



*Many Voices Working for the Community*

# Oak Ridge Site Specific Advisory Board

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## *Monthly Meeting of the Oak Ridge Site Specific Advisory Board*

### **Approved September 11, 2019, Meeting Minutes**

The Oak Ridge Site Specific Advisory Board (ORSSAB) held its monthly meeting on Wednesday, September 11, 2019 at the DOE Information Center, 1 Science.gov Way, Oak Ridge, TN, beginning at 6 p.m. Copies of referenced meeting materials are attached to these minutes. A video of the presentation portion of the meeting was made and is available on the board's YouTube site at [www.youtube.com/user/ORSSAB/videos](http://www.youtube.com/user/ORSSAB/videos).

#### **Members Present**

Andrea Browning  
Richard Burroughs,  
Secretary  
Sarah Eastburn (call-in)  
Nannan Jiang  
Shell Lohmann, Vice Chair

Harriett McCurdy  
Marite Perez  
Georgette Samaras  
Bonnie Shoemaker  
Fred Swindler  
John Tapp

Rudy Weigel  
Robert Whitaker  
Amy Jones  
Leon Shields (call-in)

#### **Members Absent**

Leon Baker  
Bill Clark  
Noah Keebler  
Brooke Pitchers  
Ed Trujillo  
Dennis Wilson

#### **Liaisons, Deputy Designated Federal Officer, and Alternates Present**

Dave Adler, ORSSAB Deputy Federal Designated Officer, Department of Energy, Oak Ridge Office of Environmental Management (DOE-OREM)

Melyssa Noe, ORSSAB Alternate Deputy Designated Federal Officer (DDFO), OREM

Brian Henry, DOE, Y-12 Portfolio Federal Project Director

Kristof Czartoryski, Tennessee Department of Environment and Conservation (TDEC)

Connie Jones, U.S. Environmental Protection Agency (EPA) (call-in)

#### **Others Present**

Avi Duke, ORSSAB Student Representative, Oak Ridge High School

Roger Petrie, UCOR

Shelley Kimel, ORSSAB Support Office

Sara McManamy-Johnson, ORSSAB Support Office

3 members of the public were present.

Mr. Adler recognized incoming board members Andrea Browning, Amy Jones, Noah Keebler, Georgette

Samaras, and Robert Whitaker, and new student representative Avigail “Avi” Duke, a senior at Oak Ridge High School.

### **Liaison Comments**

**Mr. Adler** – None

**Mr. Czartoryski** – Mr. Czartoryski said TDEC’s Division of Remediation director, based in Nashville, was reassigned to oversee environmental cleanup and radioactive compliance activities in Oak Ridge. The new director for the division is Steve Sanders.

**Ms. Jones** – None

### **Presentation**

Ms. Lohmann introduced board members to Mr. Henry for an Update on the Outfall 200 Mercury Treatment Facility (MTF) and Y-12 Excess Facilities (see Attachment 1).

Mr. Henry said the MTF is one of OREM’s key projects to enable future cleanup at Y-12. He gave background information about the challenges OREM faces regarding mercury in Oak Ridge, but he added that mercury is not just an Oak Ridge problem – it’s a global problem. He said there are rivers and lakes in all 50 states that have fish that exceed the EPA recommended levels of mercury. This problem, he said, is largely due to atmospheric depositions from coal-firing plants.

Next, Mr. Henry showed board members maps to illustrate the creeks around the reservation. Upper East Fork flows through Y-12 and exits at Station 17, and he said the Interim Record of Decision goal for mercury concentrations in water leaving Y-12 at Station 17 is 200 parts per trillion (ppt). The primary purpose of the MTF is to meet that goal, which has not been met yet.

There are four main buildings where mercury was used in the processes: Beta 4, Alpha 5, and Alpha 4, and Alpha 2, and these are in the west end of the site. A series of storm networks in this area daylight at Outfall 200, and OREM has determined that Outfall 200 would be the spot where most of the mercury flux in the area could be captured.

In the early days of Y-12, about 24 million pounds of mercury was brought to the site for operations. Of that amount, 2 million pounds is still unaccounted for, although about 700,000 pounds of that 2 million is estimated to have been lost to the environment.

Mr. Henry said work on the MTF has been going on for a long time. He said the estimated completion date three to five years ago was 2020-2021, however regulatory delays combined with added complexity to the design increased the timeline.

At the headworks, the water will be intercepted at the outfall, it will undergo grit separation, and it will be piped about 3,000 feet to the treatment site at the east end. Mr. Henry said the design was split up this way because there was not space at the headworks to also have the treatment site.

The treated water will be discharged into the Upper East Fork Poplar Creek.

Next, Mr. Henry described the planned treatment process for MTF. The purpose of the headworks site is collecting the water. The base flow of the creek is up to about 3,000 gallons per minute. That water will be collected in what will basically be base flow wet wells that will have pumps and grit separation. Additionally, though, the headworks will capture storm flows, which can get up to 40,000 gallons per minute. To help capture these increased storm flows, the facility will also include a 2-million-gallon

storage tank. He said that the first flush after a heavy rain is when a lot of the mercury is released.

Collected water will be piped down to the treatment plant, where the process is similar to a standard potable water treatment plant.

Next, Mr. Henry showed a video about MTF.

He then continued, adding that although the Interim ROD goal is 200 ppt, there's a State ambient water quality criteria of 51 ppt. He said mercury concentration goals are based on getting quantities down low enough to prevent accumulation in fish. He said safe levels for mercury in water is relative to what the water will be used for. He added that the federal drinking water standard is 2,000 ppt; 51 ppt is the quantity at which fish living in the water would be safe for humans to consume.

Mr. Henry said a lot of activity has occurred at the Outfall 200 MTF site, with early site preparations beginning in December 2017 and finished in January 2019. He said national security missions at Y-12 create challenges for the project.

The construction contract for MTF was awarded in December 2018 to APTIM – North Wind Construction with a four-year performance period. They are actively at the site working, he said. Excavations are underway at both the treatment plant site and headworks, and recent hot weather has proven beneficial that excavation work. He said the plan is to complete excavation at the headworks by November so concrete installation can begin before winter.

Mr. Henry said DOE commits to completing the project by September 2025. The project is not funding-constrained, so he said he anticipates completion by about June 2024. We could be operational late Dec. 2023 – early finish date mid-2023. Good weather and good contractor performance, we could be up sooner.

Next, Mr. Henry discussed risk-reduction accomplishments at Y-12. He said crews removed about 4 tons of mercury during risk-reduction activities at the West COLEX facility. During those activities, crews encountered challenges related to mercury vapors but were able to use those challenges to identify processes to use moving forward. Additionally, he said, crews installed geo-membrane liners in the facility's footprint to prevent rainwater infiltration.

Another accomplishment Mr. Henry cited related to about 4,000 cubic-yards of soil that was being held in the Disposal Area Remedial Action (DARA) Soils Storage Facility. He said OREM worked with regulators to re-characterize, segregate, and use the existing onsite disposal facility for the majority of the soils, resulting in significant cost savings.

Next, Mr. Henry said Congress began providing excess facilities risk-reduction funding in FY 16, and OREM began characterization activities on the Biology Complex at Y-12 with that funding. In FY 18, Congress provided \$125 million to fully fund removing those buildings and cleaning up the soils, so deactivation and decontamination is currently underway at the Biology Complex.

After the presentation, board members asked the following questions:

- Mr. Weigel asked whether sludge pits containing mercury by Alpha 4 have been clean up and filled in.
  - Mr. Henry said he was not aware of sludge pits, but he would check on that. He said the area he knows of is the Alpha 2 basement and an area outside of Alpha 2 at the Big Springs Water Treatment Plant.

- Mr. Jiang asked whether the MTF will differentiate based on methylation of the mercury.
  - Mr. Henry said Upper East Fork Poplar Creek is almost entirely elemental mercury. He said within Y-12 and the upper reaches outside the main plant is elemental mercury. Further down the creek and at the Lower East Fork Poplar Creek is where the levels of methylmercury increases.
- Mr. Jiang then asked what happens to the mercury after the treatment.
  - Mr. Henry said the MTF basically removes the solids from the water. The solids become sludge and are dried. He said the resulting sludge should not be considered characteristically hazardous waste.
- Mr. Swindler asked if there are any commercial outlets for the captured mercury.
  - Mr. Henry said there is currently a mercury export ban and there are more than 1,200 metric tons of very clean mercury stored at Y-12. He said that option has been explored, and there's a lot just being stored. There's an effort to create a central storage repository for mercury, he said.
- Ms. McCurdy asked where that repository is located.
  - Mr. Henry said he wasn't sure whether that project was in a stage in which he could comment on it publicly. Mr. Adler said that, by his recollection, during initial discussions in Congress, Senator Lamar Alexander specifically said it would not be in Oak Ridge. Mr. Adler said Oak Ridge may end up being a storage location for its own mercury, but it would not be a repository for the nation's mercury.

### **Public Questions**

- Mr. Luther Gibson said he had reviewed an Removal Action Memorandum written in 2010 for Y-12 facilities. He said there are several more excess facilities listed in it than were discussed during the current meeting, and he asked if they were excess facilities talked about during the presentation.
  - Mr. Henry said there are a lot of excess contaminated facilities, both at Y-12 and ORNL, and there is not currently enough funds to address. He said they are part of the lifecycle baseline planning for the cleanup of Y-12 and ORNL that will stretch out over the next several decades.
- Mr. Gibson next asked whether the Outside Storage Vault was on the list of facilities to be addressed.
  - Mr. Henry said the risk for that facility did not rise to the levels of some of the others, so it is on OREM's radar but not currently scheduled.
  - Mr. Wiegel added that there was a concrete slab, liner, and leachate added at that particular facility.

### **Public Comment**

- Mr. Luther Gibson welcomed new student representative Avi Duke.

### **Board Business/Motions**

1. None

### **Responses to Recommendations & Alternate DDFO Report**

Ms. Noe said the FY 20 draft work plan has been assembled and is in the members' current meeting packets. She urged members to sign up for issue groups, particularly if interested in participating in the issue group for

October’s meeting about U-233 processing. Next, she outlined a new process that will be used for issue groups. She added that ORSSAB’s Budget Recommendation has been received by OREM and it has been sent to headquarters.

Ms. Noe then congratulated ORSSAB’s new executives, Shell Lohmann, chair; Leon Shields, vice chair; and Bonnie Shoemaker, secretary.

**Committee Reports**

Executive – Ms. Lohmann said members recapped the Annual Planning Meeting and reviewed survey responses received. She said responses were generally very positive regarding the meeting, the facilities, and the board dinner. Executive members also discussed the FY 20 draft work plan and issue group plans.

EM & Stewardship – Ms. Lohmann presented the EM & Stewardship report for Mr. Shields, who was on travel. She said the most recent EM & Stewardship Committee meeting was in June, during which time members discussed the 2020 budget recommendation. She noted that was the recommendation Ms. Noe advised had been received at OREM, and she added ORSSAB should be receiving acknowledgement of that soon. She thanked everyone who participated in both in-person and email discussions for that recommendation. Mr. Shields added by phone that members interested serving as chair or vice chair on the EM & Stewardship Committee should notify staff.

**Additions to the Agenda & Open Discussion**

None

**Action Items**

*Open*

None

*Closed*

None

The meeting adjourned at 6:50 p.m.

I certify that these minutes are an accurate account of the September 11, 2019, meeting of the Oak Ridge Site Specific Advisory Board.



Michelle Lohmann, Chair  
Oak Ridge  
Site Specific Advisory Board

ML/sbm



11/13/19 Bonnie Shoemaker, Secretary  
Oak Ridge  
Site Specific Advisory Board