Oak Ridge Site Specific Advisory Board Monthly Meeting

Wednesday, May 14, 2014
6 p.m., DOE Information Center
1 Science.gov Way
Oak Ridge, Tennessee

The mission of the Oak Ridge Site Specific Advisory Board (ORSSAB) is to provide informed advice and recommendations concerning site specific issues related to the Department of Energy's (DOE's) Environmental Management (EM) Program at the Oak Ridge Reservation. In order to provide unbiased evaluation and recommendations on the cleanup efforts related to the Oak Ridge site, the Board seeks opportunities for input through collaborative dialogue with the communities surrounding the Oak Ridge Reservation, governmental regulators, and other stakeholders.

CONTENTS

Oak Ridge Site Specific Advisory Board
Wednesday, May 14, 2014, 6:00 p.m.
DOE Information Center
1 Science.gov Way, Oak Ridge, Tenn.

AGENDA

I. Welcome and Announcements (D. Hemelright) 6:00–6:05
   A. Next Meeting: Wednesday, June 11. Presentation Topic: Community Reuse Organization of East Tennessee Efforts at the East Tennessee Technology Park
   B. Introduction of New Student Representatives (S. Cange)

II. Comments from the Deputy Designated Federal Officer, and the DOE, EPA, and TDEC Liaisons (S. Cange, D. Adler, C. Jones, J. Owsley)..... 6:05–6:20

III. Public Comment Period (L. Hagy)..... 6:20–6:30

IV. Presentation: Update on the Transuranic Waste Processing Center (Laura Wilkerson and Karen Deacon) 6:30–7:05
Question and Answer Period 7:05–7:20

BREAK..... 7:20–7:30

V. Call for Additions/Approval of Agenda 7:30

VI. Motions 7:30–7:35
   A. April 9, 2014, Meeting Minutes (L. Hagy)
   B. Recommendations on Additional Off-site Groundwater Migration Studies (J. Kasten)
   C. Recommendations on Additional Waste Disposal Capacity on the Oak Ridge Reservation (A. Cook)
   D. Recommendations on the FY 2016 DOE Oak Ridge Environmental Management Budget Request (D. Hemelright)
   E. Second Consecutive Absence: DeLong, Paulus (D. Hemelright)

VII. Responses to Recommendations & Comments (D. Adler)..... 7:35–7:40

VIII. Committee Reports..... 7:40–7:50
   A. Environmental Management/Stewardship (B. Hatcher/C. Staley)
   B. Public Outreach (S. McKinney)
   C. Executive (D. Hemelright)

IX. Federal Coordinator's Report (M. Noe) 7:50–7:55

X. Additions to Agenda 7:55–8:00

XI. Adjourn 8:00

Oak Ridge Site Specific Advisory Board

May 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3
4	5	6	7	8	9	10
11	12	13	14 Monthly SSAB meeting 6 p.m.	15	16	17
18	19	20	21 Environmental Management & Stewardship Committee 6 p.m.	22	23	24
25	26 **Memorial Day DOE/Staff Holiday**	27 Public Outreach Committee 5:30 p.m. teleconference	28 Budget & Process Committee 5:30 Executive Committee 6 p.m.	29	30	31

All Meetings will be held at the DOE Information Center, Office of Science and Technical Information, 1Science.gov Way, Oak Ridge unless noted otherwise.

ORSSAB Support Office: (865) 241-4583 or 241-4584 **DOE Information Center:** (865) 241-4780

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Board meetings on cable TV and YouTube	
Knoxville: Charter Channel 6, Comcast Channel 12	Sundays at 7 p.m.
Lenoir City: Charter Cable Channel 3	Wednesdays, 4 p.m.
Oak Ridge: Channel 12	Monday, May 26, 7 p.m.
Oak Ridge: Channel 15	Monday, Wednesday, Friday, 8 a.m. & noon
YouTube	http://www.youtube.com/user/ORSSAB

Oak Ridge Site Specific Advisory Board

June 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
8	9	10	11 Monthly SSAB meeting 6 p.m.	12	13 Secret City Festival Bissell Park	14
15	16	17	18 Environmental Management & Stewardship Committee 6 p.m.	19	20	21
22	23	24 Public Outreach Committee 5:30 p.m. teleconference	25 Executive Committee 6 p.m.	26	27	28
29	30					

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YouTube	http://www.youtube.com/user/ORSSAB

Many Voices Working for the Community

Oak Ridge Site Specific Advisory Board

Unapproved April 9, 2014, Meeting Minutes

The Oak Ridge Site Specific Advisory Board (ORSSAB) held its monthly meeting on Wednesday, April 9, 2014, 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
Lisa Hagy, Secretary
David Hemelright, Chair
Bruce Hicks, Vice Chair
Howard Holmes
Jennifer Kasten
Jan Lyons
Fay Martin
Scott McKinney
Donald Mei
Coralie Staley
Scott Stout

Members Absent

Noel Berry
Alfreda Cook
Carmen DeLong[1]
Bob Hatcher[1]
Greg Paulus[1]
Belinda Price
Mary Smalling
Wanda Smith

[1]Second consecutive absence

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 Deputy Designated Federal Officer
Jeff Crane, Environmental Protection Agency (EPA) (via telephone)
John Owsley, Liaison, Tennessee Department of Environment and Conservation (TDEC)
Melyssa Noe, ORSSAB Federal Coordinator, DOE-ORO

Others Present

Chloe Ashley, TDEC
Spencer Gross, ORSSAB Support Office
Gracie Hall, Student Representative
Pete Osborne, ORSSAB Support Office

Julia Riley, Student Representative
Ralph Turner

Fourteen members of the public were present.

Liaison Comments

Ms. Cange – Ms. Cange said work is nearing completion on the K-25 Building demolition project at East Tennessee Technology Park (ETTP). Work should be finished this summer, several months ahead of schedule. She said preparations are not complete to begin demolition of the K-27 Building, so the decision has been made to begin demolition of the K-31 Building, which is empty and ready for demolition. The change in sequencing allows heavy equipment and cleared workers to remain on site and continue working without interruption.

Ms. Cange said recent incidents at the Waste Isolation Pilot Plant (WIPP) in New Mexico have delayed shipments of transuranic waste from Oak Ridge to WIPP. Oak Ridge has sent both DOE and contractor personnel on detail to WIPP to help with resuming activities. Ms. Cange said other plans are being made to store transuranic waste in Oak Ridge until shipments can be resumed.

Ms. Cange said DOE Oak Ridge EM has received guidance from DOE Headquarters on developing the FY 2016 budget request. She said she has had meetings with some community representatives who have offered to help hold a public workshop on the FY 2016 budget request. She asked them to contact ORSSAB leadership to help plan the workshop.

Mr. Adler – Mr. Adler said there are no outstanding recommendations from the board that DOE needs to address. He noted that three recommendations were on the agenda for this meeting, but lacking a quorum to vote on those recommendations they were not considered. He said one of the proposed recommendations is on the FY 2016 DOE Oak Ridge EM budget request. That recommendation, he said, is somewhat time critical. He said if there is a quorum at the May meeting, DOE can pass the recommendation along with the budget request to DOE Headquarters. He said if it appears there will be no quorum in May some other method of considering the recommendation will be arranged.

The other two recommendations are timely, but not urgent, he said.

Mr. Crane – Mr. Crane said EPA and TDEC were working with DOE on the budget process of updating milestones and setting priorities.

Mr. Owsley – Mr. Owsley said the TDEC Bureau of Environment is being reorganized. Planning for the reorganization has been underway for two years, but implementation began recently. He said duties for a number of people have been re-assigned in order to reduce the number of supervisors and provide a career path for technical staff. Selections have been made for re-assigning staff for manager positions. Remaining staff will be reassigned as consultants, scientists, or environmental engineers. Mr. Hemelright asked if Mr. Owsley will continue to represent TDEC at ORSSAB meetings. Mr. Owsley said he will remain as director of the DOE Oversight Office in Oak Ridge, but changes within the management of the Federal Facility Agreement grant and the DOE Oversight grant could result in a different TDEC liaison at the ORSSAB meetings. The Federal Facility Agreement and DOE Oversight grants are provided by DOE to fund the TDEC offices in Oak Ridge.

Public Comment

None.

Presentation

The evening's presentation was on the "Strategic Plan for Mercury Remediation at Y-12" by Laura Wilkerson, the DOE Portfolio Federal Project Director for Y-12 Projects. The main points of her presentation are in Attachment 1.

She began by reviewing the history of mercury contamination at Y-12 National Security Complex. Mercury contamination at Y-12 was the result of operations that took place primarily in three buildings on the west end of Y-12, Alpha 4, Alpha 5, and Beta 4, and to a lesser extent as Alpha 2, which was where pilot processes were developed that were conducted later in the other three buildings (Attachment 1, page 3). Ms. Wilkerson said the area of the three primary buildings is known as the West End Mercury Area (WEMA). She noted the mercury recovery furnace no longer exists, but the pad on which it sat and the soil underneath has mercury contamination.

Ms. Wilkerson explained that from the 1950s to 1963 large amounts of mercury were used in the three buildings to separate lithium isotopes for weapons production (Attachment 1, page 4). About 20 million pounds of mercury were used, but about 2 million pounds were unaccounted for and of that about 700,000 pounds are estimated to have escaped in the air, surface water, soils, and sediments.

Ms. Wilkerson said the primary issue to address at Y-12 is mercury in surface water. The map on page 5 of Attachment 1 shows the location of the three main buildings in WEMA and the storm system pipes from that area to Outfall (OF) 200. She said mercury moves through the storm sewer system to OF 200, where the headwaters of Upper East Fork Poplar Creek emerge. The creek and mercury flow through Y-12 to Station 17, where the creek exits the plant, becoming East Fork Poplar Creek, which eventually empties in the Clinch River to the west.

She said the objectives for cleanup are to reduce mercury in water and stabilize and eliminate mercury in the soils. She said DOE has been working with EPA and TDEC (the regulators) to update plans to clean up mercury at Y-12. A draft mercury strategy plan was submitted to the regulators in March 2013 followed by a workshop where discussions were held about mercury challenges and what can be done. The consensus of the participants was that the problem was complex and will require a number of solutions that are complementary with an adaptive management plan. The strategic plan has both near-term and long-term actions and can be modified as needed.

The graph on page 7 of Attachment 1 illustrates the issue of mercury in East Fork Poplar Creek (EFPC) and mercury in fish tissue. The blue line indicates the amount of mercury measured in the creek from about 1990 to 2010 and shows a significant decline of mercury concentration in the water. The orange line indicates mercury concentrations in fish tissue during the same period. Even though the blue line indicates considerable reduction in mercury, concentrations are still above acceptable ambient water quality limits, the dotted blue line. The graph indicates that mercury in fish tissue is well above the FDA fish consumption advisory levels, the dotted red line. Ms. Wilkerson said the challenge is how to reduce the mercury in fish tissue to acceptable FDA levels and continue to drive down mercury concentrations in water.

The graph on page 8 of Attachment 1 illustrates the regulatory standards for mercury in water where it leaves Y-12 at Station 17. The levels for the Federal Drinking Water Standards and the State Ambient Water Quality Criteria for aquatic life are being met. But the goals for the interim record of decision and water quality criteria for recreational use are not being met.

Ms. Wilkerson said in order to reduce mercury leaving the plant, the water must be treated. A conceptual design for a mercury treatment facility has been developed. Water emerging at OF 200

would be treated at that point with a mercury treatment plant. The proposed plant would treat 3,000 gallons per minute and could be expanded as needed (Attachment 1, page 9). Ms. Wilkerson said the plant would be a line item capital project to be approved and funded by Congress. The expected operational date for the plant is FY 2020.

Ms. Wilkerson showed a timeline schedule for the mercury treatment facility (Attachment 1, page 10). A focused feasibility study and proposed plan is due to the regulators by the end of FY 2014. After regulator review and concurrence, the plan will be provided to the public for review.

Ms. Wilkerson said a number of activities are underway to control mercury in Upper EFPC and to learn more about mercury accumulation in fish (Attachment 1, page 11). One of the activities is to eliminate flow augmentation into UEFPC. In 1996, 4½ million gallons of water a day were added to UEFPC to ensure surface water quality. It was determined, however, that the augmentation re-suspended mercury in the sediment and increased mercury flux in the creek. A permit modification has been issued to stop the augmentation, which is expected to reduce mercury flux in the creek.

Several studies are underway to learn more about mercury in fish populations, mercury sources in Lower EFPC, floodplain mercury bioaccumulation in spiders, and methylation studies. The methylation studies are funded by the Office of Science. Methyl mercury is most hazardous to humans.

A number of additional near-term studies are proposed as well (Attachment 1, page 12). One of those studies is eco-enhancement that perhaps will slow the uptake of mercury in fish. Other projects could be adding chemicals to water to reduce mercury methylation, stabilizing the banks of the creek, and removal of sediments in UEFPC.

Ms. Wilkerson said the long-term goals for mercury is source remediation, which includes demolishing of the mercury buildings at Y-12 and remediate the soil underneath those buildings (Attachment 1, page 14). The four buildings are currently within the protected area of Y-12 so discussions are underway to try to change the security footprint so they are not within the protected area. Leaving the buildings within the protected footprint would increase remediation costs and make work more difficult.

The mercury cleanup schedule is noted on page 15 of Attachment 1. Ms. Wilkerson said it is an optimistic schedule because it is based on an annual appropriation of $420 million, but recent appropriations have not been at that level, except for FY 2014.

She noted that if any of the proposed field and laboratory studies are implemented, the mercury building demolition and remedial activities would be pushed further into the future.

After Ms. Wilkerson's presentation a number of questions were asked. Following are abridged questions and answers.

Mr. McKinney – By eliminating augmentation is that to reduce the mercury flux or separate the mercury and have less water to treat? Ms. Wilkerson – The augmentation is being eliminated in an effort to reduce mercury flux in water. Mr. McKinney - Is Lake Reality a natural or manmade lake? Ms. Wilkerson – It is a catch basin..

Ms. Riley – Could you elaborate on eco-enhancement? Ms. Wilkerson – It's modifying the environment by perhaps changing trees, plants, rocks, or adding different features to the ecosystem that may slow down the methylation process. It could also change the fish species in the creek that may not accumulate mercury as much. Mr. Turner – The production of methyl mercury is a very

subtle process and it's relatively easy to manipulate the process. We don't understand all the possibilities, but that is some of the work being done currently at Oak Ridge National Lab. For example, flow augmentation changed the composition of the fish in the creek so a higher level of predators that eat other fish became dominant. By stopping augmentation there is an expectation that the composition of fish will change again possibly where the fish concentrations will be lower. There are a number of subtle things like that we hope to capitalize on.

Mr. Bell – (referencing page 7 of Attachment 1) Do you have an explanation for mercury concentration in water coming down, but the mercury in fish going up? And where is allowable drinking water on that scale? Ms. Wilkerson – The drinking water is 2,000 parts per million, so it is at the top of the scale. To answer your first question, we don't know. We don't understand fully how the methylation process happens and how these fish bioaccumulate the mercury. That's one of the challenges we have and we need to continue work with Oak Ridge National Lab to understand it. They have discovered a gene in bacteria that may contribute to the methylation process. So can we use that in a way that we can affect the methylation process? Mr. Bell – Does the methylation process occur in animals? Mr. Turner – Bacteria are responsible for the methylation process. They are a particular kind of bacteria that are in the environment. The form of mercury that we see in fish predominantly is methyl mercury. But the mercury in the water is primarily inorganic.

Mr. Bell – How do you show this figure and justify your project when your drinking standards are acceptable? Ms. Wilkerson – We have ongoing releases from the Y-12 plant that are not in compliance with state regulations. Those regulations are to allow for fish consumption. There are postings along the creek that help protect against fish consumption, but the desire is not to rely on those forever. The ultimate goal is to complete the remediation and the cleanup so those postings can be removed.

Mr. Bell – Can you explain the chart on page 8 in regard to fish? Ms. Wilkerson – This chart says you can drink the water. The red bar is what is needed for fish and aquatic life to thrive. The 51 parts per trillion (ppt) for recreational use is to allow for fish in the creek to be consumed. Mr. Owsley – It's basically the science of methylation and bioaccumulation. If you are ingesting elemental mercury you can at the drinking water level. Fish can live in the water at 770 ppt. But through bioaccumulation fish that are raised in water that contains more than 51 ppt build up a concentration in their tissue that makes it harmful for human consumption. It is the expectation of both the federal government and the state to assure that fish, which are a natural resource of the public, are available for consumption. Mr. Turner – The mercury concentrations in water is total mercury. So the amount of methyl mercury in water is very low compared to the total mercury in water. When you drink the water you're not consuming very much methyl mercury, which is the form toxic to humans. But when you eat fish tissue with methyl mercury it's very concentrated. So you get a lot more methyl mercury from fish tissue than from drinking the water.

Ms. Hall – If the mercury level does get to 51 ppt how long will it take for the existing fish to have low enough mercury levels that they could eaten? Ms. Wilkerson – We don't know.

Committee Reports

Budget & Process – Mr. Hemelright said the committee will now meet bi-monthly. The next meeting will be May 28 at 5:30 p.m.

He said the committee endorses the draft recommendation on the FY 2016 DOE Oak Ridge EM budget request, but Greg Paulus, chair of the committee, recommended that if DOE Oak Ridge has to make any cuts in its 2016 budget that ORSSAB be made aware of the decision-making process.

EM & Stewardship – Ms. Staley said the March meeting was combined with the Budget & Process Committee to discuss and approve the three draft recommendations that were on the agenda for consideration at this meeting.

Public Outreach – Mr. McKinney reported that work is being done to update the ORSSAB exhibit at the American Museum of Science and Energy.

The board will have a booth at the Oak Ridge Earth Day festival on April 26. Mr. McKinney said no decision has been made regarding whether to have a booth at the Secret City Festival later in the year.

Mr. McKinney reported that 24 public libraries in nine area counties have agreed to display the board's *Advocate* newsletter.

He said he is working with the University of Tennessee marketing department about how to enhance the board's public outreach activities.

Executive – Mr. Hemelright said the May presentation to the board is an update on the activities at the Transuranic Waste Processing Center. The center relies on WIPP to accept waste processed by the center. He said a question that must be addressed is how and where the center will store waste until WIPP is operational again.

The committee determined that groundwater will be the issue that ORSSAB will highlight at the spring EM SSAB Chairs' meeting. He said there will be an opportunity to ask questions of the DOE EM Senior Advisor at the meeting. Possible questions may be 'what are the criteria in deciding how cleanup funds are distributed,' and 'when budget cuts are made why are they not made proportionately across the DOE complex?'

Mr. Hemelright said most responses to a recent board member survey about when to hold the annual meeting were in favor of a Saturday morning. The responses to have a meal as part of the meeting were five respondents said 'yes' and seven said 'no or no preference.' Eight members did not respond to the survey. Mr. Hemelright said there will be no meal as part of the meeting, but perhaps a group meal or social event can be organized after the meeting if some members wish to do that.

He said the Budget & Process Committee will begin planning the details of the annual meeting.

The April meeting of the Executive Committee has been cancelled. Mr. Hemelright noted that the starting time for the committee is now 6 p.m. It is scheduled to meet again on May 28.

Announcements and Other Board Business

ORSSAB will have its next meeting on Wednesday, May 14, 2014, at the DOE Information Center.

The minutes of the March 12, 2014, meeting were approved.

Ms. Hall and Ms. Riley were recognized for their service as student representatives to the board.

Lacking a quorum to consider recommendations, the draft recommendations on Additional Off-site Groundwater Migration Studies, Additional Waste Disposal Capacity on the Oak Ridge Reservation, and the FY 2016 DOE Oak Ridge Environmental Management Budget Request were tabled.

The motion to consider Dr. Holmes' two consecutive absences was removed from the agenda as Dr. Holmes was present.

Mr. Hagy explained the reasons for Mr. Hatcher's absences (professional commitments) and that motion was removed from the agenda.

Federal Coordinator Report

Ms. Noe reported that membership appointment packages for new members and current reappointment packages for members for seeking their second and or third terms have been submitted to DOE Headquarters for approval. She said it is a six-step process, and the submission of packages is step 4. She said that is usually the longest part of the process.

She has approved travel for members going to the EM SSAB Chairs' meeting. She said if those members have not received their documentation from the travel coordinator to let her know.

Letters have been sent Oak Ridge High School and Hardin Valley Academy requesting new student representatives, but new students have not yet been selected by the schools.

Additions to the Agenda

Ms. Staley said the April edition of the board's *Advocate* newsletter has good background information that would be useful in considering the proposed recommendation on additional waste disposal capacity for the Oak Ridge Reservation. She encouraged members to read those articles.

Motions

4/9/14.1

Mr. McKinney moved to approve the minutes of the March 12, 2014, meeting. Ms. Staley seconded and the motion passed **unanimously.**

The meeting adjourned at 7:25 p.m.

Action items

Closed

1. Staff will poll members about the structure and logistics of the annual meeting. **Complete.** Survey was distributed to membership on March 17, 2014.

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 April 9, 2014, meeting of the Oak Ridge Site Specific Advisory Board.

Lisa Hagy, Secretary

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

Checklist

Recommendations and Comments Consideration for Board Approval

I. **Title:** Recommendations on Additional Off-site Groundwater Migration Studies

II. **In response to (why necessary):** Recommendations based on Groundwater Strategy Document for the Oak Ridge Reservation (DOE/OR/01-2628&D1), September 2013

III. **Committee:** Environmental Management & Stewardship

IV. **Date submitted:** May 14, 2014

V. **Date by which action is requested or required:** May 14, 2014

VI. **Previous considerations:** none

VII. **White Paper (if applicable):**

VIII. **References (if applicable):**

Many Voices Working for the Community

Oak Ridge Site Specific Advisory Board

DATE

Mark Whitney
Oak Ridge Office of Environmental Management
U.S. Department of Energy
P.O. Box 2001, EM-90
Oak Ridge, TN 37831

Dear Mr. Whitney:

Recommendation: Recommendations on Additional Off-site Groundwater Migration Studies

At our May 14, 2014, meeting, the Oak Ridge Site Specific Advisory Board approved the enclosed recommendations on additional off-site groundwater migration studies.

These recommendations were the result of the Groundwater Strategy Document for the Oak Ridge Reservation (DOE/OR/01-2628/V1&V2/D1) that was developed in September 2013.

In summary, the recommendation requests that DOE proceed with an off-site groundwater quality assessment project and that DOE secure additional baseline funding for analysis to further understanding of potential migration and effects on off-site receptors.

We appreciate your consideration of our recommendations and look forward to receiving your response by August 14, 2014.

Sincerely,

Dave Hemelright, Chair
DH/rsg

Enclosure

cc/enc:
Dave Adler, DOE-ORO
Dave Borak, DOE-HQ
Fred Butterfield, DOE-HQ
Susan Cange, DOE-ORO
Connie Jones, EPA Region 4
Terry Frank, Anderson County Mayor
Melyssa Noe, DOE-ORO
John Owsley, TDEC
Mark Watson, Oak Ridge City Manager
Ron Woody, Roane County Executive
File Code 140

Oak Ridge Site Specific Advisory Board Recommendation: Recommendations on Additional Off-site Groundwater Migration Studies

Background

A series of groundwater strategy workshops was held during 2013 to develop and prioritize groundwater pathways for the Department of Energy's (DOE) Oak Ridge Reservation (ORR). In addition to representatives from the Environmental Protection Agency, Tennessee Department of Environment and Conservation, and DOE, the ORR Groundwater Strategy Team included contractor representatives and a representative from the U.S. Geological Survey who acted as independent technical support and the interface and liaison between the ORR Groundwater Strategy Team and the Oak Ridge Site Specific Advisory Board. The workshops resulted in the development of a Groundwater Strategy document (DOE/OR/01-2628/V1&V2/D1).

Discussion

The groundwater pathways and flows are complex on the DOE ORR. The potential for releases (chemical species and radioisotopes) from waste burial sites, storage areas, and past operations due to groundwater penetration over time is possible.

It is reasonable to extrapolate that off-site migration of contaminants is possible and merits further evaluation. Current data may not adequately reflect the future presence of contamination in off-site groundwater; therefore this potential condition warrants investigation. The protection of public health must be considered a priority; therefore potential health exposures to hazardous/radioactive species should be investigated.

Recommendations

The Oak Ridge Site Specific Advisory Board recommends additional groundwater studies to address potential offsite migration of chemical species and radioisotopes. This recommendation is focused toward the development of information that will allow a better understanding of the potential impact of groundwater contaminants for the purpose of risk mitigation, groundwater remediation, and long-term stewardship.

Specifically, we recommend that:

- DOE proceed with the Off-site Groundwater Quality Assessment project, including: review of the existing monitoring well network (to include review of horizontal and vertical placement of well screens to ensure monitoring of groundwater systems), review of existing wells for determination of well integrity, abandonment of wells deemed not to be in appropriate locations and/or are of questionable integrity, and development of a monitoring plan (to include groundwater depth, water quality measurements, and hydrogeologic parameter determination) followed by implementation of the plan.

- DOE secure additional baseline funding for and perform interpretive analysis, (to include qualitative and quantitative modeling as appropriate) to further our understanding of potential plume migration pathways and potential effects on off-site receptors.

- With respect to the plume rankings developed in the Groundwater Strategy document, we note that these rankings are somewhat subjective therefore before adopting these rankings, we recommend that DOE:

- Develop process knowledge documents for each plume identified in the Groundwater Strategy document to support the interpretive analysis and assist with long-term stewardship.
- Review the method for plume rankings and confirm or revise the rankings.

Checklist

Recommendations and Comments Consideration for Board Approval

I. **Title:** Recommendations on Additional Waste Disposal Capacity on the Oak Ridge Reservation

II. **In response to (why necessary):** Recommendations based on Remedial Investigation/Feasibility Study (DOE/OR/01-2535&D2).

III. **Committee:** Environmental Management & Stewardship

IV. **Date submitted:** May 14, 2014

V. **Date by which action is requested or required:** May 14, 2014

VI. **Previous considerations:** none

VII. **White Paper (if applicable):**

VIII. **References (if applicable):**

Many Voices Working for the Community

Oak Ridge Site Specific Advisory Board

DATE

Mark Whitney
Oak Ridge Office of Environmental Management
U.S. Department of Energy
P.O. Box 2001, EM-90
Oak Ridge, TN 37831

Dear Mr. Whitney:

Recommendation: Recommendations on Additional Waste Disposal Capacity on the Oak Ridge Reservation

At our May 14, 2014, meeting, the Oak Ridge Site Specific Advisory Board approved the enclosed recommendations on additional waste disposal capacity on the Oak Ridge Reservation.

These recommendations are based on the Remedial Investigation/Feasibility Study for CERCLA Oak Ridge Reservation Waste Disposal (DOE/OR/01-2535&D2).

The recommendations encourage DOE to continue planning for an additional on-site disposal facility for low-level waste and that a second facility be placed in an area already used for similar waste disposal. The recommendations also request a trust fund be established for a second facility, similar to the one in place for the Environmental Management Waste Management Facility.

We appreciate your consideration of our recommendations and look forward to receiving your response by August 14, 2014.

Sincerely,

Dave Hemelright, Chair
DH/rsg

Enclosure

cc/enc:
Dave Adler, DOE-ORO
Dave Borak, DOE-HQ
Fred Butterfield, DOE-HQ
Susan Cange, DOE-ORO
Connie Jones, EPA Region 4
Terry Frank, Anderson County Mayor
Melyssa Noe, DOE-ORO
John Owsley, TDEC
Mark Watson, Oak Ridge City Manager
Ron Woody, Roane County Executive
File Code 140

DRAFT

Oak Ridge Site Specific Advisory Board Recommendation: Recommendations on Additional Waste Disposal Capacity on the Oak Ridge Reservation

Background and Discussion

In formal presentations made to the Oak Ridge Site Specific Advisory Board (ORSSAB) in January and February of 2014, the Department of Energy (DOE) identified the need for additional contaminated waste disposal capacity on the Oak Ridge Reservation (ORR). Disposal capacity in the existing Environmental Management Waste Management Facility (EMWMF) will be exhausted by the year 2023, primarily due to:

1. availability of American Recovery and Reinvestment Act funds that allowed the acceleration of Cold War clean-up projects, and
2. expansion of the Oak Ridge Environmental Management Program to include the removal of outdated facilities at the Oak Ridge National Laboratory and the Y-12 National Security Complex. In addition to 2.2 million cubic yards of waste to be disposed in EMWMF by year 2023, capacity for approximately 2.5 million cubic yards more will be needed through year 2046.

Development of a new disposal area, named the Environmental Management Disposal Facility (EMDF), has been proposed to the Tennessee Department of Environment and Conservation (TDEC) and the Environmental Protection Agency (EPA). The initial remedial investigation/feasibility study (RI/FS) report has been compiled to "develop, screen, and evaluate alternatives for waste disposal against CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act) criteria …" including off-site disposal options. This report was submitted to TDEC and EPA for review and comment in September 2012 and revised in June 2013 to incorporate the many comments received. Comments on the revised version currently are pending resolution.

The ORSSAB understands that no decision has been made regarding whether, when, or where to develop another on-site disposal facility, and that ORSSAB and public input will be solicited and incorporated as appropriate prior to any decision being made.

Recommendations

Based on information provided by the DOE that identified the need for additional contaminated waste disposal capacity on the ORR and the preliminary facility design criteria, the ORSSAB makes the following recommendations to the DOE:

- Continue with planning for additional on-site disposal capacity for low-level radioactive and chemically hazardous contaminated waste, and continue ongoing efforts to minimize the need for additional on-site capacity;
- Ensure that the proposed new disposal facility will have sufficient capacity to accept all appropriate future generated waste from DOE activities through cleanup of the ORR;
- Ensure the proposed disposal facility is engineered to operate safely and block migration of contaminants into adjacent groundwater, soil, and air;
- Locate the proposed facility in proximity to existing waste burial grounds, if technically feasible, such that contaminated areas are consolidated on the ORR;
- Ensure that a trust fund for long-term stewardship is established for any new disposal facility similar to that for EMWMF.

Checklist

Recommendations and Comments Consideration for Board Approval

I. **Title:** Recommendation on Fiscal Year 2016 DOE Oak Ridge Environmental Management Budget Request

II. **In response to (why necessary):** At the request of DOE Oak Ridge Environmental Management to provide a recommendation on the FY 2016 budget request

III. **Committee:** EM & Stewardship and Budget & Process Committees

IV. **Date submitted:** May 14, 2014

V. **Date by which action is requested or required:** May 14, 2014

VI. **Previous considerations:**

VII. **White Paper (if applicable):**

VIII. **References (if applicable):**

Many Voices Working for the Community

Oak Ridge Site Specific Advisory Board

DATE

Mark Whitney
Oak Ridge Office of Environmental Management
U.S. Department of Energy
P.O. Box 2001, EM-90
Oak Ridge, TN 37831

Dear Mr. Whitney:

Recommendation : Recommendation on Fiscal Year 2016 DOE Oak Ridge Environmental Management Budget Request

At our May 14, 2014, meeting, the Oak Ridge Site Specific Advisory Board approved the enclosed recommendation regarding the FY 2016 DOE Oak Ridge Environmental Management Program budget request.

We appreciate your consideration of our recommendation and look forward to receiving your response by August 14, 2014.

Sincerely,

Dave Hemelright, Chair
DH/rsg

Enclosure

cc/enc:
Dave Adler, DOE-ORO
Dave Borak, DOE-HQ
Fred Butterfield, DOE-HQ
Susan Cange, DOE-ORO
Connie Jones, EPA Region 4
Terry Frank, Anderson County Mayor
Melyssa Noe, DOE-ORO
John Owsley, TDEC
Mark Watson, Oak Ridge City Manager
Ron Woody, Roane County Executive
File Code 140

Oak Ridge Site Specific Advisory Board Recommendation : Recommendation on the FY 2016 DOE Oak Ridge Environmental Management Budget Request

Background
Each year the U.S. Department of Energy (DOE) Environmental Management (EM) Program develops its budget request for the fiscal year two years beyond the current fiscal year. It uses budget requests from the various DOE field offices in developing the EM Program budget request to the President.

DOE EM Headquarters typically issues guidelines to the field offices advising them how much budget they should reasonably expect when developing their fiscal year +2 budget requests to headquarters. The field offices then brief the public, the regulatory agencies, and the Oak Ridge Site Specific Advisory Board (ORSSAB) and seek input from them regarding budget requests.

Discussion
In March 2014, DOE briefed ORSSAB on the current budget picture and described near-term, mid-term, and long-term priorities. Near-term priorities (2014–2016) are:

- Demolish Building K-25
- Prepare the K-27 Building for demolition
- Continue direct disposition of uranium-233 from Oak Ridge
- Process and dispose of transuranic (TRU) waste inventories
- Planning, engineering, and design for the Y-12 Outfall 200 Mercury Treatment Facility
- Planning, engineering, and design for the TRU Waste Processing Center Sludge Processing Facility build-outs
- Planning, engineering, and design for the Environmental Management Disposal Facility (EMDF)

Mid-term (2017–2026) priorities include:

- Complete U-233 material processing and disposition
- Complete TRU waste processing and disposition
- Complete closure of the East Tennessee Technology Park (ETTP)
- Construct/operate the Y-12 Outfall 200 Mercury Treatment Facility at the Y-12 National Security Complex
- Initiate demolition of Y-12 mercury use facilities
- Construct and begin waste operations at the EMDF

Long-term (2027–2043) priorities include completing cleanup of Y-12 and Oak Ridge National Laboratory.

In March 2014, the ORSSAB EM & Stewardship and Budget & Process committees met with DOE for a more in-depth discussion. At that meeting, Dave Adler and Tammy Blaine (DOE) went into more detail explaining the reasoning for the near-term, mid-term, and long-term priorities.

Mr. Adler said any suggestions on the appropriateness of currently proposed priorities, would be welcome.

Committee members discussed some of the projects and suggested alternatives that might be employed should actual funding levels challenge planned implementation schedules.

Recommendation
ORSSAB agrees with DOE's near-term, mid-term, and long-term priorities as stated above and strongly encourages DOE EM to request funding sufficient to adequately address those projects. In particular, ORSSAB recommends aggressive implementation of projects which, as completed, will reduce the "base" costs of the Oak Ridge cleanup program and allow accelerated investment in remaining cleanup work.

ORSSAB recognizes that continuation of cleanup work at ETTP serves to both maintain productivity of currently assembled Oak Ridge EM workforce, and reduce the base costs of the Oak Ridge EM program.

Oak Ridge Site Specific Advisory Board

TRIP REPORT

I. Name of Traveler: Mary Smalling

II. Date(s) of Travel: March 26-28, 2014

III. Location of Meeting: Washington, DC

IV. Name of Meeting: National Environmental Justice Conference and Training Program

V. Purpose of Travel: Training-

Represent ORSSAB and to learn about environmental justice through collaborating with others from different agencies communities and educational institutions.

VI. Discussion of Meeting: What is Environmental Justice?

Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

The presentations that stood out the most to me were on safe water in Los Angeles County where there is direct correlation between ethnicity and race and substandard drinking water. The poorest neighborhoods had the highest concentrations of pollutants such as arsenic, and many unregulated chemicals include the rocket fuel component perchlorate, the weed killer metolachlor, the refrigerant Freon, and radon, a highly radioactive gas. Government and officials will not openly admit there is a problem (Los Angeles County Watersheds: (Analyzing the Spatial Distribution of Poverty and Other Factors in Connection to Drinking Water Pollution by Matthew Del Muro)

Another presentation dealt with an oil spill from the Pegasus pipeline. The Pegasus pipeline is 850 miles long running through several states and in Arkansas and on March 29, 2013, 5000-7000 gallons of crude oil had leaked out of line in a spill that affected at least 22 homes, storm drains and possibly reached a nearby lake. Not only does the spill effect water and land quality, it has an effect on air quality. Testing at the contamination site revealed no contamination to land or humans according to Exxon but it is believed by some that the results are erroneous because the safe level standards are set too high. (Mayflower, Arkansas Pegasus Pipeline Rupture and Response Community Based Environmental Activism at Risk by Emily L. Harris, MPH)

Some recommendations that I found to be important would be a multi-independent task force to investigate suspected contaminated sites, more transparency from government and companies by assessing damage through independent agencies.

I also found information on why public outreach is important in communities and can improve relationship with the community to have a conversation and to engage the community by educating the public across language barriers and ethnicity and also providing support services

that could involve helping single parents attend meetings and scheduling informational meetings at different times to accommodate different shifts.

VII. Significance to ORSSAB: The conference reminds us that 20 years have passed since President Bill Clinton issued Executive Order 12898 on environmental justice. We have accomplished great things on the Oak Ridge Reservation and yet there is still work to be done in order to achieve environmental justice. Networking and collaborating with others across different organizations and diverse communities are the keys to successful planning and implementation of future programs. By understanding issues faced in different communities and government agencies we can reach these goals. Through education and public outreach we can find common ground and provide equal access in our community for all to enjoy a healthy environment to live and work in.

I did not make any new contacts and there no action items from this meeting.

Signature: Mary Smalling Date: April 8, 2014

Oak Ridge Site Specific Advisory Board

TRIP REPORT

I. Name of Traveler: David Hemelright

II. Date(s) of Travel: 21 April through 25 April 2014

III. Location of Meeting: Pasco, WA

IV. Name of Meeting: EM SSAB Semi-Annual Chair's Meeting

V. Purpose of Travel: To attend the meeting as Chair of the ORSSAB and tour the Hanford nuclear site and clean-up operations.

VI. Discussion of Meeting:

First opportunity to meet David Borak, new Designated Federal Officer of the site advisory boards across the country. Feeling is he will be a stellar leader of the boards. David provided the chairs with an overview of what is occurring at HQ in DC.

Jack Craig, Acting Associate Principal Deputy Assistant Secretary of DOE EM, briefed the attending chairs and guests on the wide variety of clean-up operations across the EM complex, highlighting the progress made. He also showed how the funding was allocated, and gave a snapshot of how the remaining funding will be tentatively distributed.

Looking forward the FY 15 budget was discussed. The 800-pound gorilla in the room was WIPP (Waste Isolation Pilot Plant). There are no funds allocated for any emergency or contingency for work at WIPP. There are no funds available for the remediation and corrections of the current situation and leak at WIPP.

A very comprehensive breakdown of the $5.622 billion budget was shown, by state and by facility. Jack Craig's presentation and overview concluded with a 'charge' to the eight chairs and boards; Budget Priorities; Identify Community Expectations with Reduced Funding; and Broaden Community Participation in EM SSAB Membership and Meetings.

Chairs' round robin ensued with each site speaking of specific issues and accomplishments. Oak Ridge spoke of the work with groundwater migration study.

Frank Marcinowski, Deputy Assistant Secretary for Waste Management, gave the assembled members an update on what is going on at WIPP and potential solutions once the complete report is compiled and published. Report was released on 4/25/14. Frank also continued to talk about the future waste disposition pathways. With WIPP shutdown much waste must remain on the generated sites until disposition can be determined.

Cross complex issues were discussed amongst the attending chairs. Groundwater, funding, and recycling of materials were some of the 'common' interests mentioned. More on this came in the form of Recommendations to DOE EM from the EM SSAB Chairs.

A presentation of the Phoenix web-based GIS tool for accessing environmental data on the Hanford site was given by Mark Triplett from the Pacific Northwest National Lab. Phoenix is similar to the Oak Ridge Land Use Manager (LUM) except it is not as 'live' or timely as the Oak Ridge program.

Two (2) recommendations were formulated by the assembled chairs and boards to be presented to the individual boards for a vote up or down, then forward on to DOE EM for action. The first recommendation is to publicize and capitalize on the successful remediation/clean-up projects where the land has been turned back to the local stakeholders for their use. Let's show the public that their funds are being spent judiciously, and there is value in what DOE EM is doing.

The second recommendation is to ensure that Congress maintain adequate funding to accomplish the clean-up mission in line with current milestones and timelines. Loss of funding extends the time, which increases costs exponentially. Knowledge is also lost as the 'old hands' retire and pass on.

VII. Significance to ORSSAB:

Meeting is a mandatory semi-annual meeting to discuss common interests and issues unique to each site. It is an opportunity to exchange ideas and 'network' with peers.

VIII. Significant Contacts:

Steve Hudson, Hanford Chair; Herb Bohrer, Idaho Chair; Carlos Valdez, New Mexico Chair; Kathy Bienenstein, Nevada Chair; Marolyn Parson, Savannah River Chair; Val Frances, Portsmouth Vice-Chair and Ben Peterson, Paducah Chair.

IX. Action Items:

Two (2) recommendations discussed above to be brought before the entire board for approval.

X. Traveler's Signature & Date:

David Hemelright 20144291635

David Hemelright 29 April 2014

Oak Ridge Site Specific Advisory Board

TRIP REPORT

I. Name of Traveler: Bruce Hicks

II. Date(s) of Travel: 21 to 25 April, 2014

III. Location of Meeting: Hanford, WA

IV. Name of Meeting: Site Specific Advisory Board Chairs' meeting

V. Purpose of Travel:

Participate in meeting, and present/defend Oak Ridge SSAB recommendation to promote DOE/EM success stories.

VI. Discussion of Meeting:

This meeting was informative and constructive. It started with a group tour (on Tuesday) of the Hanford DOE site, with extensive explanations of programs related to clean-up (especially of groundwater and of leaking storage tanks).

On Wednesday, attendees from Washington, DC, presented details of EM programs. Problems of WIPP were addressed head-on. A rapid resolution of the WIPP (Waste Isolation Pilot Plant) troubles is not anticipated. Budget shortfalls were decried, and a second group recommendation to DOE was drafted, to accompany the only already-prepared draft (submitted by ORSSAB). After extensive discussion, both recommendations were tabled until the following day, so as to permit necessary editing by small groups.

A complaint, repeated often and related to the Portsmouth activity, was that DOE had so far failed to provide the metrics whereby the success of clean-up could be judged. I sympathize with this, and continue to be perturbed that costly effort is being expended to reach goals that are not specified. The argument that DOE will clean up until EPA or an equivalent is satisfied remains unacceptable to me, and smells of avoidance at public expense.

On Thursday, discussion of the recommendations was lively and productive. The two documents finished up having much the same goal, but with completely different approaches.

The Oak Ridge recommendation focused on selling the EM success story to the various local citizenries, to generate understanding of the programs and to gather increased support from local political representatives and from high-level DOE management. It was proposed to enlist local PR experts, external to the DOE and its partners, from such institutions as local colleges. This approach was seen as "strategic."

The second recommendation, promoted by the Hanford team, pointed out the heavy financial burden imposed by delays in the clean-up process, and requested DOE senior management to minimize budget shortfalls that would hinder timely completion of clean-up programs. This was seen as "tactical."

After considerable word-smithing, both recommendations were approved and will be sent to the eight SSABs for approval.

I admit to being nervous about the second recommendation. My experience has been that ANY complaints about budget matters result in bureaucratic bad blood in Washington.

VII. Significance to ORSSAB:

Our delegation was well received, and our contributions were considerable. We are regarded highly by the EM Washington team, and this serves to our benefit budgetarily. We are seen as trying to help DOE achieve its EM goals. Unlike some other SSABs, we are not viewed as somewhat adversarial.

VIII. Names & Telephone Numbers of Significant Contacts:

IX. Action Items:

Arrange for ORSSAB consideration of recommendations as soon as possible. Consider items for the next meeting, and contribute to the planning of it as appropriate.

X. Traveler's Signature & Date:

BBHicks 29 April 2014

Oak Ridge Site Specific Advisory Board

TRIP REPORT

I.	**Name of Traveler:**	Alfreda Cook
II.	**Date(s) of Travel:**	April 21-25, 2014
III.	**Location of Meeting:**	Red Lion Hotel, Pasco, WA
IV.	**Name of Meeting:**	2014 Environmental Management (EM) Site-Specific Advisory Board Chairs' Meeting

V. Purpose of Travel:

To attend the EM Site Specific Advisory Board Semi-annual Chairs Meeting

VI. Discussion of Meeting:

This multi-day event provided the opportunity for chairpersons and other members of EM Site-Specific Advisory Boards from across the DOE Complex to share current successes and concerns regarding the progress of environmental cleanup in their communities and ways to better engage the public in cleanup planning. Dignitaries from DOE Headquarters and Washington State provided updates on the EM Program, and SSAB chairpersons developed a joint recommendation to DOE on ways to capitalize on EM successes.

A highlight of the event was a full-day bus tour that offered a view of many historic areas on the 586-square mile Hanford Site, and briefings at several facilities that support the site's cleanup mission. Guided walking tours were offered at the following:

- Cold Test Facility – scaled-down replica of an underground storage tank that allows testing of innovative technologies needed to support maintenance and eventual closure of the Hanford Tank Farm. The Tank Farm stores 56-million gallons of radioactive and chemical waste from the production of plutonium during World War II and the Cold War
- Waste Treatment and Immobilization Plant – under construction since 2001, this complex will cover 65 acres when complete and include multiple facilities designed to stabilize the site's stored waste for final disposal
- 200 West Groundwater Treatment Project – pump and treat facility that removes radioactive and chemical elements from a five-square mile contaminated groundwater plume that is migrating toward the Columbia River
- Environmental Restoration Disposal Facility – disposal area for site remediation debris
- B Reactor – the world's first full-scale plutonium production reactor – preserved for public tours

VII. Significance to ORSSAB:

It is important that SSAB members from across the DOE Complex interact on a regular basis to exchange ideas that ensure the success of the organization. Additionally, site tours provide a better understanding of cleanup problems that are unique to each site.

VIII. Names & Telephone Numbers of Significant Contacts:

None

IX. Action Items:

None

X. Traveler's Signature & Date:

Signature:  Date: 5/5/2014

4/29/14

Oak Ridge Site Specific Advisory Board

TRIP REPORT

I. Name of Traveler: Robert D. Hatcher, Jr.

II. Date(s) of Travel: 4/21-25/14

III. Location of Meeting: Pasco, WA

IV. Name of Meeting: ***2014 Spring Board Chairs' Meeting***

V. Purpose of Travel:

Participation in the EM SSAB Spring 2014 Board Chairs' Meeting

VI. Discussion of Meeting:

April 22 Tour of Hanford facilities(see details below); April 23 and 24 SSABs 2014 Chairs' Meeting (see details below)

VII. Significance to ORSSAB:

This trip permitted me to visit the Hanford site and appreciate their EM problems, and participate in the chairs' meeting to learn what others are doing; hear from representatives from DOE in DC, and to meet a number of people from different sites.

VIII. Names & Telephone Numbers of Significant Contacts: None

IX. Action Items: None

X. Traveler's Signature & Date:

Signature: Date: ***April 29, 2014***

22 April Hanford Site Tour

The tour of the Hanford site facilities was most impressive. The first thing that is apparent is the size of the facility: >500 mi^2, which permitted the installations to be separated by significant distances (Fig. 1). Some nine reactors were constructed for isotope separation, all distributed along the Columbia River for easy access to cooling water. We were told that when all reactors were running the river temperature was raised by a significant ~10° F. Many of these reactors are already decommissioned and permanently encased in concrete. A reactor owned by a local power company is still operating on the site to produce electricity for the region.

We visited an above-ground demonstration-training, near full-scale model of a steel tank of the kind that has been used for long-term storage of radioactive sludge and liquids. Here we gained an appreciation for the size of the tanks and the problems they face in removing the sludge and liquid for permanent disposal. We visited a still-under-construction series of plants being built (~$12B cost) to separate and process low-level and high-level radioactive waste from the tanks, along with an analytical facility that is being built for continuous analysis of materials being processed. The high-level waste will be further concentrated and finally mixed with a melt that will solidify into glass logs that will not devitrify during the lifetime of the high-level waste repository, once one is built in the U.S. The massive amounts of concrete being used, the design of the facilities, and size of these buildings were quite impressive.

The primary environmental cleanup problem at Hanford is the radioactive sludge stored in single-wall and more recently double-wall tanks. Many of the tanks leaked producing plumes of contamination in the Columbia River floodplain sediments. These sediments comprise a classic aquifer system similar to that in the Coastal Plain in the eastern U.S., which permit ready characterization and tracking of contaminant plumes, and the ability to apply pump-and-treat technologies for remediation. Ground water contaminants consist of U, Th, ^{99}Tc, ^{3}H, CCl_4, Cr^{VI}, and others. Each has been demonstrated to move at different rates, but each plume has been well located and superbly characterized by many years of study.

In the afternoon of the tour we were shown a new $230M pump-and-treat plant that has been in operation for only a short time. It is located above one of the major plumes and has already demonstrated its effectiveness by decreasing the size of the plumes that are being remediated. There are >5,000 monitoring wells in the Hanford site and there is no difficulty in monitoring the positive impact of the new plant on the plumes. This plant, in addition to dealing with liquid contaminants, is designed to remediate vapor-state contaminants, such as CCl_4., while ion-exchange columns are being used to extract the dissolved contaminants.

We were shown the active burial site for low-level waste (the Environmental Restoration Disposal Facility, ERDF) which contrasts with the sites in Bear Creek Valley in that the burial site does not have to be sealed like those in the ORR, or most landfills in our region, probably because of the ~7 in/yr rainfall in the area. Each waste item to be buried here is inventoried and provided a GIS location in the repository.

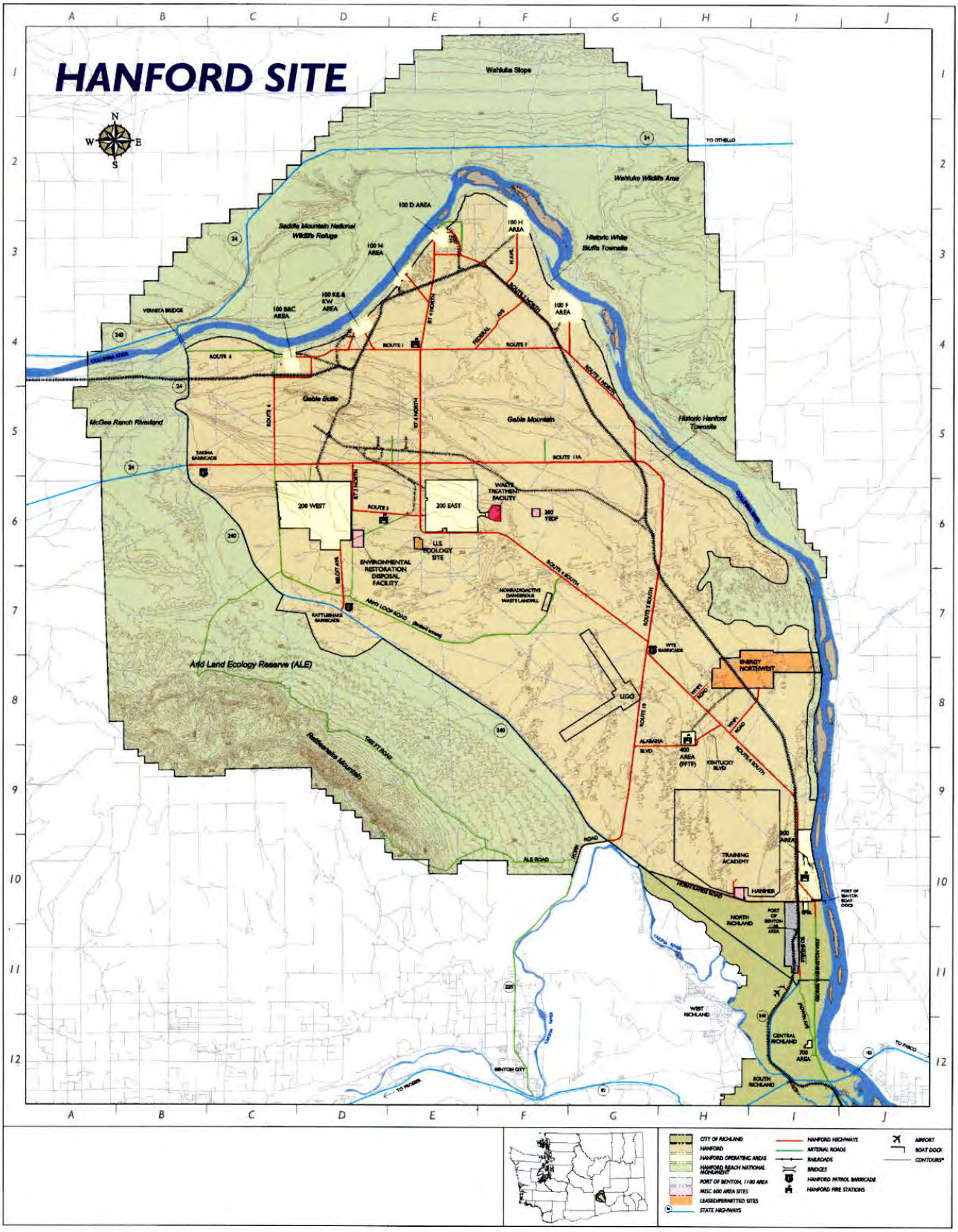

Figure 1. Map of Hanford Site (source: DOE). Map scale unknown.

The last place we visited was the "B Reactor." It is the first full-scale operating production reactor for making radioisotopes for use in weapons, and is being prepared to become a museum as part of the national effort to preserve important historic components of our WWII drive to produce nuclear weapons. This reactor, as expected, is much larger than the Graphite Reactor at ORNL. It, too, is a graphite-moderated reactor that, because of its larger size, presented its own problems for calibration and radiation measurement that were an integral part of controlling the reactor once it came online.

Overall, this was a very well organized and very informative one-day tour of the largest nuclear facility in the U.S. There is a plan to return large tracts of land to public access once the decontamination and decommissioning process is complete. Several research facilities will remain permanently in DOE hands, along with areas that cannot be released such as the remediated tanks and similar facilities.

Board Chairs' Meeting

The Board Chairs' Meeting took place on April 23 and part of April 24. We were briefed on activities at DOE headquarters by Acting Associate Principal Deputy Assistant Secretary of Energy Jack Craig, EM SSAB Designated Federal Officer Dave Borak, and by Deputy Assistant Secretary for Waste Management, Frank Marcinowski who also provided an update on the progress toward understanding the spill at WIPP (Waste Isolation Pilot Plant). Board chairs also provided summaries of their SSAB activities during the past year; that of the ORSSAB prompted some discussion and was well received. We also were briefed on a GIS-based primarily groundwater data management system called PHOENIX, which is being implemented at Hanford. This system, once completed, will provide easy access for the massive amounts of groundwater data that exist at Hanford; it does not require any special software for access.

The most important product of the Board Chairs' Meeting was two recommendations, (1) publicizing the effectiveness of the successful DOE EM cleanup effort, and (2) requesting that DOE fully fund the EM program to build on the successes articulated in recommendation, and accelerate the process of completion for several reasons, not the least of which is the continuing cost increases each year the program is underfunded. The emphasis in this recommendation is on using the very positive scientific and technological accomplishments that are direct products of the EM program, and the potential for more, as fuel to recommend full funding of the program. These, in my opinion, are the two most significant recommendations that have been produced by chairs' meetings in the five years that I have served on the ORSSAB.

Finally, the Board Chairs' Meeting was well organized and well run by Facilitator Eric Roberts, with assistance from many DOE folks at Hanford.

Oak Ridge Site Specific Advisory Board

TRIP REPORT

I. Name of Traveler: Coralie A. Staley

II. Date(s) of Travel: April 22-24, 2014

III. Location of Meeting: Pasco, WA

IV. Name of Meeting: SSAB Spring Chairs' Meeting

V. Purpose of Travel: To attend and participate in the SSAB Spring Chairs' Meeting and to interact with fellow SSAB members from across the nation.

VI. Discussion of Meeting:

A tour of the DOE Hanford Site was conducted on April 22, 2014. The tour was from 7:30 a.m. until 4:00 p.m. The participants in the tour were taken by bus to the Hanford Site and were briefed on the storage tanks and cells that are on the site. We also were taken to the area where construction is in progress for the handling of both high- and low-level waste. The construction will not be complete for some time. We also visited the reactor that was used during the Manhattan Project, and that is now on display for public viewing and education.

Some of the most interesting information for me was the amount of waste that is in buried storage tanks, the way the new tanks are constructed, the relative proximity of the site to the Columbia River, and the distance the site is from the surrounding communities.

The Chairs' Meeting was held on Wednesday, April 23, from 8:00 a.m. until 5:00 p.m. at the Red Lion Hotel in Pasco. The meeting was facilitated by Eric Roberts. There were presentations by DOE Headquarters EM personnel, Jack Craig, who is the Acting Associate Principal Deputy Assistant Secretary, and Frank Marcinowski, Deputy Assistant Secretary for Waste Management.

Mr. Craig spoke briefly about EM progress, how EM funds are spent, and the distribution of funds across EM sites. He also presented a discussion on EM highlights, which included progress on radioactive liquid waste treatment, cleanout and demolition of contaminated facilities, and also touched briefly on soil and groundwater remediation.

Mr. Marcinowski reported on the issues and events that have recently occurred at WIPP (Waste Isolation Pilot Plant). He reported that as we were meeting, there was expected to be a crew entering the WIPP site to begin determination of where the actual event had occurred. When questioned on a time frame for reopening WIPP, he reported that it may take up to, or maybe even beyond, one year for the issues and event to be investigated and remediated.

Other significant activities at the meeting were the Round Robin discussion by the Board Chairs concerning the achievements and issues that each site is facing, including recruitment of new members for the SSABs, funding for the various sites, and the development of recommendations for DOE.

On Thursday, April 24, the meeting began with a presentation by Mark Triplett of the Risk and Decision Sciences Division of Pacific Northwest National Laboratory on "Phoenix", which is a web based geographical information system that is used for recording and accessing environmental data at the Hanford Site.

The EMSSAB Chairs developed two recommendations that will be taken back to each of the local SSABs for approval in order for each of the SSAB Chairs to endorse and sign the recommendations. One of the recommendations is the one presented by Bruce Hicks concerning the capitalization on EM successes, and the other one concerns the budget.

VII. Significance to ORSSAB:

I believe that the meeting is important because of the opportunity it affords for SSAB Chairs and other members to hear what issues are of concern to each of the SSABs, and to realize, and address, the commonality of many of the issues. It provides the opportunity for in-depth discussion, sharing of ideas and plans, and allows for recommendations to DOE to be formulated in such a way that all DOE EM sites benefit from the recommendations.

VIII. Names & Telephone Numbers of Significant Contacts:

I met, and talked with several people from other sites, but I did not leave any unfinished business, so did not collect information from them.

IX. Action Items:

None, other than to support the ORSSAB Chair as he presents the recommendations to the ORSSAB members.

X. Traveler's Signature & Date:

Signature: *Coralie A Staley* Date: 5/1/14

Oak Ridge Site Specific Advisory Board

TRIP REPORT

I.	**Name of Traveler:**	Pete Osborne
II.	**Date(s) of Travel:**	April 22-24, 2014
III.	**Location of Meeting:**	Pasco, WA
IV.	**Name of Meeting:**	SSAB Chairs Meeting
V.	**Purpose of Travel:**	To support ORSSAB participation in the meeting and gather information necessary to follow up on meeting actions and recommendations

VI. Discussion of Meeting:

The meeting was held Wednesday, April 23, from 8:00 a.m. to 5:00 p.m., and Thursday, April 24, from 8:30 a.m. to 12:15 p.m. at the Pasco Red Lion Hotel. A tour of the DOE Hanford Site preceded the meeting on Tuesday, April 22, from 7:30 a.m. to 4:00 p.m.

The meeting was facilitated by Eric Roberts, who supports both the Paducah and Portsmouth Site Specific Advisory Boards (SSABs). Oak Ridge attendees included Dave Hemelright and Bruce Hicks, who represented ORSSAB during most of the meeting discussions; Bob Hatcher, who assisted Dave during discussion of ORSSAB's round robin topics; ORSSAB members Alfreda Cook and Corkie Staley; and Dave Adler, ORSSAB's Alternate Deputy Designated Federal Officer. Attending his first chairs meeting as the Environmental Management (EM) SSAB Designated Federal Officer was Dave Borak, who replaced the recently retired Cate Brennan.

The agenda can be found in the front of the notebook distributed at the meeting (Attachment 1). Copies of all meeting presentations are also available on the EM SSAB chairs website maintained by DOE-Headquarters at http://www.energy.gov/em/services/communication-engagement/em-site-specific-advisory-board-em-ssab. Minutes were taken during the meeting, and a transcript should be available from DOE in the near future.

Wednesday, April 23

The first day of the meeting featured presentations by DOE-Headquarters EM personnel Jack Craig and Frank Marcinowski; a round table discussion focused on attracting more people to SSAB meetings; a round robin presentation of the eight SSABs' top issues, achievements, and activities; a round robin on cross-complex issues; and a preliminary discussion of potential chairs' recommendations.

EM Program Update – Jack Craig, Acting Associate Principal Deputy Assistant Secretary, spoke on a variety of topics, including EM progress to date, what's left to do, how EM funds are spent, and the relative distribution of funds across EM sites. He touched on briefly the rollout of the new EM Historical Timeline, which was launched in March in honor of EM's 25th anniversary. The timeline offers the public a first-of-a-kind opportunity to view the nuclear cleanup program's achievements and related Cold War history in an interactive online platform. It can be found at http://energy.gov/em/em-historical-timeline.

Mr. Craig also discussed some major EM highlights, including progress on radioactive liquid waste treatment, cleanout and demolition of contaminated facilities, storage of nuclear materials, transuranic waste disposition, and soil and groundwater remediation. He concluded with a charge to the SSABs to help EM identify budget priorities and community expectations related to reduced funding levels, and help EM broaden community participation in EM SSAB meetings and membership.

Mr. Craig's presentation was extremely brief and there were few questions on it, which meant that the meeting ran almost hour and a half ahead of schedule. That time was used mostly to extend the round table on attracting more people of SSAB meetings and the preliminary discussion of possible chairs' recommendations.

Round Robin – Each board was given a few minutes to talk about their top site-specific issues, accomplishments, or their most recent major board activity. Bob Hatcher joined Dave Hemelright for the ORSSAB presentation, which focused on on-site and possible off-site groundwater contamination, and protection and restoration, where possible, of contaminated groundwater.

WIPP Update – Frank Marcinowski, Deputy Assistant Secretary for Waste Management, gave an overview of recent events at the Waste Isolation Pilot Plant (WIPP), focusing on the February fire and the radiation release event a couple of weeks later. Daily updates on the status of WIPP are available on the WIPP website, as is DOE's recently released WIPP Radiological Release Investigation Report. The fire was caused by engine fluids that somehow ignited from one of the salt-removal trucks. The cause of the radiation release is still undetermined despite initial forays into the mine by special teams brought in to investigate the incident. It will be months and perhaps a year before WIPP can become operational again.

Mr. Marcinowski said the investigation report has been shared with all DOE EM sites, and site managers have been tasked with reporting on safety conditions at their sites that may have deficiencies similar to those that led to the WIPP incidents. Reports are due in mid-June.

Waste Disposition Update – Mr. Marcinowski went through a site-by-site review of waste materials disposition.

Roundtable on Public Participation at SSAB Meetings – The chairs discussed practices at their sites to attract more public to their meetings. Nevada has typically mailed postcards to every home in a particular community whenever the SSAB is holding one of its meetings there. Recently, however, they decided to try using a billboard, which proved more successful and saved the SSAB over $1,000. Portsmouth has been making a lot of presentations to civic groups, which has led to some success. Northern New Mexico has stepped up its Facebook presence, and resulting 'likes' for its postings have garnered a large increase in attendance at board meetings. Hanford has long used 'state of the site' meetings to draw the public, but those might prove even more successful if they were held on a specific date each year so that people would be accustomed to attending the meetings on a regular schedule. Savannah River often holds meetings at downstream communities to bolster participation. This time the board is planning to invite the mayor of the city they are visiting to come address the SSAB, and a local high school choral group is being invited to sing the national anthem.

Several of the chairs noted that the best way to draw a crowd is to have a controversial topic on the meeting agenda. Bruce Hicks added that there are two ways to get people in: scare them or offer them some sort of incentive to be there. He also thought that a HQ-sponsored science competition for students would get students involved and generate publicity. Hanford also thought that student involvement was key. Dave Hemelright added that EPA has some good ideas on students and their involvement.

Idaho noted that you can't expect people to sit through a 5-hour meeting for a chance to say something during a 5-minute public comment period. Nevada thought it would be good if DOE could come up with some really interesting generic topic that the SSABs could use as a presentation to draw in the public.

The discussion then turned to whether the SSABs should be doing outreach that focuses on EM activities. Dave Borak said the board should provide their DOE sites with recommendations on doing EM outreach rather than doing it themselves. Eric Roberts added that the SSABs don't have to have the public's input before making recommendations to DOE on a topic…you are the voice of the public, he said.

Susan Leckband of Hanford suggested that the chairs discuss this topic again at their next meeting and that each SSAB try at least one suggestion that was made here today and report on how it went.

Round Robin on Cross-Complex Issues – Dave Hemelright started the conversation by saying that he had noted a number of cross-complex issues from the discussions: groundwater, recycling, youth involvement, public outreach, and budget. Savannah added future missions. Hanford offered worker and safety and WIPP. New Mexico suggested pump and treat systems.

EM SSAB Product Development – The chairs talked about what recommendations should be developed from today's conversations, in addition to the one already under development that had been written by Bruce Hicks. Dave Hemelright thought one should be done on the lack of a contingency plan for funding WIPP emergencies such as the one it faces now. Idaho, however, thought the chairs should wait until they see the remedial action plan that results from the investigation. Eric Roberts said the topic would be put on the fall chairs meeting agenda.

Thursday, April 24
The second day of the meeting offered a less formal agenda of presentations and discussions.

Groundwater – One of the most interesting presentations at the chairs meeting was given by Mark Triplett of the Risk & Decision Sciences Division of Pacific Northwest National Laboratory on 'Phoenix'—a web-based geographical information system tool for accessing Hanford site environmental data.

DOE-HQ News and Views – Mr. Borak began his remarks by assuring the chairs that the EM SSABs are more important than ever, particularly to Secretary Moniz, who has served on similar boards. Despite changes in EM, he said, there's never been discussion of cutting the SSAB funding or doing anything that would diminish their role or value to EM.

EM SSAB Product Development – Two recommendations resulted from the meeting: one on budget and Bruce Hicks' recommendation about capitalizing on EM successes. The recommendations must now be approved by each SSABs' membership before the local SSAB chair can sign the recommendations.

VII. Significance to ORSSAB:

Understanding other boards' issues and maintaining working relationships with the other SSABs (especially on interdependencies such as budget) is invaluable to helping this board do its job. Working on joint recommendations provides added value for the meeting participants and DOE.

VIII. Names & Telephone Numbers of Significant Contacts:

A list of EM SSAB contacts is available from me or Spencer Gross.

IX. Action Items:

Try at least one outreach suggestion made during the meeting and report at the fall chairs meeting on how it went.

X. Traveler's Signature & Date:

Signature: ___  Date: 4/29/14

EM Project Update

ETTP	March	April
Zone 1 Final Soils ROD	Draft responses to EPA comments on the D2 RI/FS and draft revisions to the D2 RI/FS were transmitted to EPA. Comments on the draft responses to EPA comments were received. A conference call was held with EPA to discuss their request for GIS shape files.	The D3 RI/FS was submitted to the regulators for review.
Zone 2 ROD	Plans are being made to start characterization of the K-25 Building footprint (Exposure Units Z2-20, 21, and 22).	
K-25/K-27 D&D	The final truckload of debris from the K-25 Building was shipped to EMWMF. Mining of deposits in the segmentation shop is 91 percent complete.	Mining of deposits in the segmentation shop is 93 percent complete.
	Shipments of volutes (68 percent complete) and boxes of debris (73 percent complete) continue.	Shipments of volutes (98 percent complete) and boxes of debris (96 percent complete) continue.
	The Headquarters Project Peer Review of the K-25/K-27 projects was completed.	The end state status for K-25 has 5 of 21 areas documented for interim completion.
	The WHP Addendum for Building Structures was submitted to the regulators for review.	
ORNL	March	April
Melton Valley ROD		The WHP for Sludge Test Area Buildout was submitted to regulators and approved.
MSRE (Fuel Salt)	The Waste Handling Plan Addendum was submitted to the regulators for review.	The Waste Handling Plan Addendum was approved by the regulators.
		NaF Trap removal, weighing, and nondestruction assay were completed. One of the traps will be temporarily stored, pending further evaluation, due to high activity level.
U-233 Disposition		Developed a Change Order Proposal for additional scopes of work for the processing campaign design effort.
		Completed initial development of the Corrective Action Plan associated with the Office of Science, Safeguards and Security survey.
		A tour of the 3019 Facility was provided to the Deputy Director for Field Operations for the Office of Science.
		A Partnering Agreement between OREM and Isotek Systems, LLC was signed forming the framework to ensure open and honest communication, collaboration, and conflict resolution.
Y-12 Site	March	April
Y-12 Phase I ROD Outfall 200 Mercury Treatment	Completed draft Outfall 200 D2 Mercury Treatment Facility RDWP and draft Conceptual Design Report. Both will be submitted to regulators in April.	The Outfall 200 D2 Mercury Treatment Facility RDWP and Conceptual Design Report was submitted to the regulators.

EM Project Update

Y-12 Site	March	April
Y-12 Phase I ROD Outfall 200 Mercury Treatment		An Independent Design Review (IDR) was conducted for Outfall 200 Mercury Treatment Facility project. The IDR team, which consisted of representatives from Oak Ridge and other sites, did not identify any problems with the design and agreed the appropriate alternative was selected.
Y-12 Long Term S&M		Roof repair activities resumed on Building 9201-4. The repair scope originally identified and initiated at the beginning of the fiscal year is approximately 90 percent complete. Additional scope and funding have been added to the contract based on roof conditions discovered to date.
		The PCCR for Building 9206 Duct & Fan Removal was submitted to the regulators for review.
Off-Site Cleanup/Waste Management	March	April
TRU Waste Processing Center	Project completed all TRU waste recertification activities.	Preparations for SWSA 5 waste processing are ongoing although several contingency plans are under evaluation due to potential impacts associated with the duration of the suspension of shipments to the Waste Isolation Pilot Plant.
	The Presolicitation Notice for Architect-Engineering Services for the Sludge Buildouts project was issued. The notice requested technical capability information from licensed firms for the design of the Sludge Processing Facility at the TRU Waste Center.	The revision to the Site Treatment Plan (STP) for Mixed Waste and the Semi-Annual Progress Report was submitted to TDEC for approval.
EMWMF	The FY 2014 PCCR was submitted to the regulators for review.	The final shipment of the waste lot with higher Tc-99 values was received at the end of April.
	EMWMF continues to receive shipments of K-25 Tc-99 contaminated waste.	A Focused Feasibility Study was initiated for the EMWMF and EMDF water.
EMDF		The Environmental Management office received proposals for the Phase I characterization, which includes installation of wells and monitoring. An evaluation methodology has been developed and approved to provide a basis for selecting and awarding the contract.
Lower East Fork Poplar Creek		An EPA staff member visited site to observe methods to be used during the LEFPC ecological mercury study. The visit covered each of the three sites where samples will be taken and where GPS staking, sample collection, and sample handling methods were observed.

EM Project Update

Off-Site Cleanup/Waste Management	March	April
Remediation Effectiveness Report	The FY 2014 RER was submitted to the regulators for review.	
ORR Groundwater Strategy	The draft Off-site Groundwater Assessment Remedial Site Evaluation Work Plan was provided to the regulators for review.	Preparation of the Off-site Groundwater Assessment Remedial Site Evaluation Work Plan continued.
	The Responses to Comments were submitted to the regulators for approval.	The D2 Groundwater Strategy was submitted to the regulators for approval.

Travel Opportunities

Meeting/Event	Dates	Location	Reg. Cost	Website	Conference Lock Date; # Allocated Attendees	Deadline to Submit Requests
FY 2014						
Fall Chairs Meeting (Attendees: Hemelright, Hicks, Staley)	Oct. 15-17, 2013	Portsmouth, OH	none	http://www.planetreg.com/E79143550250173		Aug. 28, 2014
Intergovernmental Meeting with DOE	Oct. 28-30, 2013	New Orleans	none			Oct. 11, 2014
Perma-Fix Nuclear Waste Management Forum (Requests: Hemelright, Holmes)	Dec. 2-5, 2013	Nashville	$500	https://events.r20.constantcontact.com/register/eventReg?llr=8n5x6qkab&oeidk=a07e84apcpub37c9f6e&oseq=a01lph9iyyhwj		Oct. 23,2014
Waste Management Symposium Attendees: Price)	March 2-6, 2014 (Registration opens 10/15/13. Early registration ends 12/31/13)	Phoenix	$995	www.wmsym.org	2	Nov. 20, 2014
National Environmental Justice Conference & Training (Attendees: M. Hatcher)	March 26-28, 2014	Washington, D.C.	none	http://thenejc.org	1	Jan. 29, 2014
Ohio EPA National Brownfields Conference	April 9-10, 2014	Columbus, Ohio				Feb. 19, 2014
Spring Chairs Meeting (Attendees: Cook, Hatcher, Hemelright, Hicks, Staley)	April 22-25, 2014	Richland, WA	none	http://www.eventbrite.com/e/2014-environmental-management-site-specific-advisory-board-chairs-meeting-registration-5248440226	N/A	March 26, 2014
Fall Chairs Meeting (Pending requests: Staley)	Sept. 9-11, 2014 *(tentative)*	Idaho Falls, ID	none		N/A	July 23, 2014
Western Waste Site Tour (Tentative requests: DeLong, Hagy, B. Hatcher, M. Hatcher, Lyons, McKinney, Mei, Paulus, Price)	Postponed pending resolution of issues related to fire at WIPP	Waste Isolation Pilot Plant, Nevada Nat'l Security Site	none	none		

Shading indicates closed trips