



Many Voices Working for the Community

Oak Ridge Site Specific Advisory Board

Approved May 8, 2013 Meeting Minutes

The Oak Ridge Site Specific Advisory Board (ORSSAB) held its monthly meeting on Wednesday, May 8, 2013, at the DOE Information Center, 1 Science.gov Way, Oak Ridge, Tenn., beginning at 6 p.m. A video of the meeting was made and may be viewed by contacting the ORSSAB support offices at (865) 241-4583 or 241-4584. The presentation portion of the video is available on the board's YouTube site at www.youtube.com/user/ORSSAB/videos.

Members Present

Jimmy Bell
Alfreda Cook
Lisa Hagy
Gracie Hall¹
David Hemelright, Vice
Chair
Chuck Jensen, Secretary

Jennifer Kasten
Jan Lyons
David Martin, Chair
Fay Martin
Scott McKinney
Donald Mei
Greg Paulus

Belinda Price
Julia Riley¹
Coralie Staley
Scott Stout
Thomas Valunas

Members Absent

Janet Hart
Bob Hatcher
Bruce Hicks
Howard Holmes²

¹Student Representative

²Second consecutive absence

Liaisons, Deputy Designated Federal Officer, and Federal Coordinator Present

Dave Adler, Liaison and Alternate Deputy Designated Federal Officer, Department of Energy-Oak Ridge Office (DOE-ORO)
Susan Cange, DOE-ORO Deputy Manager for Environment Management (EM) and Deputy Designated Federal Officer
Connie Jones, Liaison, Environmental Protection Agency (EPA), Region 4
Melyssa Noe, ORSSAB Federal Coordinator, DOE-ORO
John Owsley, Liaison, Tennessee Department of Environment and Conservation (TDEC)

Others Present

Jason Darby, DOE
Spencer Gross, ORSSAB Support Office
Dick Ketelle, UCOR
Pete Osborne, ORSSAB Support Office
Wanda Smith

Six members of the public were present.

Liaison Comments

Mr. Adler – no comments

Ms. Cange – Ms. Cange said that on Thursday, May 2 the DOE EM Program celebrated all of the accomplishments since the program's inception in 1983. A number of dignitaries including Dave Huizenga, the Senior Advisor for the DOE EM Program in Washington, DC, TDEC Commissioner Robert Martineau, EPA Region 4 Deputy Administrator Stan Meiburg, a number of state and congressional representatives, and several hundred guests attended the event. A video was premiered as part of the DOE oral history project that featured three former Oak Ridge Office managers who had key roles in advancing the EM Program in Oak Ridge.

On Friday, May 3 Tennessee Senator Lamar Alexander participated in a round table discussion at Y-12 National Security Complex about mercury issues at Y-12. Senator Alexander followed the discussion with a press conference with DOE Oak Ridge EM Manager Mark Whitney, Mr. Martineau, and Mr. Meiburg where they talked about the Outfall 200 Project at Y-12 to help capture mercury before it enters Upper East Fork Poplar Creek, which runs through Y-12.

Ms. Cange said DOE EM Headquarters has provided the site offices guidance on formulating their FY 2015 budget requests. Oak Ridge EM is busy developing several budget planning scenarios for the FY 2015 request. She said an agreement has been reached with EPA and TDEC on out-year planning milestones for FY 2016 and beyond.

Ms. Jones – no comments

Mr. Owsley – no comments

Public Comment

None

Presentation

The presentation for the evening was on the 2013 Remediation Effectiveness Report (RER) by Mr. Darby and Mr. Ketelle. The main points are included in Attachment 1.

Mr. Darby began by saying the RER was created in 1996 to consolidate in one location all of the available monitoring data being collected on the Oak Ridge Reservation (ORR). The purpose of the RER is to determine the effectiveness of remedial actions in achieving a stated goal and compliance with long-term stewardship requirements. Mr. Darby said all the remedial action decisions that have been made to date are reviewed to see what the remediation goals were. The data collected since those actions were taken are evaluated to see if the goals are being met.

Another component of the RER is the long-term stewardship evaluation of areas where remediated waste was left in place and could cause harm to human health and the environment if stewardship controls are not working. Mr. Darby said various controls are in place to protect individuals from harm. The controls are inspected annually to make sure they are effective. Controls could be a cap over a disposal area or fencing to prevent intrusion.

Mr. Darby explained that while the title of the document is the 2013 RER the information it contains is based on data gathered during FY 2012. Based on that information determinations are made on the effectiveness of remedial actions. If actions are not performing as expected additional actions or recommendations could be made to ensure effectiveness. Mr. Darby said

recommendations could be made if monitoring is not adequate, additional parameters are needed, or monitoring frequency needs to be increased.

Mr. Darby noted the 2013 RER long-term stewardship verification results (Attachment 1, page 3). Fifty-five sites, totaling more than 200 checks, were evaluated. He said an additional appendix to track slab stewardship was added. No new issues or recommendations were identified.

Mr. Ketelle provided more detail on some of the sites around the ORR. He began by discussing some mercury reduction projects for Upper East Fork Poplar Creek (UEFPC) (Attachment 1, page 4). Five different projects were undertaken including the installation of mercury traps in selected storm drain locations in the western end of Y-12. He said the traps have been effective in removing free mercury. A treatability study and conceptual design had been done for the proposed mercury treatment plant at Outfall 200. A soil treatability study was done to determine how to stabilize mercury in soil so it can be disposed without causing risk to the environment. Designs were completed to retrofit drains at some of the process buildings at Y-12 to prevent additional releases of mercury to the environment, and five tanks were removed that had been used in mercury-related processes at Y-12. They were characterized and disposed offsite.

Another significant project that was completed was soil remediation at the Old Salvage Yard as well as three phased construction completion reports for three projects that had been completed earlier.

Mr. Ketelle showed a map of UEFPC at Y-12 (Attachment 1, page 5) that shows the locations of Outfall 200, the Big Springs Water Treatment System that treats mercury contaminated water, and monitoring Station 17 where UEFPC leaves Y-12. He explained that stippled and shaded portions of the map indicate areas of groundwater contamination.

Mr. Ketelle showed a chart of mercury flux and concentrations at Station 17 (Attachment 1, page 6). The lower portion of the chart shows annual rainfall from 2000 to 2012 that indicates when rainfall levels varied above or below the average rainfall for this area, about 54 inches per year. The upper portion of the chart shows that mercury discharges at Station 17 closely follow rainfall amounts. One part of the upper chart notes in red when the West End Mercury Project was underway in 2009-2011 to remove mercury from storm drains in the western portion of Y-12. During that period mercury flux and concentrations increased at Station 17 because the system was disturbed upstream.

Mr. Ketelle showed a map of the East End Volatile Organic Compound plume on the east end of Y-12 that extends offsite (Attachment 1, page 7). The plume used to extend farther to the east. The stippled area indicates where the most success has been achieved in reducing the plume concentrations through a pump and treat system. The RER includes tables that indicate the amount of contaminants that have been removed and treated.

Mr. Ketelle then discussed activities in Bear Creek Valley. He showed a map of the area (Attachment 1, page 8) and described the various sites within the three zones of the Bear Creek Valley watershed area. In the Bear Creek Valley Record of Decision (ROD) three land use zones were established. Zone 3 is designated as a waste management area. Zone 1 has a cleanup goal for unrestricted use, and Zone 2 is buffer that separates the clean Zone 1 and the active waste disposal areas of Zone 3. Past disposal activities in Zone 3 have resulted in widespread groundwater contamination. A number of monitoring locations are shown in the three zones, and sampling is done continuously for flux of uranium and nitrates. A number of groundwater wells are sampled regularly in Bear Creek Valley and farther to the west where Bear Creek turns north toward Lower East Fork Poplar Creek.

Mr. Ketelle showed a chart of uranium flux for Bear Creek Valley from 2001 to 2013 (Attachment 1, page 9). Again it indicates flux closely follows rainfall amounts. There are two locations where there are uranium flux goals based on the Bear Creek ROD. One is at BCK 12.34 for uranium discharges from the S3 Ponds. Another is at integration point BCK 9.2. BCK 12.34 flux goals have been met six of 11 years when rainfall is at or below average. The flux goal for BCK 9.2 has never been met.

The chart on page 10 of Attachment 1 shows the breakdown of the uranium and nitrate contaminants for Bear Creek Valley.

Mr. Ketelle then discussed activities at East Tennessee Technology Park (ETTP). A list of accomplishments during FY 2012 is noted on page 11 of Attachment 1. Much of the work at ETTP has been decontamination and demolition (D&D) work, but Mr. Ketelle noted an activity not related to D&D. The chromium water treatment system at Mitchell Branch went into operation in 2012. The system collects groundwater contaminated with hexavalent chromium that was seeping into a storm drain and discharging into Mitchell Branch. Monitoring of groundwater and surface water at ETTP indicates contaminate conditions are generally stable.

ETTP is separated into Zone 1 and Zone 2. Zone 1 is the area that surrounds the main industrial portion of the site (Attachment 1, page 12). The left side of the map shows the status of exposure unit cleanup in Zone 1. The map on the right is of Zone 2 exposure unit cleanup. Green areas are complete, yellow areas have incomplete characterization, and red areas are where remedial actions are required on soils. Mr. Ketelle said since Zone 2 is the primary industrial area where building demolition of former process buildings is underway there is residual contamination that can't be accessed until all of the buildings are gone.

Page 13 of Attachment 1 shows a list of activities completed in FY 2012 in Bethel Valley. Mr. Ketelle said a number of the projects were D&D projects and the conclusion of projects funded by the American Recovery and Reinvestment Act. One of the most notable projects completed in FY 2012 was the excavation and disposal of Tank W-1A from the central campus of Oak Ridge National Lab (ORNL). That had been a project that experienced several stops and starts over a number of years.

Another significant accomplishment was the closure of Solid Waste Disposal Area 3 and the contractor's landfill on the west end of Bethel Valley.

Monitoring of surface water, groundwater, and aquatic biota are ongoing projects in Bethel Valley. Page 9 of Attachment 1 is a map of Bethel Valley surface water monitoring locations. Mr. Ketelle said there was a mercury spill at Building 4501 that resulted in a legacy of mercury discharges. Some of the discharge was going out with storm water to White Oak Creek. The left side graph on page 15 of Attachment 1 shows mercury concentrations from 2004 to 2012 at the 7500 Bridge in Melton Valley, the exit pathway for surface water from the lab, and at monitoring location WOC-105. Mercury concentrations were reduced significantly beginning in 2007 when basement sump water in Building 4501/4505 was routed for treatment. Despite a couple of spikes, the concentrations are generally below the ambient water quality criteria of 51 parts per trillion, TDEC's limit for mercury in surface water.

The right hand chart shows mercury concentrations in fish tissue at several locations. Concentrations in fish from the middle part of White Oak Creek in plant area have dropped below the .3 part per million regulatory threshold, the EPA limit for consumption of fish tissue. Mr. Ketelle said this is the only place on the reservation where that goal has been accomplished.

Mr. Ketelle said the Core Hole 8 plume collection system was refurbished in FY 2012. As a result strontium-90 levels in White Oak Creek at the 7500 Bridge decreased to Bethel Valley ROD goal levels. Prior to the refurbishment strontium-90 levels exceeded ROD goals (Attachment 1, page 16).

In Melton Valley, ROD actions were completed in 2006. Remedy operations and monitoring have been conducted since then (Attachment 1, page 17). Mr. Ketelle said there are a number of downgradient collection trenches around caps in Melton Valley to collect seepage. Water collected varies from a half-million gallons to 1.5 million gallons a month depending on the season. Mr. Ketelle said it was discovered that there were some problems with the Solid Waste Storage Area 4 downgradient collections trench wells. During FY 2012-13 the wells were refurbished, and the system is now working better than before the refurbishment.

Monitoring in Melton Valley continues to demonstrate effectiveness of the hydrologic isolation of buried waste. Monitoring also continues to evaluate the recovery of the aquatic ecosystem. Mr. Ketelle said there have been noted improvements in species diversity.

A map of Melton Valley and surface water monitoring locations is noted on page 18 of Attachment 1. The map also shows major capped areas where groundwater monitoring is done. The red lines are downgradient collection trenches. Mr. Ketelle said the large area caps have done a good job of keeping water from getting into the waste areas. By comparison, he said the smaller caps had not performed as well as the larger ones because water adjacent to the caps would get into the waste areas.

White Oak Dam is the integration point where surface water is sampled continuously. Mr. Ketelle said radionuclides are the risk-producing issues in surface water at ORNL. The three major contaminants are strontium-90, cesium-137, and tritium. Goals for those radionuclides at White Oak Dam were attained even before the Melton Valley remediation was completed, which is an indication that hydrologic isolation is an effective remedy for the discharges (Attachment 1, page 19).

Mr. Ketelle reviewed Melton Valley Exit Pathway and offsite groundwater issues (Attachment 1, page 20). Earlier detection of DOE-related contaminants in the onsite exit pathway monitoring wells led to the installation of several offsite monitoring wells on private property on the west side of the Clinch River. In addition DOE has provided utility water to a number of households on that side of the river. DOE-related contaminants were detected in the first round of sampling in the newly-installed offsite wells in 2010, but no similar detections have been observed since. Monitoring continues at 16 DOE off-site wells and seven offsite residential wells.

Offsite monitoring also continues in Lower East Fork Poplar Creek and in Lower Watts Bar Reservoir/Clinch River/Poplar Creek (Attachment 1, page 21). Mercury concentrations in fish in Lower East Fork continue to exceed EPA criteria. Mr. Ketelle said a number of investigations are underway to examine soil, sediment, and surface water and mechanisms to prevent mercury from being taken up in fish tissue.

In Lower Watts Bar Reservoir PCB levels in fish have been trending downward and mercury levels in fish in Lower Watts Bar are below EPA criteria.

Mr. Ketelle reviewed a number of issues and recommendations that were included in the 2013 RER (Attachment 1, page 22) some of which continue from previous RERs. Five issues were closed from the 2012 RER.

The 2013 RER is available for public review and comments on the document are due to Mr. Darby (darbyjd@emor.doe.gov) by July 1.

After the presentation a number of questions were asked. Following are abridged questions and answers.

Mr. Hemelright - Has the Land Use Manager program helped with the RER? Mr. Ketelle – Yes. The Land Use Manager is operating very well. We have a lot of the site information in it. It allows us to more easily track the inspections processes. It's proving to be very beneficial.

Mr. Bell – What do you do with the water that is pumped from the solid waste storage areas? Mr. Ketelle – We pump it into the main wastewater treatment plant at ORNL. All of that goes through piping into the process waste treatment system where radionuclides, organics and mercury are removed before the water is discharged.

Mr. Valunas – Is the new mercury treatment plant designed to bring mercury levels down to the goal during the rainy season or dry season or both? Mr. Ketelle – Right now it's in a conceptual design level. We're still waiting for money to take the next step. The effluent goal at present is set to be consistent with 200 parts per trillion for the ROD for Lower East Fork Poplar Creek. Mr. Valunas – What is the amount of water to be treated? Mr. Ketelle – Right now the capacity being discussed is 1,500 gallons per minute. There will be some storm water that bypasses during flows of that capacity. Mr. Valunas – Is the increase in mercury from added rain due to the force of the flow or the volume of the flow? Mr. Ketelle – There are a couple of answers to that. There is still residual contamination in the storm drains so flow velocities help mobilize contaminated sediment that is still in there and that pushes mercury out. The regulation is for total mercury, both the dissolved part and mercury contained in or on sediment. If there is mercury contaminated sediment back in the pipe and flow velocities increase during storms some of that sediment is being pushed out. Also elevated groundwater levels because of above average rain causes more mobilization of mercury from material in the soil outside of the pipe. So there are multiple causes of increasing mercury. And there is still a lot of elemental mercury outside of the buildings and storm drains. Mr. Valunas - In the one area where there is less mercury in the fish, is that perhaps all the mercury has been washed away? Mr. Ketelle – No, there is still elevated mercury in the basement sump water and that's being diverted to treatment.

Ms. Smith – How did the PCB levels in fish in Watts Bar decrease? Mr. Ketelle – Over time PCBs in the environment get buried in the sediment so as sediment accumulates in the floor of the lake less and less gets in the water column and fish. Ms. Smith – I do not eat fish from Watts Bar. Is it OK to eat fish now? Mr. Ketelle – I can't say anything about eating fish. The state is responsible for those postings. Mr. Owsley – The fish consumption advisory remains that most people should limit the number of servings of fish during a month. It also advises pregnant women and young children to avoid consumption of any fish. It is simply an advisory to limit the amount of fish eaten over a given period.

Committee Reports

Board Finance & Process – Mr. Paulus reported that the committee did not meet in April because the meeting time conflicted with the EM SSAB Chair's webinar on April 25.

He said the committee decided to change its meeting day from the second Thursday after the board meeting to the second Wednesday to coincide with the change made by the Executive Committee.

Mr. McKinney reminded the board that the ORSSAB annual meeting will return to the Holiday Inn in Pigeon Forge on Saturday, August 17. Work continues on the agenda for the meeting and any activities on Friday, August 16.

Mr. McKinney said volunteers are needed for the Nominating Committee for FY 2014 board officers. He asked that anyone interested in serving on the committee to contact staff.

EM – Ms. Cook reported that the committee will not meet in May in lieu of a tour of the Transuranic Waste Processing Center on Wednesday, May 22 at 2 p.m. All board members are welcome to go on the tour and should contact staff if interested. The next scheduled meeting will be June 19.

At the April meeting, the committee received an update on the Uranium-233 Disposition Project.

There were two additional called meetings on the Groundwater Strategy Workshops on April 30 and May 2. Dan Goode with the U.S. Geological Survey, who is acting as the committee and board liaison, provided the updates on the progress and status of the workshops.

Public Outreach – Mr. McKinney reported that the committee did not meet in April. The next meeting is scheduled for May 21. The topic for that meeting will be on signage and stream postings around the ORR. The Stewardship Committee has been invited to attend that meeting.

Stewardship – Ms. Staley reported the committee voted to send drafts of three recommendations to the Executive Committee for review to place on the board's agenda for consideration. One recommendation is a re-statement of a previous recommendation to develop a fact sheet on transition of remediated parcels at ongoing mission sites. The second is a recommendation to conduct a test transfer of a remediated parcel, and the third is to make provision for a permanent DOE stewardship point of contact for the ORR.

The committee will not meet in May. The next scheduled meeting is on June 18.

Executive – Mr. Martin reported that the committee met on April 25 immediately following the EM SSAB Chairs' webinar. He said the webinar included presentations on the EM budget and ongoing activities at the various sites around the DOE complex.

He said there was discussion among some of the other boards, primarily Portsmouth and Paducah, about developing a chairs' recommendation on nickel. Mr. Martin said he would talk more with the EM Committee at its next meeting about beginning a draft recommendation.

Mr. Martin referenced the three Stewardship recommendations that came before the committee. He said Executive Committee members had some questions about the recommendations, but since there was no Stewardship representative at the meeting, the committee tabled the recommendations until a later date.

Mr. Martin reported that some travel requests submitted had been turned down by DOE. Mr. Adler explained that DOE has a list of approved of travel events and destinations. He said the issue is somewhat uncertain because of federal budget restraints at this time. He said a request was made for travel to a highly technical event, which was disallowed. For the most part, he said, other requests are granted if the travel is of value to the participating member and the board.

Mr. Martin noted that he and Mr. Jensen will roll off the board after the June meeting. He said Mr. Hemelright will be acting chair at the July, August, and September meetings. If for some reason he cannot be at one of those meetings, provisions are in the bylaws that a board member can be asked to chair a meeting. He encouraged board members to consider serving on the Nominating Committee and also consider a leadership position if asked to serve by the Nominating Committee.

The committee will meet on its new meeting day of the second Wednesday after the board meeting on May 22.

Announcements and Other Board Business

ORSSAB will have its next meeting on Wednesday, June 12 at 6 p.m. at the DOE Information Center.

Ms. Cange introduced Ms. Hall and Ms. Riley as the new student representatives to the board.

The minutes of the April 10, 2013, meeting were approved.

The Recommendation on Remaining Legacy Materials on the Oak Ridge Reservation was approved (Attachment 2).

The Recommendation on the FY 2015 DOE Oak Ridge Environmental Management Budget Request was approved (Attachment 3).

Federal Coordinator Report

No report.

Additions to the Agenda

None.

Motions

5/8/13.1

Mr. Jensen moved to approve the minutes of the April 10, 2013 meeting. Mr. Valunas seconded and the motion passed **unanimously**.

5/8/13.2

Mr. Hemelright moved to approve the Recommendation on Remaining Legacy Materials on the Oak Ridge Reservation (Attachment 2). Mr. Bell seconded and the motion passed **unanimously**.

5/8/13.3

Mr. Valunas moved to approve the Recommendation on the FY 2015 DOE Oak Ridge Environmental Management Budget Request (Attachment 3). Mr. Hemelright seconded and the motion passed **unanimously**.

The meeting adjourned at 7:37 p.m.

Action items

None.

Attachments (3) to these minutes are available on request from the ORSSAB support office.

I certify that these minutes are an accurate account of the May 8, 2013, meeting of the Oak Ridge Site Specific Advisory Board.

Chuck Jensen, Secretary

A handwritten signature in cursive script, appearing to read "David Martin".

David Martin, Chair June 13, 2013
Oak Ridge Site Specific Advisory Board
DM/rsg