Many Voices Working for the Community

Oak Ridge Site Specific Advisory Board

Approved November 13, 2013 Meeting Minutes

The Oak Ridge Site Specific Advisory Board (ORSSAB) held its monthly meeting on Wednesday, November 13, 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
Noel Berry
Alfreda Cook
Carmen DeLong
Lisa Hagy, Secretary
Bob Hatcher
Mary Hatcher
David Hemelright, Chair
Bruce Hicks, Vice Chair
Howard Holmes
Jennifer Kasten
Jan Lyons
Fay Martin
Greg Paulus
Belinda Price
Wanda Smith
Scott Stout

Members Absent

Scott McKinney
Donald Mei
Coralie Staley

Liaisons, Deputy Designated Federal Officer, and Federal Coordinator Present

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

Others Present

Dan Goode, U.S. Geological Survey
Spencer Gross, ORSSAB Support Office
Gracie Hall, Student Representative
Dick Ketelle, UCOR
David Martin
Norman Mulvenon
Pete Osborne, ORSSAB Support Office
Julia Riley, Student Representative
Steve Stow
David Watson

Twenty-one members of the public were present.

Liaison Comments

Mr. Adler – Mr. Adler reported there are no outstanding ORSSAB recommendations requiring a DOE response.

Ms. Cange – Ms. Cange reported that demolition of the last six units of the K-25 Building at East Tennessee Technology Park is progressing more quickly than expected. The latest projections have the building being completely demolished in the January-February 2014 timeframe. The entire project, including removal of debris, which was slated for completion later in 2015, is now projected to be complete in the summer of 2014. She reminded the board that the demolition of K-25 has been the largest decontamination and demolition project in the U.S. She said a celebration of the completion of the project will be held next summer.

Mr. Owsley – no comments.

Ms. Jones – Ms. Jones agreed with Ms. Cange's statements on the K-25 demolition and noted that a scoping meeting had been held on the demolition of the K-27 Building, and EPA is looking forward to the start of that project as well.

Public Comment

Mr. Mulvenon said the presentation for the evening on the groundwater strategy for the Oak Ridge Reservation (ORR) is of great importance and asked everyone to listen carefully.

Presentation

Mr. Goode's presentation was on was groundwater strategy for the ORR. The main points of his presentation are in Attachment 1. Mr. Goode acted as a liaison for ORSSAB during a series of workshops on groundwater that included representatives of DOE, EPA, and TDEC to develop a strategy for addressing groundwater issues on and near the reservation.

Mr. Goode described the process for developing a groundwater strategy document (DOE/OR/01-2628&D1) (Attachment 1, page 5). The workshop participants created a charter and agreed on four focus areas and conducted six workshops during FY 2013. The workshop topics were:

- Conceptual site model workshops (3)
- Plume and project ranking workshops (2)
- Groundwater use restriction workshop (1)

Mr. Goode said consensus was reached on key groundwater issues (Attachment 1, page 7) including:

- Additional off-site monitoring is needed to assess potential off-site risks.
- An ongoing ORR Groundwater Program is needed to systematically prioritize and investigate groundwater plumes and data gaps.

Mr. Goode said the resulting groundwater strategy document that was released in September 2013 made several key recommendations (Attachment 1, page 8) that will go to DOE Headquarters for consideration. The recommendations were for:

- Additional funding for an ORR Groundwater Program.
- An off-site groundwater quality assessment program to be undertaken in the FY 2014-2016 timeframe.
- A strategy to address plume rankings for the long term.

Mr. Goode provided more information about the off-site groundwater quality assessment program (Attachment 1, page 11). The details of the program have not been worked out, but he said it would focus on the southwest side of the ORR where there have been questions about off-site migration of contaminants (Attachment 1, pages 12, 13, 15, 16). The project should determine if additional monitoring wells are needed in the area.

Ms. Price asked if the term 'low concentrations" of contaminants meant below drinking water standards. Mr. Goode said there was one instance of a contaminant detected at levels above drinking water standards. Other detections were below standards (Attachment 1, page 20).

Mr. Bell asked if the one detection of technetium on the west side of the Clinch River was of concern. He asked if additional samples had been taken. Mr. Goode said the conditions that existed when the sample was taken no longer exist. Pumping on the west side of the river that could have drawn the technetium has been stopped. The quality assessment project would address this issue in detail. Workshop participants concluded that off-site migration may have occurred and deserves further investigation (Attachment 1, page 21). He said ORSSAB could consider making a recommendation of the quality assessment project.

Mr. Goode talked more about additional funding for the proposed ongoing ORR Groundwater Program. He said it would be part of the current Water Resources Restoration Program (Attachment 1, page 23). This would be in DOE's baseline budget that would be funded for years. He said ORSSAB could consider recommending that DOE secure additional baseline funding for the program that would include modeling to obtain maximum benefit of monitoring data and other information (Attachment 1, page 33).

Mr. Goode said, in his perspective as a liaison, the board could consider recommending that DOE broaden the technical support team beyond site contractors to include academic and government experts (Attachment 1, page 34).

Mr. Goode then discussed plume rankings on the ORR and the process used to determine which plumes were most important (Attachment 1, pages 36-40). He explained that the resulting table on page 39 of Attachment 1 is sorted by the pathway score to emphasize the importance of potential off-site migration, and reflect the first step in the ranking. He also noted that off-site migration was a primary area of interest given to him by the board's EM Committee when this project began. The plumes of the highest priority are noted on page 40 of Attachment 1. They include high pathway and overall plume scores.

He showed a figure of the some of the plume areas (Attachment 1, page 41). The hydrofracture site was had the highest overall plume score, and the highest hazard score. Measurements of strontium in wells above the hydrofracture suggest there may be migration of contaminants away from the site. Mr. Goode said there appears to be basic data and information about the hydrofracture site that is not being adequately archived. There are existing records that are not archived properly and could disappear. Mr. Stow said the records are currently stored in the history room at Oak Ridge National Lab and only a few people know they are there. He said study of those records and collection of information from people who were involved in the hydrofracture process could provide additional information about the characteristics of the hydrofracture site.

Regarding the plume rankings, Mr. Goode said the board could consider a recommendation on the rankings for management of site-wide groundwater remediation (Attachment 1, page 42). He also said the board could consider a recommendation that DOE collect, review, and archive records associated with hydrofracture disposal (Attachment 1, page 43).

After Mr. Goode's presentation additional questions were asked. Following are abridged questions and answers.

Ms. DeLong – Did you develop exposure pathway scenarios? What is your basis for toxicity? How did you validate all of this data? Basically, what was your sampling program? Mr. Goode – I don't have the answer to a lot of that. There is explicit discussion in the report. In the appendices there is a conceptual site model for each watershed where the plumes are discussed and what we know from the monitoring information and from the studies what we've learned about transport in those areas. From that there were specific ways of determining the numbers. As far as toxicity I can't tell the specific process for determining a 7 or a 5. I don't work on that much in terms of rankings, but it's a modified version of a standard hazard ranking procedure that EPA has. Ms. Cange – The purpose of this ranking is not to establish a risk assessment under the CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act) guidelines. A risk assessment is normally prepared when making decisions regarding cleanup to help determine if cleanup is warranted and to establish cleanup levels and guidelines. This ranking was a collaborative effort among all the people in the group to try to help to identify which plumes were of the highest concerns regarding all of the various criteria. It is for the purpose of developing a characterization plan and collecting more information. It's not the same as performing a risk assessment to make cleanup decisions. That is a process that will be followed later when we get to those cleanup decisions. Mr. Goode – In the appendices of the groundwater document is a list of questions that DOE asked the three agencies. One of the responses from EPA underscored that off-site detections that have occurred so far do not rise above the level where EPA tells DOE it needs to do something beyond groundwater use controls.

Mr. Hicks – I notice that the focus of the group was on the transport to off-site areas. Suppose the consideration had been on what the hazards are. Would the selection of important plumes been different? Mr. Goode – Yes. The hydrofracture has the highest hazard score. But it is not the plume selected for short-term action. In the charter for the team was the concept of focusing on off-site migration. It was determined early on that was an important factor.

Mr. Paulus – When you were talking about the well samples west of the Clinch River, the one private well with the one bad sample, you used the term 'it could have come from the reservation.' Why do you say that? Mr. Goode – I don't know whether it did or didn't. Mr. Adler – In that instance it was a solvent. Those compounds, volatile organic compounds (VOCs) are used in all types of applications. They are used both on and off the reservation. This area is next to the former Atomic City racetrack. There is a lot of agriculture activities where degreasing of tractors is done which could result in some discharge to the ground and ultimately getting in groundwater. So these VOCs are not unique to Oak Ridge's former industrial operations. We have VOCs underneath the reservation that came from Oak Ridge operations, but that's not necessarily the case where VOCs were observed off the reservation. The technetium that was detected, however, had to have come from Oak Ridge operations. Mr. Ketelle – The VOC detections and the technetium detection were not in a private well. They were in a DOE monitoring well on the east side of the Clinch River. In the first sampling round we conducted after aggressive development of the well, we saw those contaminants there. We have not seen them in about 10 subsequent samples. Our conclusion is we probably drew the contaminants into the well during the development process since they don't persist during any additional samples. We pumped hundreds of gallons of water out of these wells, drawing the water level down hundreds of feet. The wells have been very slow to recover. They don't produce very much water. Two of the wells have not recovered from the summer of 2010. It is a fractured rock system and not a good water resource. The water does not flow at high velocity with great yields. Mr. Adler – (to Mr. Bell) I understand your earlier comment about if you get an unexpected result you repeat it to see if you get it again. In this case, the result was a very high

quality result. While the measured value was well below the drinking water standards it was also well above the detection levels for quantification limits, so we think it was a real measurement well outside the error limits. So we're confident it was a measured presence of technetium in the well.

Ms. Hall – You've said the focus was on pathways because that deals with migration. Are you going to deal with the hazard rankings and all the implications of that or is that someone else's job? Or are you going to do it after migrations are addressed? Mr. Goode – It's something of a two-step procedure. What I've highlighted [on slide 40, Attachment 1] are the plumes that came out of this ranking procedure as the highest priorities. First they looked at plumes that were in the highest category for the pathway score, and that's how the table is sorted. And then the overall plume ranking was considered. Only the high overall plume score was used to select the highest five or six plumes. Keep in mind the overall plume score also has the pathway score in it. It's really weighted twice with the pathway. Out of the highest ranked pathways the projects identified as the most important were the ones that also have high hazards. For future purposes we're hopefully going to work down this list.

Ms. Cange – I would like to re-emphasize that the purpose for this groundwater strategy was to come up with an agreed to path forward for additional investigation to allow for future cleanup decisions. The ranking is not the ranking for cleanup decisions. There was a lot of risk management decision making that went into the process to develop this list. Again, it was to guide us in where we want to collect additional data in order to support future cleanup decisions. It's intended to prioritize where we first want to direct our data collection activities. So all of the plumes that require remediation under CERCLA will be addressed as we go through the cleanup process. We intend this to be something that comprehensively looks at the groundwater across the reservation and develops a strategy that all three agencies can agree to for additional investigation and additional work before making cleanup decisions.

Mr. Hatcher – As a scientist for an impartial agency how do you think this process of looking at groundwater should proceed? Mr. Goode – No one should be alarmed at how it's going now. There is no emergency here. DOE is managing the site. They are protecting the health of the public and the environment from the contamination in Oak Ridge. When I began more than 30 years ago, Oak Ridge was one of the places you went to learn about groundwater monitoring and contaminant transport. This is a very complex process for science. It's still developing, and I think we need to move toward the kind of program that existed here. We can learn a lot during remediation with monitoring and with the activities that we change with our different remediation activities. I think there needs to be strengthening of scientific aspects of moving forward of understanding contaminant transport.

Mr. Bell – (to Ms. Cange) Did you say there would never be remediation of a plume? Ms. Cange – There will be decisions made under the CERCLA process regarding whether plumes will be remediated or not. This ranking system was developed as part of this strategy document was not intended to be the system to decide what may or may not be remediated. Mr. Bell – (to Mr. Goode) Did you say near the end of your talk that there would be no remediation of plumes? Mr. Goode – The point I was trying to make about hydrofracture disposal is that under practically any future scenario that I can envision that waste will be at that spot basically forever. As Ms. Cange said, there will be a program to deal with that to protect the public and the environment from hazards associated with that waste, but that waste is not going to leave that area. Mr. Bell – Do you think based on all the data you have looked at that there is a plume that needs to be remediated? Mr. Goode – I think there is some data suggesting migration of contaminants from the hydrofracture disposal volumes to fresh groundwater nearby. The first project we're talking about is investigating off-site transport in the area of Melton Valley (where the hydrofracture site is located) that will hopefully shed some light on the hydrofracture disposal as well as the other contaminants that have been detected. Mr.

Ketelle – We reported in the 2011 Five-year Review levels of strontium-90 in levels of 600 feet, which is above the hydrofracture injection zone. We've seen levels about 10 times the drinking water limit in saline water; it's still in briny liquids at that depth. There are wells farther away in Melton Valley and then picket wells by the Clinch River that are the last point at which we can sample. There is one of the wells in the north end of that picket line that we occasionally detect strontium-90 at depths of 500 feet at levels typically less than drinking water standards at that location. Mr. Goode – For each of the plumes there is an identification of data gaps and uncertainties that remain. We have data gaps identified for every single plume that we considered. Mr. Bell – I don't see that there is any indication that there is off-site migration of radionuclides. If that is the case why do you talk in terms of off-site migration being the important part of this study? I think the identification of these things on-site should be more mandatory. If you don't have anything in these wells near the river that are above drinking water standards, why would I think there is anything across the river? Mr. Goode – Your point is well taken and when the question was asked was it or was it not from the site I don't know.

Mr. Bell – On the idea of remediation a plume, one needs to understand what a plume is. It's not a channel. It's a broad area that may be acres of property that you're talking about remediating. I will bet that in our lifetimes we will not remediate any plumes. Mr. Goode – The word 'plume' is not a good word for us to use in this case. The plume concept comes from a smokestack where there is a point where everything is generated and it spreads out and disperses and gets less and less concentrated and covers a large area. That's not what's happening at this site in fractured rock. There are very limited, discreet pathways, more like channels and not plumes. Contaminants are migrating into a discreet, high permeability channel or conduit. You can think can think of it as an underground stream. Basically it's a small part of the rock that transmits water. That part is contaminated on-site and contaminants could move off-site, especially if pumping is going on nearby. The cleanup only has to focus on those discreet channels. Ninety-nine percent of the rock in those areas is not contaminated. That water is barely moving.

Mr. Martin – What about land use controls? Did you talk about this for groundwater off the reservation; are we heading in that direction now or are we going to continue on a volunteer type program? Mr. Adler – We did have a session on the potential role of land use controls and other non-engineered measures we might use to protect the public. One of the questions we asked the agencies to answer was if there would be the imposition of any additional groundwater use restrictions based on what we know and they answer was 'no.' But it was recognized that it was the most direct and effective way of preventing exposure. It is a tool we are using in limited areas in that small number of wells across the river where we've had these occasional detections, we've entered into licensed agreements with properties owners where we provide them water and they agree not to pump from their wells.

Mr. Watson – I'm with Oak Ridge National Lab. I want to make a comment along the line of Mr. Stow's as far as capturing corporate knowledge. In the 1990s we established the Field Research Center that studied the S-3 Ponds plume under the Office of Science. There are hundreds of publications from that. I just want to make sure that we don't lose that. We are still working there and doing sampling under another program called Enigma. There is a lot that can be learned from what we've done there in the past.

Committee Reports

Finance & Process – Mr. Paulus reported the committee did not meet in October as a result of the government shutdown. The next meeting will be November 21 at 4:30 p.m. and will be the last meeting until January 2014.

EM & Stewardship – Mr. Hatcher reported that the committee continued its work to merge and will

meet as the combined committee on November 20 at 6 p.m. at the DOEIC when it will discuss the groundwater strategy document and Mr. Goode's presentation on the document at this meeting.

Public Outreach – Ms. Lyons reported the committee has been discussing a number of topics. One is using carryover funds from the previous fiscal year to increase print advertisements in local newspapers and to have the ads have different looks and not rely on a template ad. The committee will work to increase the placement of Advocate newsletters in public places in surrounding counties. She asked board members to think about locations where they could take newsletters and distribute them.

She said the committee has decided to continue participation in the annual Earth Day celebration, but will no longer have exhibits at the Secret City Festival. The committee believes Earth Day is more relevant to the ORSSAB mission and is easier to staff since it is a one-day festival.

The exhibit at the American Museum of Science and Energy has been updated. She asked board members to go see it and invite others to go see it as well.

The Office of Management and Budget has approved ORSSAB's Public Environmental Survey. Ms. Lyons said the new survey will be distributed in 2014.

The committee will meet on Monday, November 18 at the DOEIC at 5:30 p.m.

Executive – Mr. Hemelright reported the committee did not meet in October since there was no ORSSAB meeting as a result of the government shutdown. The committee will meet on Thursday, November 21 at 5:30 p.m. at the DOEIC. He said the committee normally meets on the second Wednesday after board meetings, but this month was a schedule change. The committee will not meet in December and will resume on Wednesday, January 22 at 5:30 p.m.

Announcements and Other Board Business

ORSSAB will have its next meeting on Wednesday, January 8, 2014, at the DOE Information Center.

The minutes of the September 11, 2013, meeting were approved.

Federal Coordinator Report

Ms. Noe said this meeting was an experiment to set up an Internet 'hot spot' in the DOEIC so people who brought notebook computers could log onto the ORSSAB website and access the meeting materials posted on the website. She said each month meeting materials will be posted on the ORSSAB website when meeting packets are mailed. Anyone preferring to access materials via the Internet can ask to be removed from the meeting packet mailing list, which will save materials and postage.

Additions to the Agenda

None.

Motions

11/13/13.1

Mr. Paulus moved to approve the minutes of the September 11, 2013, meeting. Mr. Bell seconded and the motion passed **unanimously.**

The meeting adjourned at 7:55 p.m.

Action items

Open

None.

Closed

1. DOE will provide a link to budget volumes that provide descriptions of cleanup sites, their challenges, and funding profiles. **Complete:** The presentation provided by Terry Tyborowski at the EM SSAB Fall 2013 Chairs' Meeting provides an explanation of sites, challenges, and funding profiles. The presentation can be found at: http://energy.gov/sites/prod/files/2013/11/f4/EM%20Budget%20Update%20by%20Terry%20Tyborowski.pdf

Attachments (1) to these minutes are available on request from the ORSSAB support office.

I certify that these minutes are an accurate account of the November 13, 2013, meeting of the Oak Ridge Site Specific Advisory Board.

Lisa Hagy, Secretary

Dave Hemelright

Dave Hemelright, Chair
Oak Ridge Site Specific Advisory Board
DH/rsg

January 9, 2014