

**FINAL MEETING SUMMARY**

HANFORD ADVISORY BOARD  
RIVER AND PLATEAU COMMITTEE

*March 6, 2013  
Richland, WA*

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This is only a summary of issues and actions in this meeting. It may not fully represent the ideas discussed or opinions given. Examination of this document cannot equal or replace attendance and public participation.

**Opening\***

Pam Larsen, River and Plateau Committee (RAP) chair, welcomed the committee and introductions were made. The committee approved the January meeting summary as edited. Approval of the February meeting summary will be delayed until the April RAP meeting since February was a short month and committee members have not had sufficient time to review the draft summary.

*Announcements*

Pam said anyone attending the afternoon Hanford Site tour should be at the Federal Building by 12:45 p.m. to receive a badge. There will be 16-17 Board members on the tour in addition to several agency representatives. The governor will also be on site today taking a tour.

**Briefing on Post-2015 Priorities\***

Doug Shoop, U.S. Department of Energy – Richland Operations Office (DOE-RL) gave a presentation on the 2015 Vision for the Hanford Site (Attachment 2). He reviewed all the progress made toward reaching

\* Please see Attachment 1 – Transcribed Flip Chart Notes for key points/follow up actions recorded during the committee discussion.

the 2015 Vision and noted work that would still need to be completed post-2015. Doug emphasized the following points in his presentation.

- The 2015 Vision was established in 2008 with the goal of taking the 586 square mile Hanford Site and shrinking that cleanup area as much and as quickly as possible.
- DOE is has completed 78% percent of interim safe storage. DOE has confidence they are using the right technical and engineering approach.
- There are challenges in completing the 2015 Vision from a funding viewpoint. The continuing resolution (CR) for 2013 did not provide adequate funding to buy equipment that would go into the annex. That money will continue to be unavailable because of sequestration.
- DOE will continue to work aggressively to meet the milestone to move sludge off the Columbia River by 2014 and clean the sludge by 2015. Money is the key driver for this work.
- The material remaining at the Plutonium Finishing Plant (PFP) is the most difficult to deal with. There have been a number of shipments removing material to Savannah River, which was sensitive due to security concerns. All of the special nuclear material has been removed from PFP. The glove boxes are a challenge and DOE is working to remove those. There has been a lot of good progress.
- The vision is designed to be hard and compelling in order to show Congress and others that DOE has a plan. The effort has largely been successful and there has been support from Washington DC and locally.
- DOE requires a certain level of funding to complete the vision. Funding in FY 2012 was about \$12 million short. Funding in FY 2013 will be about \$100 million short when taking sequestration into account. The budget in 2014 and 2015 is very uncertain.
- There has been additional work incorporated into the 2015 Vision as new work is required, such as when contamination was found under Building 324 and the significant digs required under C Area and D Area.
- DOE is not giving up on the vision and will keep working to get as much work completed as possible by 2015. There will be some outlying work that will not be completed because of the added scope and reduced budget.
- At a recent meeting with Tri-Party Agreement (TPA) Senior Executive Committee, there was a discussion on budget. The executive committee agreed that more money is needed for Hanford Site cleanup and that if more money is not available then a set of priorities should be agreed on. The set of priorities for 2016-2020 developed at this meeting is included in Attachment 3. Another set of priorities post 2020 was also developed and is included in Attachment 4.

#### *Regulator perspectives*

John Price, Ecology, said Ecology is looking at FY 2013 and beyond through the next five years. According to the Lifecycle Scope, Schedule and Cost (LSSC) Report, Hanford Site funding should be \$4 billion in order to complete cleanup work in compliance with TPA milestones. The actual funding is \$2.2

billion. This is a major compliance gap. American Recovery and Reinvestment Act funding provided an additional \$3-3.5 billion for work. Hanford Site cleanup should occur at this level. Some of the cleanup work now expected to be completed by 2020 was work originally slated to be completed by 2015 that had to be delayed because of funding. Ecology has always been careful not to acknowledge funding as a reason to not complete TPA milestones, but an insufficient budget is becoming a real reason why milestones will not be met.

Dib Goswami, Ecology, said there is chromium along the Columbia River and there are other big remediation soil sites along the River Corridor from the groundwater and deep vadose zone. Results of remediation in the groundwater have led to a substantial reduction in chromium contamination that is continuing to improve. Chromium levels have gone from 65,000 parts per billion (ppb) to 4,000 ppb. There has been a tremendous benefit due to the amount spent on groundwater remediation. This type of work is not occurring in the Central Plateau, which is a source to the deep vadose zone. There are many Central Plateau 2015 milestones that have not yet been addressed.

Larry Gadbois, EPA, said from an environmental regulatory point of view, priorities are risk based. EPA asks what are the near term risks and what are the actual exposures. It is important to consider the consequences of delaying work in the near term if it will become a higher risk in the future. Money is the controlling factor in what work gets completed at the Hanford Site. It is also worthwhile to consider factors beyond risk such as areas with huge mortgages but relatively low risk. Costs of cleaning up these types of areas could be substantially reduced if work is completed quickly to avoid unnecessary mortgage costs. Larry said the collective effort to identify a priority list is not static and can be influenced by things like discovering contamination under Building 324.

#### *Committee Discussion*

*Note: This section reflects individual questions, comments, and agency responses, as well as a synthesis where there were similar questions or comments. Questions, comments, and responses were provided by HAB members unless noted otherwise.*

Q. Has DOE declared knock-out material at risk?

*R. [DOE] DOE has only declared the sludge at risk. The knock-out material is a risk, but it has not been formally declared at risk.*

Q. Is there a TPA milestone to complete treatability testing for transuranic (TRU) waste or does this priority list represent DOE's cleanup priority timeframe?

*R. [DOE] There are TPA milestones for many of these priorities, including for TRU waste. Newly generated waste is not included in the TPA milestones. Activities like the treatability tests are important to complete in order to understand what is occurring in the deep vadose zone. DOE-RL is considering what the requirements are to complete each item included on the priority list. All the priority items represent \$18-20 billion worth of work. DOE knows all this work cannot be completed within the desired timeframe unless there is a big increase in funding at the Hanford Site. Some of these priorities will have to be delayed beyond 2020.*

Q. Are the numbers in priority order of what should be completed first [referring to Attachment 2, page 7, “2016-2020 Cleanup Priorities”]?

*R. [DOE] They are in priority order according to DOE-RL. EPA and Ecology might have differing ideas on what the priority order should be for these activities.*

C. There cannot be a definitive cut off line between what work gets completed and what does not since so many projects are occurring simultaneously and are dependent on other work.

*R. [DOE] This handout does represent a general priority order and is not exact. It is important for DOE to establish some sort of priority ranking for cleanup work because if DOE doesn't have priorities, Congress will make decisions on their own about which work is most important for funding purposes.*

Q. Does DOE have any flexibility to move funds, given the reduced budget?

*R. [DOE] There are five control points within DOE-RL and funds cannot be moved among these control points. The 7.7% reduction required by sequestration will take effect in each of these control points.*

Q. Can DOE share anything about how sequestration will be implemented?

*R. [DOE] Sequestration will result in a 7.7% reduction from DOE-RL's budget of approximately \$1.2 billion. That equates to approximately \$78 million dollars spread over the five control points. The result will be about 1,700 furloughs of four to six weeks and approximately 200 lay-offs. Lay-offs can actually become more costly than furloughs when considering severance costs. DOE is trying to avoid layoffs as much as possible, but contractors make their own decisions and tend toward workforce reductions instead of furloughs. DOE will not be going forward with approximately \$40 million in subcontracts, but the exact nature of those subcontracts has not been determined. The effects of sequestration will begin April 1 and the CR funding for DOE will expire March 27 so Congress will need to take some action before that date. DOE has heard there is a good probability there will be a CR for the rest of the year at sequestration levels. This information is only for DOE-RL. DOE – Office of River Protection (ORP) will have comparable layoffs and reductions.*

C. There is currently a big push for DOE to move areas into Long-Term Stewardship (LTS). DOE should spend the money available to complete cleanup work in the inner area of the Central Plateau to address contaminants affecting groundwater. It is heartening to see source reduction on the River Corridor and subsequent impacts to groundwater. There is major improvement, but this is not the case in the Central Plateau. There is a marvelous pump and treat system, but that system will need to be in effect for hundreds of years, while only 40 years are planned, to resolve the source. It would be more beneficial to remove the source before it reaches the groundwater. Those priorities could be switched.

C. There are concerns about stating the Hanford Site footprint has been reduced to a certain extent when the threat to groundwater remains. Can funds be shifted between DOE-RL and DOE-ORP?

*R. [DOE] Decisions to move funds between DOE-RL and DOE-ORP would need to take place at the congressional level. The Board should weigh in on their priorities and where they believe money could best be spent.*

Q. What is Ecology's position on ensuring deep vadose zone cleanup is not delayed indefinitely?

*R. [Ecology] Ecology wrote a letter stating the importance of the deep vadose zone with a deadline for completing the RI/FS workplan. This agreement was reached during the most recent DOE negotiations, before sequestration. DOE-ORP has added more vadose zone work into their milestones this year and has approved a vadose zone work plan for the tank farms.*

Q. How can the Board engage in these conversations? RAP should think about their priorities as a committee and possibly bring this conversation to the Board.

*R. [DOE] The Hanford Site needs more funding to complete the cleanup. DOE cannot lobby Congress for more money; DOE can only submit a compliant budget. The Board together with DOE should determine priorities for the Hanford Site. Any input from the Board on these priorities would be very beneficial.*

C. DOE will renegotiate an extension on the closure contract. The Board should question what the potential impact is of changing the work scope if priorities are changed.

C. [DOE] The Budgets and Contracts Committee (BCC) discussed putting forward two pieces of advice during their meeting yesterday. One of those pieces of advice will be on the 2014/2015 budget with a focus on cleanup priorities. BCC will be asking each of the other committees to provide input on priorities to be incorporated in that advice.

Dale Engstrom is the lead Issue Manager (IM) for his topic. Shelley Cimon and Bob Suyama are also IMs. They will connect with BCC and will consider the request for input on funding and priorities, and continue following the topic.

### **Update on Deep Vadose Zone Remediation Technologies\***

#### *Agency presentation*

John Morse, DOE-RL gave a presentation on deep vadose zone activities (Attachment 5). He reviewed a number of activities occurring in the vadose zone, including perched water removal in B/BX/BY tank farm area. Technetium-99, uranium, and nitrate are all being removed from perched water. DOE and Pacific Northwest National Laboratory (PNNL) have produced several reports describing deep vadose zones treatability tests and pore water extraction studies. John reviewed specifics about the pore water extraction test and outlined next steps for deep vadose zone activities. DOE is conducting a lot of work in

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the laboratory and in the field to see which technologies will work. DOE is also examining characterization, modeling and monitoring techniques.

*Regulator perspective*

Dib Goswami, Ecology, said there is a huge amount of contaminants being removed from the deep vadose zone through perched water. The results would be even better if two more wells were put into operation, but there is not enough funding yet.

Craig Cameron, EPA, echoed the point about the importance of removing the source of contamination, especially for the deep vadose zone to help reduce the duration of active groundwater remediation. Removing the source would also reduce the uncertainty of how sources would impact groundwater over time and will help reduce risk. Technology can take a long time to develop so it is important to not delay the types of testing being done in the deep vadose zone.

*Committee discussion*

*Note: This section reflects individual questions, comments, and agency responses, as well as a synthesis where there were similar questions or comments. Questions, comments, and responses were provided by HAB members unless noted otherwise.*

C. This presentation was very informative and encouraging. What does DOE do with the contaminants being retrieved?

R. [DOE] There is not a large volume of contaminants being removed from the perched water. These contaminants are currently being treated at Effluent Treatment Facility (ETF). DOE is also considering treatment at 200-West to reduce costs. When DOE begins more active pumping there will be a large volume of material to treat so 200-West will be much more cost effective than ETF.

Q. Does the vapor moisture from pore extraction carry technetium?

R. [DOE] Yes. Evaporating air carries water moisture. This has been seen on commercial sites where there are huge knock-off pots that collect all the water brought up from extraction. DOE will use the same mechanics modified with the Hanford Site soil profile. Technetium is the most mobile constituent so DOE would like to remove as much as possible before it reaches the groundwater.

Q. Would this same approach for perched water extraction be effective in the 300 Area?

R. [DOE] The approach would not be effective since the 300 Area does not have a perch zone and it is too close to the Columbia River. The water is moving too fast and is very dynamic. This type of activity is ideal if there is a static pool of water in the perch zone.

Q. The work being done by DOE is very encouraging. It is frustrating that some things like appetite barriers do not seem to be applied. Solutions that appear to work are still being developed and are not

being implemented. Has anyone attempted to look at the geology in other areas to see if there are similar opportunities to employ this type of technology being used in the perch zone?

*R. [DOE] Other perch zones vary. Technetium-99 has often migrated into pools or less conductive zones which is why DOE conducts pore water extraction tests. Technetium-99 does not flow under gravity but will flow when a vacuum is applied. DOE is working on a conceptual model.*

C. In order to “sell” Hanford Site cleanup to Congress, the 2015 Vision became the football that everyone carried forward. How can DOE sell the fact that there are 47 deep vadose zone sites that need remediation and build a compelling case to get funding? The Board would like to hear someone from DOE talk about this.

C. The deep vadose zone has been addressed as something to deal with before contamination reaches the groundwater. Remediation in the deep vadose zone is a proactive approach to cleanup. Deep vadose zone cleanup could be packaged with the leaking tank situation and risks of tanks leaking into groundwater. Deep vadose zone remediation represents a way to work smarter.

C. It is also important to emphasize the consequences of not taking action to remediate the deep vadose zone. Many people do not fully understand the consequences.

C. Research and developing new technologies is important, but it is also important to implement the technologies. There should not be a 30 year research project taking place in the middle of the cleanup. Work should also not be shifted away from the River Corridor.

RAP proposed that John give his presentation to the Board at the June meeting. EnviroIssues will send a link to the Deep Vadose Zone – Applied Field Research Initiative Fiscal Year 2012 Annual Report to the committee.

## **Committee Business\***

### *Committee leadership selection*

Pam Larsen was reelected to serve as chair and Dale Engstrom was reelected to serve as vice chair. There were no other nominations.

### *3-Month Work Plan*

Hillary Johnson, EnviroIssues, handed out RAP’s 3-month work plan (Attachment 6). RAP reviewed each of the items tentatively scheduled for April to determine if they are still timely and identified potential topics for May and June. Key points of committee discussion include:

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- The 300 Area Final Proposed Plan and RI/FS will likely be available the week after committee meetings, but the agencies should be able to speak to its content. Tiffany Nguyen, DOE-RL, will confirm the timeliness with Mike Thompson, DOE-RL.
- Barb Wise, Mission Support Alliance, recently spoke with the regulators about when comments on the 100 D/H Operable Units Proposed Plan Draft A would be available. F Area should be ready for discussion but it is unclear when comments will be due back from the regulators on 100 D/H. EPA is the lead agency for F Area and Ecology is the lead for D/H. Madeleine Brown, Ecology, will get back to the Board on when Ecology's comments will be available.
- As lead issue manager, Dale Engstrom is working on a white paper about groundwater modeling in the Tank Closure and Waste Management Environmental Impact Statement. This white paper will take the place of a presentation or committee discussion and is only for informational purposes. The "next steps" component of this topic was proposed for May.
- The committee thought that DOE-ORP had developed a vision akin to the DOE-RL 2015 Vision and was interested in learning more about it as a joint topic with BCC and the Tank Waste Committee (TWC). Hillary will coordinate with Susan Hayman, EnviroIssues, to identify the appropriate agenda for this topic.
- RAP would also like to discuss the implications of the \$170 million reduction in funding. There will be budget and priorities advice coming forward that RAP and the other committees will be asked to provide input on. This topic will likely be on the April BCC agenda. BCC had discussed assembling an IM team from the different committees to develop budget advice. Dale volunteered to be the lead IM for RAP.

RAP reviewed the April meeting topics table and filled in purpose statements for each of the proposed topics. Topics identified for April were:

- 300 Area Proposed Plan and RI/FS Revision 0
- ROD development for F Area (final ROD at end of calendar year 2013)
- Land transition at F Area
- Regulator briefing on 100 D/H Operable Unit Proposed Plan Draft A (potential, DOE and Ecology to confirm)

### **Attachments**

Attachment 1: Transcribed flipchart notes  
 Attachment 2: Briefing on Post-2015 Priorities Presentation  
 Attachment 3: 2016-2020 Cleanup Priorities  
 Attachment 4: Post 2020 Cleanup Priorities  
 Attachment 5: Deep Vadose Zone Activities Presentation  
 Attachment 6: River and Plateau Committee 3-Month Work Plan

### **Attendees**

HAB Members and Alternates

Richard Bloom	Pam Larsen	Bob Suyama
Shelley Cimon	Liz Mattson (phone)	Gene Van Liew
Dale Engstrom	Tom Rogers	Jean Vanni
Gary Garnant	Daniel Serres	Steve White
Steve Hudson (phone)	Dick Smith (phone)	

Others

Tiffany Nguyen, DOE-RL	Madeleine Brown, Ecology	Theresa Bergman, CHPRC
John Morse, DOE-RL	Dib Goswami, Ecology	Moses Jarayei, CHPRC
	John Price, Ecology	Sonya Johnson, CHPRC
	Craig Cameron, EPA	Nicole Addington, EnviroIssues
	Larry Gadbois, EPA	Hillary Johnson, EnviroIssues
		Reed Kalder, MSA
		Barb Wise, MSA