

FINAL MEETING SUMMARY

**HANFORD ADVISORY BOARD
TANK WASTE COMMITTEE MEETING
August 11, 2010
Richland, WA**

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This is only a summary of issues and actions in this meeting. It may not represent the fullness of ideas discussed or opinions given, and should not be used as a substitute for actual public involvement or public comment on any particular topic unless specifically identified as such.

Welcome and introductions

Dirk Dunning, Tank Waste Committee (TWC) chair, welcomed everyone and introductions were made. The TWC approved the June meeting summary.

Regulator Review of Comments - Joint topic with the River and Plateau Committee

Dennis Faulk, Environmental Protection Agency (EPA), went over EPA’s comment letter regarding the draft Tank Closure and Waste Management Environmental Impact Statement (TC&WM EIS) and said that reviewing this EIS was difficult. He said it is complex to do an EIS on an ongoing cleanup project. He said the Department of Energy (DOE) asked EPA to become a cooperating agency and EPA is working on a memorandum of understanding (MOU) to lay out their role. He said the main goal is to protect human, health and the environment, but it was not clear that this would be achieved the way the draft EIS was written. Dennis said that without considering the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) actions the EIS is incomplete; however, it is not simple to capture this process. He said EPA also commented on the fact that the modeling was difficult to follow and created uncertainty. Although Dennis understands the complexity of the EIS, EPA would like more clarity and more explicit graphics. Dennis said EPA spoke with DOE and the State about their views and came to the conclusion of up with four items to include in the final EIS. EPA suggested including more information on secondary treatment performance at the Integrated Disposal Facility, developing goals to meet the CERCLA cleanup program, running sensitivity analysis for the vadose zone, and off-site waste mitigation issues and off-site waste not coming to Hanford.

Theo Mbabaliye, EPA, explained how the National Environmental Policy Act (NEPA) law is used in the EIS and lays out the federal requirements and impacts the project will have on human, health and the environment. He said there is a list of components an EIS has to have such as an identified project area, assessment of the resources in that area and if the activities will have an impact. Theo added it is an iterative process and the EIS may or may not lay out the impacts in entirety. He said arriving at the Executive Order (EO) 2 rating was particularly difficult due to many complex issues. He said it is possible that the CERCLA impacts reflect the impacts on the ground, but the impacts could be considerably diminished. Theo mentioned that for the TC&WM EIS, DOE committed to improving the EIS but that it is not a straightforward situation. He said if there is a plan to reduce impacts and EPA agrees, then there is a commitment by DOE to reduce impacts. If the EIS shows impacts exceeding standards then there is a process to comply. The EPA review does not say what has to be done to protect the human, health and the environment; it is aimed at disclosing impacts.

Agency Perspective

- Mary Beth Burandt, DOE-Office of River Protection (ORP), said DOE is pleased that EPA will be a cooperating agency. Mary Beth noted that Dennis hit on a couple of similar issues for both agencies. She said the issue of not achieving groundwater standard in the EIS. The EIS can be a vehicle to determine what the outcome could be. Another issue discussed was the decision to keep the cumulative impacts on CERCLA sights and add a sensitivity analysis looking at the potential impacts. This analysis will make it possible to have a roadmap and prioritize areas. She said after the meetings, a path forward for the CERCLA sites was created. Mary Beth also added there has been a challenge in how far to go without influencing an Operable Unit (OU), but the sensitivity analysis will help with this. She said EPA had groundwater modeling concerns and agreed with them that some areas of the EIS DOE should add more explanation. Mary Beth also said in regards to the graphics concerns; DOE has looked at if people are only looking at the graphics and not the text and what message they might be getting from the graphics. She said some people are more visual than others.

Regulator Perspective

- Madeleine Brown, Washington State Department of Ecology (Ecology), said Ecology has already given their perspective on the EIS at the June meeting.

Committee Discussion

- Dirk commented that there was going to be an environmentally unsatisfactory rating of the draft EIS and possible discussion that deemed this rating unnecessary. Theo said this information is included in EPA's letter to DOE.

- Liz Mattson asked about the usefulness and accuracy of the graphics in the EIS to the public. Mary Beth said it depends on if you are visually inclined. It is a complicated EIS and the graphics can help with understanding. She said DOE discussed adding text to the graphics, including tools to describe past occurrences and future occurrences. Dennis said the graphics sometimes say one thing, but with text and graphics together, different conclusions can be made. Mary Beth said it is a challenge to graphically portray the information.
- Susan Leckband asked what it means that EPA is a cooperating agency. Dennis said one reason is because EPA has expertise and knowledge to help DOE with such issues as modeling. He said working together with DOE should not add time to the process and the MOU will detail EPA's role. He said DOE is still responsible for the documentation of the EIS. Susan asked with will the MOU be done. Dennis said the MOU will be done soon.
- Mary Beth mentioned Ecology looks at the EIS from the State Environmental Policy Act (SEPA) point of view and that will not be reopened. Madeleine clarified that their MOU with DOE will be publically available.
- Susan said the EIS does not require agencies to do a particular action. She said the focus is on human, health and the environment and asked if EPA's philosophy will be impacting the EIS. Dennis said EPA will make their thoughts known, but DOE makes the final decisions. He said the trick will be how to do the sensitivity analysis. EPA wants to make sure that the whole story is told in the EIS, which is still being discussed.
- Mary Beth said it is clearer under SEPA how the process will go from EIS to permitting. The challenge will be if something comes up in the sensitivity analysis or mitigation action plan in which case there may not be a clear, regulatory pathway.
- Susan said the Hanford Advisory Board (HAB or Board) will have to understand the connection between the EIS and the decision documents. Dennis said the EIS may or may not help inform CERCLA decisions, but EPA hopes it does. He wants to try to make the EIS process clearer because the CERCLA decisions are a much more refined perspective than the analysis done in the EIS. He wants to avoid discrepancy between EIS and CERCLA decisions.
- Theo reminded the TWC that the EPA being a cooperating agency does not relieve them of their independent review role.
- Shelley Cimon asked if being a cooperating agency allows for early dialogue on decisions. Dennis said the actual decisions will be in the CERCLA process or Resource Conservation and Recovery Act (RCRA) permitting process, and the EIS is trying to inform these decision processes. The state and federal government requires the NEPA and SEPA process, but CERCLA does not need this process. He said the EIS can be used to run a sensitivity analysis and CERCLA modeling will be done based on characterization. He said there is constant data coming in and there had to be a line drawn for when to start doing modeling.

- Mary Beth said DOE is pleased with the dialogue regarding the EIS. She said the MOU states that DOE will continue this dialogue with EPA.
- Dennis said EPA hopes they can help DOE and will understand this process better as a result of the collaboration; however, this does not provide EPA with more power necessarily. Mary Beth said both EPA and Ecology MOUs do not affect their overall role.
- Tom Carpenter mentioned the recent New York Times article that stated there is three times as much plutonium in the soil at Hanford that originally believed. He asked if this new data was considerably more than the 1996 data and how it is displayed in the EIS. Mary Beth said DOE reviewed how they got to the results and is seeking to understand the data.
- Dan Serres asked if the sensitivity analysis will change the alternatives to meet EPA standards. Mary Beth said there are many constituents over the drinking water standard, so DOE has talked about how to illustrate what has happened in the past and potential consequences of future actions. She said there may be cleanup actions needed aside from the future impacts work but the sensitivity analysis looks at what the priorities are. Dennis said for CERCLA, the EPA knows that the groundwater is contaminated under certain sites; however, this information is sometimes cut out of the EIS so as to not overwhelm the reader and focus on the actions that will prevent the groundwater from getting worse.
- Dirk asked if there will be a revised list of alternatives included in the final EIS. Mary Beth said DOE is still going through the comments on the draft EIS.
- Dirk asked if new information such as steam reforming will change the alternatives. Mary Beth said there is a lot of energy on new data for steam reforming and DOE is looking into how mature the data and technology are. She added that there are different ends of the spectrum for alternatives depending on financial interest.
- Theo said the participation of EPA is what DOE wants, and EPA will do their best to help improve the EIS.
- Al Bolt said he hopes that the MOU includes a disclaimer page that EPA is not responsible for decisions made. Theo said that is the standard.
- Dennis said the MOU is directed towards providing EPA expertise for the deep vadose zone and hopefully it is helpful.
- Al said the MOU needs to state that the deep vadose zone actions are going to be informed by the EPA. Dennis agreed and said that will add clarity.
- Dirk said the three issues are how EPA feels about the boundary issues of the basalt, the uncertainty on the graphs, and the modeling framework and absorption isotherms. He asked how these issues will be resolved. Dennis said he cannot answer these questions, but EPA will be in discussion with DOE on these topics.
- Shelley asked how often DOE and EPA will meet. Dennis said the schedule has not been determined yet.

- Liz asked when the MOU will be completed. Mary Beth said the MOU should be available in roughly a month. She added that the EIS should be sent to DOE-Headquarters (HQ) by next summer.
- Susan said there will be decisions made before a final EIS. Dennis said it is not necessary to have a completed EIS for CERCLA work. He said some decisions may be made final before the final EIS to meet drinking water standards.
- Dave Rowland asked if DOE could include a road map that addresses comments and where they are incorporated in the EIS. Mary Beth said that will be in the comment response document.
- Susan said the HAB should discuss what decisions will be made in the 200 Area without the EIS. Dennis said understanding the timing of the different processes is important as processes are not frozen, and there are parallel activities. He also added that CERCLA work does not need an EIS such as 200-UP-1. Mary Beth said some cleanup work is going along in parallel, but there will be a point where DOE will have to wait if the EIS is not done. Dirk said that for public involvement purposes, it is important to understand the timing of these decisions.

System Plan

Harold Heacock provided an issue manager update on the System Plan. He said one of the main issues TWC has discussed is the vitrification process and the fact that the tank waste treatment is more complex than just vitrification. The waste needs to be processed and retrieved with many steps. Harold next reviewed HAB Advice #233 on System Plan Revision 5 which was adopted in June that made suggestions for Revision 6 which DOE is currently working on. He said it is important to keep the system plan updated, to focus on key risks to health, safety and environment, and to have consistency within the documents. Harold noted that in Revision 5 there are facilities that would have to be upgraded to support vitrification. He said Revision 6 is a work in progress and has been updated to show past discussions. He recommended that the TWC consider what should be included in Revision 6, and there should be draft advice within the next two weeks if the TWC deems it necessary.

Agency Perspective

- Janet Diediker, DOE-ORP, said DOE has the first draft of System Plan 5 and is working to resolve comments which they hope to have done by the end of August in order to release the plan in September. She said DOE has started developing System Plan 6 which will be updated every year. As part of the Tri-Party Agreement (TPA), every three years DOE will have a framing strategy with Ecology to develop three scenarios. This strategy will cover what are the inputs to make a successful model work including removing the Aluminum Removal Facility (ARF). Additionally, Janet said the strategy will factor in information at the workshop at the end of August. She responded to Harold's comment about HAB advice and said DOE is not seeking advice on a specific issue. If the Board

does want to provide advice, she said it would have to be in by the end of September, which is when DOE will start their process for developing alternatives for Revision 6. Janet also mentioned that they are working on their response to Advice #233 and reviewing the selection of models/runs they are going to do. She said they cannot have eleven different models so they are seeking out some common scenarios. Janet noted the extreme complexity of the piping systems and the interaction between the various parts.

Regulator Perspective

- Dan McDonald, Ecology, said system planning is a very complex process and if you change one component it changes everything. He said Ecology suggests limiting the scenarios to see the potential impacts such as removing ARF. Ecology has created a table with sensitivity cases that can show DOE and contractors the adequacy of technical assumptions for System Plan Rev 6. This table will work to eliminate erroneous assumptions and have some scenarios that make technical sense and logic to the flow of the system plan. Ecology is taking a hard look at many assumptions and will move forward to have six scenarios in total. Dan suggested if the Board does go forward with advice he would suggest two issues for the Board to review. One, to look at the technical adequacy of the scenarios involved in system planning as well as in the Waste Treatment Plant (WTP) planning and two, to optimize the system adequacy for optimizing the throughput of the WTP

Committee Discussion

- Dirk said it would be helpful to know what kind of advice DOE is looking for from the Board. Janet recommended focusing on topics that the HAB needs further clarification on.
- Harold asked about the availability of the draft System Plan 6. Janet said System Plan 5 is not yet available and System Plan 6 has not been started. Harold asked what document can be commented on. Dirk suggested the HAB might be able to submit advice in general terms that can affect future drafts.
- Janet said System Plan 5 is still aligned with Advice #233, and the lifecycle cost and schedule report is still ready to be evaluated. She said the tank farms are organized off of System Plan 4 and the goal is to have one overarching document.
- Dick Smith asked how the alternatives are selected. Janet said DOE is going to look at the likely scenarios and will not run scenarios that are unachievable. She said there are no direct inputs that do not impact something down the line. There is no quick and dirty model to define the “what ifs”. She said the process is very convoluted.

- Harold said looking at the last advice, it is fairly general. He said the TWC should sit down with the people drafting the system plan to look at cost planning. Janet said she will take that suggestion back and see what can be done.
- Dick asked what happens to the canisters after the waste is removed. He said there are proposed plans to have a facility to store them, but he would like a review of alternatives. Dan said Low Activity Waste (LAW) will be handled differently, and DOE is looking at building interim storage sooner in case a geologic repository is not available. He said there is not an answer or definition for interim storage.
- Susan said the system plan discussion does not seem ready for advice. Harold also agreed and said he does not think it is possible to have advice in time.
- Al said in System Plan Rev 4 the technologies that are mature do not have a technical basis and should not be in the system plan. He said there are assumptions that LAW is adequate for disposal. There should be adequate data for technologies going into the system plan with impacts on the disposal system. Dan said this is what he suggested with the technical aspects of the System Plan Rev 5. He said DOE-Headquarters (HQ) gave a letter saying to set aside ARF and consider other alternatives. He said Ecology is mandating that ARF not be used and this background information will be included in System Plan Rev 6.
- Al said with steam reforming, there is discussion on the performance of the waste form and this could go through a formal peer review before it goes in the system plan. Dan said Ecology is looking at a variety of waste forms before including it in the system plan. He said Ecology is trying to avoid using model time by discussing these topics. Al said the system plan should have technical adequacy.
- Dirk said the committee could perhaps have advice for the next HAB meeting after looking at other documents (e.g. Rev 5). Janet said DOE would like to hear from the HAB sooner rather than later. Dirk said System Plan Rev 5 is just now finished and the HAB has not seen it yet. He said the HAB could provide advice if DOE provides enough time to review the system plans.
- Susan made a comment that there have been opportunities in the past when the HAB has asked DOE to accept advice after the comment period. She said in November the HAB can bring forward advice on System Plan Rev 6.
- Dan said DOE and Ecology will continue with technical decisions and have some scenarios secured. Dick said the interest is on potential changes to the scenarios and allowing for the HAB to comment on the scenarios.
- Janet said she will talk to project staff to determine when System Plan Rev 5 will become available to review or have a discussion about.
- Dirk said the HAB will move toward discussing the adequacy of the system plan process, throughput, and waste forms.
- The TWC will plan an issue managers meeting on System Plan Rev 5.

Technology Development Roadmap

Dirk said the committee has heard previous presentations by DOE-ORP about the Technical Development Roadmap (TDR).

Ruben Mendoza, Washington River Protection Solutions (WRPS), said there are two different roadmaps. The roadmap he is presenting on covers the WRPS mission. He said the second roadmap is specific to tank retrieval. He said WRPS is successful at retrieving tanks, but when getting to the heel of the tank it is more complicated. There is a roadmap for technology development and a roadmap for the heel retrieval. He said science and technology roadmapping is a planning process to help identify technical capabilities needed for both project and program-level cleanup efforts.

Ruben said WRPS identifies the technology gaps and opportunities to improve the technology development processes. He said the TDR identifies prospective technology solutions to fill those gaps. The TDR also provides key technology decision and intersection points and integrates various plans. He said overall the roadmap guides the WRPS technology development program.

Ruben said the TDR does not make technology development decisions or select different technologies for different purposes; it identifies needs and the path forward. He described how the TDR fits into the River Protection Project (RPP) and referenced a chart showing how the RPP drives technology development. He said the TDR is organized into technology functional areas that include applicable mission targets, technology gap and opportunity identification, and proposed technology solutions. He said WRPS has identified technology development functional areas. Ruben also added that safe waste storage, waste retrieval, waste pretreatment and stabilization, tank closure, and tank farms operation are addressed in the TDR.

Ruben went over the mission targets and said that they act as high level baseline milestones. He said there are different priority levels that are gauged by potential impacts to the system and the urgency. He said high priority means it is mission critical, medium priorities help meet major milestones and decisions, and a low priority is beneficial but incremental. He said due to the amount of waste the incremental changes are still important in the long run. Ruben noted that if the urgent implementation of a technical solution significantly affects the possible realized benefits, the priority level for that technology may be escalated.

Ruben said the technologies are tied to a decision point or insertion point, and are not stand alone science experiments. He showed an example chart of how the decision process works. He said there is technology development and deployment, followed by decision and then insertion.

Ruben said Appendix A of the TDR provides links between technology gaps, solutions; WRPS risk management plan, engineering and technology roadmap, program plan, and the National Academy of Sciences advice on the DOE's cleanup technology roadmap. He said WRPS plans to update the roadmap to reflect other documents and any changes that might occur. Thus, the TDR is a forward looking document.

Committee Discussion

- Susan asked how emergency issues are identified. Ruben said an emergency issue could be something at the field level such as a pump replacement that requires or would benefit from technology development, but there is not really a threshold. He said it is really a case by case basis. Susan said the field is the first place to identify the need for technology development and asked if workers are aware of opportunities for technology development. Ruben said there is a technology development management plan, which describes the technology development process from beginning to end. He also added that there are opportunities to work with other groups in the field both formally and informally to identify technology needs.
- Liz asked how the solution examples were chosen for the presentation. Ruben said the solution examples are just examples, and the TDR document describes that more information will be needed.
- Liz asked if tank removal is being examined. Ruben said WRPS has not pursued tank removal. He said WRPS is not quite ready to do tank closures and there is not yet guidance, but there will be eventually.
- Susan asked if grout is in the baseline. Dirk said grout has been an issue because of all the information that needs to be considered.
- Ruben suggested if other questions come up to pass them on to Pamela McCann, DOE-ORP, and she will contact him.

Blue Ribbon Commission

Susan said she testified at the recent Blue Ribbon Commission and the information from the meeting is on the website at www.brc.gov. She said the commission's charter is on the American nuclear lifecycle and the commercial side of nuclear waste. She said the main issue that concerns the HAB is the disposal of High Level Waste (HLW). She said she referenced the most recent advice on HLW and interim storage during her presentation. She said all the comments were recorded and filmed and her comments are on pages 85-97 in the meeting's minutes. She said the State of Oregon and the tribes did a good job and were very eloquent in their testimonies. If someone wants to see all the speakers' presentations and their comments are on the web site. Susan also mentioned that the sub-committees are listed on the website. She said there was a feeling that the Blue Ribbon Commission is diplomatic, welcoming and doing the right thing. She said the panel members are very sharp and asked good questions. The panel was impressed by the work being done at Hanford due to its size and was also pleasantly surprised that the Board operates on consensus. She added that the commission's report is not due until after the next presidential election.

Tom said Susan did a great job and that he submitted written comments which are posted on Hanford Challenge's website

Dirk commented that the presenter's format was rather odd and made it difficult to hear the speakers. Susan agreed and said it was like HAB meetings except there was a stage. Harold said the set up was due to the event being filmed.

Al said it is important to consider the amount of waste from reprocessing. Dirk said the loop needs to be closed to have the vitrification plant running at the same time as reprocessing. Susan said the point of closing the loop was made at the Blue Ribbon Commission meeting.

Harold said the government has a commitment on commercial reprocessing. Plants in other parts of the world are about the size of the 300 Area and the waste goes to low-level waste facilities. Al said not to forget the liquid discharge into the ocean from reprocessing plants.

Susan also let committee members know that they can provide additional comments on the Blue Ribbon Panel website.

Dirk asked if the TWC should produce advice on the Environmental Management (EM) side of the Blue Ribbon Panel. Harold reminded committee members that the HAB is an advisory board to DOE. Susan said if the committee wants to develop advice it should go to the sub-committees.

Harold said he was impressed that the panel was not working to a predetermined solution. He said the State of Oregon talked about the transport of waste, and Dirk said Ken Niles mentioned there might need to be an amendment for safe shipment by rail.

Tom said the Board might want to make sure it is against re-opening the Basalt Waste Isolation Project (BWIP). He said the Board should also weigh in on HLW and commercial waste at the same repository. He said there have been disturbing comments by past energy secretaries about room available for defense waste. He said the pressure points are coming from the commercial parts of the industry, and it might be wise to separate these decision processes. Susan said the separation of decision processes was discussed at the national level to make sure defense waste is disposed of and not held up.

Susan said the Board expressed the need for a repository since Yucca Mountain does not exist anymore. Al said there needs to be a decision on where to dispense of HLW, and the decision does not need to be separated. Dirk suggested having issue managers discuss the topic of commercial and defense waste decisions.

Yanett Gonzaga, Mission Support Alliance (MSA), said she heard about the quasi-management plan for dealing with waste, which should be considered when discussing this topic.

Waste Management Area C Performance Assessment

Vince Panesko provided an update along with a handout on the recent performance assessment working session. He said the tank structural integrity was the main discussion. Other topics reviewed included tank linear degradation, structural concrete degradation, pipelines and diversion boxes, and emplaced grout. He said the bottom line is that the contamination in tanks will be uncontained over time. He displayed a closure decision schedule and said the C-Farm is projected to be closed by 2019. Dirk, who is also involved in the performance assessment for the State of Oregon, noted there is no spacing

in the schedule to allow for potential issues that could occur, such as a potential lawsuit over waste incidental to reprocessing basis decision under DOE Order 435.1 as part of the closure plan, and public involvement is not acknowledged.

Vince showed the working session schedule and a diagram of the pipelines at the tank farms with the many additional lines that have been added over the years as each new processing campaign occurred. He said whatever is in the pipelines and diversion boxes will corrode and leak into the vadose zone. He suggested that he will look at past HAB advice to see if the Board has given prior advice on this topic, and what may be key policy advice points to consider. Vince will continue to keep abreast and discuss these topics with the TWC. Harold asked if some of the pipes were installed differently. Vince said most of these were directly buried.

Susan asked if there is a document for performance assessment. Vince said he was not familiar with this and recommended there could be advice on the process of developing the performance assessment document. Susan reminded committee members to look at policy level advice and provide expectations.

Dirk asked what process the TWC should follow on performance assessment advice. Vince said the inventory issue is going to have to have more information to be able to inform the process. He said the performance assessment looks at techniques, and he thinks it is good to wait on this topic to see what decisions are made for tank closure.

Harold remarked that there is a meeting next Wednesday on the analysis of record single shell tank integrity. Cathy McCague, EnviroIssues, said she sent out this information to the TWC.

Committee Business

The TWC went over the topics to discuss for September.

Dirk asked if the video will be ready for pulse jet mixer facility. Pamela said she is fairly confident the video will be ready. Al said DOE should address the status of the tanks with the pulse jet presentation. Pamela said she would look into this request.

Vince said he can present on the 242-Evaporator.

Pamela said there might be a lot of agency representatives at the Site Specific Advisory Board meeting and Environmental Management meeting, which are at the same time as committee week.

Dirk suggested a report back from the analysis of record meeting.

Harold suggested discussing the system plan if the issue managers are able to review the plan ahead of time. Harold said Ecology could provide their comments on Rev 5. Dirk said this can be decided on an issue manager call or meeting.

The committee agreed to discuss the status of clean closure with Jeff Lyon from Ecology. Harold is the issue manager for this topic. He will try to coordinate with Jeff to discuss some preliminary topics. Vince will also be a part of this issue manager group due to his involvement with the performance assessment.

Al said the TWC should discuss steam reforming, it was mentioned that two thirds of the waste will be addressed with steam reforming. Dirk said the steam reforming topic might be a little pre-mature for September.

Pamela said she will ask if DOE is ready to present on the tank hard heel roadmap. Dirk said this topic could be discussed in October or potentially November depending on when DOE is ready.

The committee decided not to have a call in August.

The TWC reviewed the Board meeting action items and revised the committee work plan.

Action Items / Commitments

- Cathy will update the committee’s six-month work plan and the meeting topics table and forward it to committee leadership.

Handouts

NOTE: Copies of meeting handouts can be obtained through the Hanford Advisory Board Administrator at (509) 942-1906, or tgilley@enviroissues.com

- WMA-C Performance Assessment Working Session, Vince Panesko, August 11, 2010
- WRPS Technology Development Roadmap (TDR), Ruben Mendoza, August 11, 2010.
- Comments on Draft Tank Closure and Waste Management EIS, EPA Region 10, EPA, May 3, 2010.

Attendees

HAB Members and Alternates

Al Boldt	Harold Heacock	Dan Serres
Tom Carpenter	Susan Leckband	Dick Smith (on phone)
Shelley Cimon	Liz Mattson	Eugene Van Liew
Dirk Dunning	Vince Panesko	
Floyd Hodges	Dave Rowland (on phone)	

Others

Alex Teimouri, DOE-RL	Madeleine Brown, Ecology	Mark Vanderzanden, AFS
Mary Beth Burandt, DOE-ORP	Rick Bond, Ecology	Cathy McCague, EnviroIssues
Pamela McCann, DOE-ORP	Dan McDonald, Ecology	Blair Scott, EnviroIssues
	Dennis Faulk, EPA	Yanett Gonzaga, MSA
	Larry Gadbois, EPA	Barbara Wise, MSA

		Michelle Gerber, WRPS
		Ruben Mendoza, WRPS
		Rob Roxburgh, WRPS
		Jean Vanni, Yakama Nation
		Mark Trippett, PNNL