



Many Voices Working for the Community

Oak Ridge Site Specific Advisory Board

Monthly Meeting of the Oak Ridge Site Specific Advisory Board

Approved May 10, 2023 Meeting Minutes

The Oak Ridge Site Specific Advisory Board (ORSSAB) held its monthly meeting virtually via Zoom and in person at 1 Science.gov Way on Wednesday, May 10, 2023 at 6 p.m. Copies of referenced meeting materials are attached to these minutes. A video of the meeting was made and is available on the board's YouTube site at www.youtube.com/user/ORSSAB/videos.

Members Present

Atilio Anzellotti
Kris Bartholomew
Mary Butler
Harold Conner, Jr.
Paul Dill

Rosario Gonzalez
Noah Keebler
Amy Jones
Harriett McCurdy
Michelle Lohmann

Mike Mark
Christine Michaels
Michael Sharpe
Leon Shields
Bonnie Shoemaker

Members Absent

Thomas McCormick

John Tapp¹

Tom Tuck

¹Third consecutive absence

Liaisons, Deputy Designated Federal Officer, and Alternates Present

Melyssa Noe, ORSSAB Deputy Designated Federal Officer (DDFO), OREM
Roger Petrie, ORSSAB Alternate DDFO, OREM
Kristof Czartoryski, Tennessee Department of Environment and Conservation (TDEC)
Carl Froede, EPA

Others Present

Emily Day, UCOR
Joanna Hardin, OREM
Shelley Kimel, ORSSAB Staff
Heather Lutz, TDEC
Eileen Marcillo, TDEC
Sara McManamy-Johnson, ORSSAB Staff
Abby Newberry, OREM

Samantha Pack, UCOR
Sam Scheffler, OREM
L'Tonya Spencer, EPA
Erin Sutton, OREM
Laura Wilkerson, OREM

Five members of the public were present.

Liaison Comments

Ms. Wilkerson– Ms. Wilkerson began the meeting by updating the board on OREM cleanup progress at ORNL, including buildings 3005 and the U-233 Disposition Project, and Y-12. She noted DOE is accepting public comment on the groundwater plans. She said the contract to build the K-25 Viewing Platform at East Tennessee Technology Park (ETTP) had been awarded and a groundbreaking would happen this week.

Mr. Froede – No comments.

Mr. Czartoryski – Mr. Czartoryski introduced Heather Lutz TDEC program manager and the department's groundwater issues expert.

Presentation

Ms. Jones introduced OREM's Roger Petrie to present on OREM's East Tennessee Technology Park Main Plant Groundwater Proposed Plan.

Mr. Petrie noted that OREM is expecting two major milestones in its groundwater efforts with Records of Decision (ROD) on groundwater in the Main Plant Area, the topic of tonight's presentation, and for the K-31/33 Area, which will be covered in June. A third area, called Zone 1, will be discussed in the future.

Mr. Petrie provided a brief background of the history of the ETTP site (formerly known as K-25) and OREM's cleanup efforts to date. He discussed the cleanup strategy and timeline for the entire DOE Reservation (ETTP, Oak Ridge National Laboratory (ORNL) and Y-12 National Security Complex (Y-12) cleanup, how ETTP fits into that timeline, the scope of the proposed groundwater plan and how OREM evaluated a variety of options for the cleanup process, as well as how public input is integrated into the selection process.

In 1992 DOE joined regulatory agencies EPA and TDEC to form a Tri-Party Federal Facility Agreement to address cleanup on the DOE Reservation. Actions in the early 1990s addressed off-site contamination and high-risk/priority environmental issues. In the 2000s several Watershed Interim RODs were signed to address contamination sources and building demolition. Those actions continued until present day. All buildings have been removed and soil remediation should be complete very soon. So the agencies are shifting focus to groundwater.

He said the proposed plan features a proposed groundwater remedy that the three parties, DOE, EPA, and TDEC, believe will be the most appropriate cleanup remedy for this project. The scope of the plan covers six areas of groundwater contamination within the Main Plant Area. The preferred alternative is an active remediation using bioremediation and continued land-use controls that are already in place at ETTP, which, for example, prevent disturbing soil at certain depths if building new structures.

Mr. Petrie noted that in past actions public involvement has changed previous proposed remedies and that's why it's so important to get public feedback.

He outlined the six major contamination plumes that are being addressed in this proposed plan scope. He said there were others that would be addressed in follow-on decisions. He emphasized that this plan is the first phase of remediation and does not mean cleanup will be stopped in the Main Plant Area

following the proposed plan. An interim ROD will cover this project until all planned projects are complete and the ROD can be finalized. The main purpose of this interim ROD is to address volatile organic compounds (VOCs) in these groundwater plans.

Mr. Petrie noted that there are several alternatives considered in the proposed plan. He said that, by law, DOE must include a “no action” alternative, which details what would occur if DOE did nothing to address the contaminants. It is not something that would ever be accepted, but is there for comparison purposes.

He said alternative one for this ROD is the in-situ thermal treatment, which entails using large probes inserted into the ground used to heat up the contaminant. TCE is volatile and evaporates relatively easily in the atmosphere. However, because the concentration of the material in the soil is so high that is not feasible. Instead, the parties prefer the second option, which is in-situ bioremediation. It would mean inserting microorganisms into the contaminated areas that would break down and consume the TCE. That would bring the contamination down significantly, perhaps even enough that further action using thermal treatment would be possible. Alternative three is called soil mixing and involves mixing certain chemicals into the soil that would help neutralize the TCE. That option, along with enhanced bioremediation into deeper zones was an alternative that also was not selected.

Mr. Petrie briefly discussed the costs of each alternative as shown in the presentation. He said each alternative has to be compared with nine decision criteria required under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), one of which is cost. The others are protection of human health and environment; compliance with relevant standards; long-term effectiveness; reduction of toxicity, mobility and volume; short-term effectiveness; ability to be implemented; state acceptance; and community acceptance;

Mr. Petrie continued explaining how the preferred alternative, bioremediation, would remove contaminants of concern. He noted how the remedy aligned with the nine CERCLA decision criteria with community acceptance being part of why DOE is releasing the proposed plan – to seek public input.

DOE will work with EPA and TDEC to design the project, which will involve drilling wells to inject the microbes and associated support materials. The agencies will decide on the placement of the wells and frequency of injections as well as monitoring. They will also agree on success criteria. He noted there was a small demonstration of the technology at Oak Ridge National Laboratory.

Board members asked the following questions:

- Ms. Shoemaker asked what contaminants were being referenced. Mr. Petrie replied that the prominent one is cesium, which has a short half-life and DOE is seeing levels of cesium drop as it decays.
- Mr. Connor asked what the contaminants of concern for most of these plumes. Mr. Petrie said the majority VOC is trichloroethylene (TCE), which was used as a de-greaser for equipment. In fact, it is still used today as a cleaner. The issue at ETPP is the extremely large amounts that were needed as well as the long length of time it was in use.

- Ms. Shoemaker asked what other projects have used this technology. Mr. Petrie said only the ORNL pilot study had been done locally, but that other projects, including at the Department of Defense had successfully used the same technology. Ms. Shoemaker also asked about various water criteria levels in local water sources. Mr. Petrie said that until the groundwater sources are addressed, it will be difficult to know the exact impact because there are other sources outside DOE control. Ms. Shoemaker also asked about remediation of various classified burial grounds. Mr. Petrie confirmed that some had been remediated while others have not. He confirmed there are plumes that appear to originate in that area that would be part of future decisions. He also noted it is challenging to work in those areas due to the security and finding workers, such as well drillers, who also have the needed clearances.
- Ms. Michaels asked about how the quantity of microorganisms changed the process. DOE's Erin Sutton responded and said there are technologies where different types of microorganisms can be introduced, but in this instance the needed organisms are available locally and keeping native species is preferred.
- Mr. Bartholomew asked about the volume of area to be remediated and how much TCE was used. Mr. Petrie explained the measurements used and said while DOE has tried to do a historical evaluation of how much TCE was used, it was difficult to say how much was used because during the war-time operations the priority of record-keeping was very different than today. Approved disposal methods were also much different than current rules. He also noted the extremely large amounts of material ordered by DOE at that time. He noted DOE had done extensive surveys of some areas and has been able to generate 3D models of the contamination underground, however that sort of project is very expensive and not deemed a practical/useful approach to using cleanup funds.

Mr. Bartolomew asked about tracking the expansion of plumes. Mr. Petrie confirmed that is something DOE watches closely as injecting material into the plumes can cause expansion if not done correctly. That was also a reason to wait on using thermal remediation methods as evaporation can also cause expansion if not done properly.

- Ms. Butler asked what happens to the microorganisms after they inject contaminants. Mr. Petrie said there was some concern that due to the high concentration of TCE in these plumes that, while it can be a food source, it may also prove to be toxic. That is one of the issues to be worked out when evaluating how successful a project will be.
- Ms. McCurdy asked for specifics on the type of organisms being used. Mr. Petrie said they are a type of bacteria and the degradation of TCE is an anaerobic process.
- Mr. Anzelotti asked how the plumes interact with the environment based on the area's unique geography. Mr. Petrie briefly mapped out some of the area and said none of the contamination being discussed impacted residential areas. Mr. Anzelotti asked if the breakdown by the bacteria caused any greenhouse effect? Mr. Scheffler said at the magnitude that would result there would be no appreciable effect.
- Mr. Connor asked what happens if the remedy does not lower contamination to the levels that are

being aimed for? Mr. Petrie said there are other alternatives or active treatments that DOE may attempt, such as those mentioned previously. It's also possible to get a temporary waiver and continue monitoring until new technologies are available.

Ms. Lutz said TDEC believes the remedy will handle the plumes based on its common use and success in our area. She noted that there are additional follow-on projects planned, that this is just the beginning.

- Mr. Luther Gibson asked about other plumes. Mr. Petrie said follow on actions will evaluate those in future actions including the technetium contamination in some plumes. He noted that data DOE has from ongoing monitoring is the plumes are already decreasing naturally. Mr. Gibson asked how much contamination was caused by legacy operations versus demolition. Mr. Petrie said most was through legacy operations, however the technetium was aggravated by demolition of certain buildings.
- Mr. Rudy Weigel shared his support of the project and his experience working on the reservation that confirmed DOE's difficulty getting construction and other skilled labor employees that are also trained for the specific cleanup projects and with the needed security clearances.

Questions from the Public

- None

Public Comment

- Public Comment #1 – Mr. Luther Gibson shared comments on the board's budget recommendation and suggested additions. He also advocated in favor of additional focus on retiree pensions.

Board Business/Motions

- Mr. Shields asked for a motion to approve meeting minutes.
 - 5.10.23.1 Motion to approve February 8, 2023 meeting minutes
Motion made by Ms. Jones and seconded from the floor. Motion passed.
 - 5.10.23.2 Motion to approve March 8, 2023 meeting minutes.
Motion made by Ms. Jones and seconded by Ms. Butler. Motion passed.
- Mr. Shields asked for a motion to approve the budget recommendation.
 - 5.10.23.3 Motion to approve the Recommendation on the FY 2025 OREM Budget
Motion made by Ms. Jones and seconded by Ms. McCurdy. Motion passed.
- Mr. Shields asked for a motion to approve the recent Chairs Recommendation
 - 5.10.23.4 Motion to approve the EM SSAB Chairs Recommendation on implementation of recommendations by DOE

Motion made by Ms. Shoemaker and seconded by Ms. Butler. Motion passed.

Responses to Recommendations & Alternate DDFO Report

Ms. Noe told members that OREM had selected potential new members from applicants received during the recent recruitment. The membership packet is now under preliminary review by DOE headquarters. She also noted OREM is in the middle of planning for the Fall Chairs meeting in the first week of October. She said that will be a great opportunity for the entire board to meet their counterparts from other sites. She noted it would be held at the DoubleTree Hotel in Oak Ridge, and other activities, including a tour of the reservation are planned.

Committee Reports

Executive – None. Next meeting to be scheduled.

EM & Stewardship – None. Next meeting is May 24.

Additions to the Agenda & Open Discussion

None.

Action Items

None

The meeting adjourned at 7:20 p.m.

I certify that these minutes are an accurate account of the May 10, 2023, meeting of the Oak Ridge Site Specific Advisory Board.



Leon Shields, Chair



Michelle Lohmann, Secretary

June 14, 2023

Oak Ridge Site Specific Advisory Board

ML/smk