slide summarizing the project issues. She explained that there have
19 been what she considered to be good interactions and discussions with the CCCWG about the
20 site. In addition to testing, in the next 6 months ATSDR is going to perform routes updates as
21 possible, including minutes, calendar of events, training events, and PHAs as they are released.
22 The next round of major enhancements will start in the last quarter of 2005. Over the next 3
23 months, ATSDR will maintain the site and conduct usability testing. Then, ATSDR will revisit
24 the site enhancements. In her opinion, she said, the site is pretty rich, and now they needed to see
25 what is and is not working.

26
27 Ms. Robinson emphasized the need for additional photos to make the site more interesting. Dr.
28 Craig said that Ms. Krausse, who attended the meeting, is the head of publications at ORNL. He
29 said that she would have access to thousands of photographs. Ms. Robinson indicated that
30 community photographs, such as pictures of the Scarboro community, were needed. Ms.
31 Robinson said she could try to schedule a meeting to obtain pictures during the week of July 11.
32 Mr. Hanley stated that he would set this up with Dr. Joseph.

33
34 Ms. Robinson pointed out that if they could not recruit enough individuals for the usability
35 testing, then they might have to delay it. By the next time Ms. Robinson reported to them,
36 however, she intended to have the results of the usability testing. She indicated that there were
37 some questions about the site enhancements, and apologized that she had forgotten to bring the
38 Web site statistics with her.

39
40 Regarding an interactive map, Mr. Lewis provided Ms. Robinson with a figure titled “Timeline
41 of Major Contaminant Releases” from one of the Oak Ridge Dose Reconstruction Reports. He
42 expressed his belief that documents such as this could be obtained if they took the time to look
43 on CD-ROMs. In his opinion, he said, people could follow this type of pictorial image showing
44 dates of operations and releases at the ORR. According to Ms. Robinson, ATSDR has shown an
45 interest from the beginning in doing this type of map and has begged them to help provide this
46 type of information. She added that a tremendous amount of work has gone into the Web site.

1 They still needed their help, however, and she asked the ORRHES members to look at their own
2 records for information that could be used. Mr. Lewis expressed his belief that this type of
3 information puts issues into perspective, such as where someone lives relative to where a
4 plume is located, which people understand and can correlate their issues with. In his opinion, he
5 said, most people questioned the releases that took place when they were living in a certain area
6 during a particular time period. He suggested also having someone who can talk about these
7 issues from a technical and clinical perspective, expressing his belief that these needed to be
8 combined to reach people and in order to have some decent public availability sessions.

9
10 Ms. Robinson said that they could discuss some of the visual ideas that the work group has come
11 up with and see if they can develop a strategy for completing some of them. This would be
12 included in the next set of enhancements, which does require quite a bit of time. She said she
13 completely agreed with Mr. Lewis about the strategy, but the question is having time to complete
14 it. She requested that ORRHES members provide her with any additional information, such as
15 the timeline brought in by Mr. Lewis.

16
17 Dr. Cember asked about the hit count. Ms. Robinson answered that the site had about 6,000
18 unique visits over a 4-month period. There was a 50% page reload, indicating that the site was
19 receiving some repeat visitation. The site is able to tell if someone is reloading the page into the
20 browser as well. Spikes have been observed as new stories appear (such as when the White Oak
21 Creek PHA was released), suggesting that people are coming to the site. In her opinion, she said,
22 this is not the most trafficked site, but it is receiving a significant amount of traffic from people
23 who are probably generally interested and looking at the site. People are spending an average of
24 3 minutes per page, indicating that people are reading the content.

25
26 Mr. Hill asked how ATSDR would recruit for the usability testing. Ms. Robinson indicated that
27 this was the labor-intensive portion, involving a snowball sample. She is working with Dr.
28 Taylor and asking him to network in key groups in town and call people in Oak Ridge. Ms. Bird
29 in the ATSDR Oak Ridge Field Office will be assisting with recruiting also. Mr. Hanley asked
30 Mr. Hill if there were any union members who would be interested. Mr. Hill asked how they
31 would draw people in. Ms. Robinson explained that they would conduct a convenient sample
32 using a snowball technique. She expressed her hope that the ORRHES members would assist
33 with the recruiting and call friends. She had gotten people from Loudon County to sign up today.
34 They had to start making calls, and asked for their help.

35
36 Dr. Davidson asked if she was suggesting that they contact their friends, and questioned what
37 time the testing would take place. Ms. Robinson answered that she should talk to their friends
38 and e-mail their phone number to Ms. Horton. ATSDR will call the individuals to see if they can
39 come during the week of July 11; however, the exact day and time are not available now. She
40 asked them to explain that they are on the ORRHES, which recently updated its Web site, and
41 that their participation would help improve the site. Dr. Davidson asked if they would indicate a
42 range of times so people would know if they were available and when to be expected. Ms.
43 Robinson explained that the testing would be during the week of July 11, and that the testing
44 might occur on July 12 and 13 depending on responses from potential participants. People will
45 be provided with a time range to be in the field office, and 1-hour (or possibly 30-minute)

1 appointments will be booked. Participants will be given five tasks to perform and asked what
2 they liked and did not like about the site.

3
4 Dr. Davidson asked if they wanted computer-savvy or naïve individuals. Ms. Robinson indicated
5 that they were looking for novices and experts, but that people unacquainted with the site were
6 the most preferred. Mr. Hill asked Ms. Horton to prepare an e-mail that they can forward to
7 potential participants. Ms. Horton indicated she is out until July 5. Ms. Robinson said she would
8 prepare an e-mail and forward it to Dr. Taylor.

9
10 Mr. Lewis suggested recruiting at high schools (particularly science teachers) and also among
11 fellow church members. Mr. Gartseff asked how many people were needed. Ms. Robinson
12 answered that they were looking to test about 16 people, and therefore would need to recruit 24.

13
14 Ms. Robinson summarized that she would send an e-mail for them to forward that recapped their
15 conversation today. She asked that they send the e-mail and follow up with a phone call.

Vote on Work Group Recommendations

16
17
18
19
20
21 Dr. Craig stated that “ORRHES recommends that ATSDR address and respond to the ORRHES
22 comments on the PHA for Oak Ridge Reservation White Oak Creek Radionuclide Releases.”
23 This includes any modifications and additions made during the meeting. The vote passed with 12
24 in favor, none opposed, and no abstentions.

ORRHES Recommendations

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30 The ORRHES recommends that the Cancer Incidence Review report should include an analysis
31 of each of the eight counties individually; a modified census tract analysis that will include all of
32 Meigs County, all of Rhea County, all of Morgan County, but exclude Blount County.
33 Otherwise, remaining counties stay as they are in the census tract. The recommendation passed
34 with 12 votes in favor, none opposed, and no abstentions.

35
36 The ORRHES recommends that ATSDR conduct a cancer incidence analysis by plume if there
37 are data indicating that it can be done. The motion passed with 11 in favor, none opposed, and
38 one abstention.

Schedule of Next Meetings

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44 Dr. Davidson noted that Dr. Malinauskas needed to find a date for the next EEWG meeting prior
45 to April 19 to discuss the off-site groundwater PHA. Dr. Davidson recommended that Dr.

1 Malmquist contact Ms. Williamson to set up a time to present her preliminary information to the
2 work group.

3
4 For the next ORRHES meeting, Ms. Horton asked about participants' availability on September
5 8 or 20. After discussion, Ms. Horton indicated that Thursday, September 8, was the tentatively
6 scheduled date for the next meeting. Dr. Taylor would send an e-mail to inform everyone of the
7 date.

Additional Business

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12 Ms. Horton said that she could present on DHAC collecting information around the ORR or
13 present at a later time. There were no objections to Ms. Horton not presenting at tonight's
14 meeting.

15
16 At a recent EEWG meeting, Mr. Hill said, they had discussed the fact that PCB levels in fish
17 were not decreasing. He had asked for more information and had anticipated this information
18 being presented today. He expressed concern that this was a new issue to him, and expressed his
19 belief that this information would be interesting and beneficial to the subcommittee. He asked
20 about the status of this request. Mr. Hanley indicated that ATSDR is still working on the PHA,
21 and the agency would follow up on this concern in the document.

22
23 Dr. Cember indicated that coal is a main source of mercury contamination. He asked how much
24 mercury is in coal in the steam plants (Bull Run and Kingston). Dr. Taylor said that this would
25 be addressed in the mercury PHA. Mr. Hanley explained that the PHA would cover the years
26 when major mercury releases occurred in the 1950s and 1960s. The Bull Run Steam Plant was
27 not operating at that time, but the Kingston Steam Plant was. Thus, the PHA will include an
28 evaluation of the Kingston Steam Plant.

29
30 Mr. Lewis asked if they were taking into account that about 70% of those units were supplying
31 power to DOE. He asked them to be mindful that there were not many lights then, and to not
32 assume that the power was going to the public. In his opinion, he said, a lot of emissions released
33 from the stack and entering the valley were probably very bad, although they might not have
34 been in the same wind direction. According to Mr. Lewis, today the Kingston Steam Plant is
35 ranked as the twenty-third polluter. He said they might be surprised when they look at the
36 location of the stacks and the coal being burned in the valley.

37
38 Dr. Davidson indicated that they were provided with a handout for recruiting of the Web site
39 usability testing.

Action Items from This Meeting

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45 • Dr. Malinauskas will schedule a meeting prior to April 19 to discuss comments on the off-
46 site groundwater PHA.

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- Dr. Malmquist will schedule a meeting for Ms. Williamson to present information to the Health Outcome Data Work Group.
- The next ORRHES meeting is tentatively scheduled for September 8.
- ORRHES members will review the TSCA and White Oak Creek summary documents and provide comments to the CCCWG at its next meeting (or the one following that) or to ATSDR.
- CCCWG will investigate the possibility of holding public availability sessions.
- Ms. Robinson will develop and send to Dr. Taylor an e-mail for ORRHES members to forward to potential Web site usability testing subjects.
- ORRHES members will recruit people for usability testing during the week of July 11.
- Mr. Hanley will set up an appointment via Dr. Joseph for Ms. Robinson to review photographs for the Web site.
- When available, hard copies of *A Toxicology Curriculum for Communities* will be provided to Dr. Creasia, Dr. Cember, Mr. Lewis, Mr. David Johnson, and Mr. Washington.

Meeting Adjourned

Dr. Davidson adjourned the meeting at 7:50 p.m.