

FINAL MEETING SUMMARY

**HANFORD ADVISORY BOARD
RIVER AND PLATEAU COMMITTEE MEETING
July 23, 2009
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

Maynard Plahuta, River and Plateau Committee (RAP) Chair, welcomed the committee, introductions were made and the committee adopted the June meeting summary.

Purgewater Issues Update

Dale Engstrom provided an overview of the purgewater topic. He said there is a tank in the middle of the site being used to hold water that results from drilling in order to remove solids and allow the water to evaporate. Now that the drilling program has increased, the tank is filling with sediment. Dale said the committee hoped to hear an update on the progress and plans for purgewater.

Doug Hildebrand, Department of Energy – Richland Operations Office (DOE-RL), said the engineering evaluation/cost analysis (EE/CA) has been completed and work on the action memo is underway. DOE-RL recently replaced the liner in unit two so it is now ready for operation. DOE-RL also gave the regulators Draft B of its action memo and a closure plan for unit two is being determined. Doug said DOE-RL is anticipating a notice of construction from the Department of Health (DOH), which would allow water to evaporate from unit one so DOE-RL can disassemble and dispose of it.

Regulator Perspectives

- Rick Bond, Washington State Department of Ecology (Ecology), said most of the water in the purgewater tank was fairly clean, containing only low amounts of radioactive materials, and Ecology does not expect the sediments to be a problem. Ecology is reviewing the action memo and thinks it is sufficient. He said he has heard discussion that some people do not think this is the best way to treat purgewater. DOE has looked into a filtration system, but this can be expensive and the current approach has worked for approximately 20 years. Rick said groundwater monitoring wells will not be required for the unit for the first five years, at which point the action memo will require it to be re-evaluated. Ecology thinks the system will only need to be used for another five years when there will be an excess of water coming from the pumping wells. Rick said Ecology wants to move forward with purgewater treatment. The units will now be permitted under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), and will be evaluated daily for integrity.
- Craig Cameron, Environmental Protection Agency (EPA), said EPA is beginning to review the latest version of the action memo draft. He said EPA is in alignment with this process and the planned five-year review, which he thinks is an adequate time period for a temporary remedy. If this becomes a long-term remedy, EPA will look more closely at groundwater monitoring.

Committee Discussion

- Maynard asked what DOE-RL plans to do with the remaining sediment. Doug said as this dries it will eventually be boxed and sent to the Environmental Restoration Disposal Facility (ERDF). He said this is what was done with liner two.
- Dale commented that one tank is not large enough for all the water, and asked what DOE-RL plans to do in the future. Doug said DOE-RL has started the ordering process for an additional unit, and a six-to-eight-week lead time is needed to manufacture the liner. Once that material is on site, DOE-RL will begin to assemble the liner, which will go in the existing modu-tank footprint. He said unit one is currently full of sediment, unit two has been replaced and another unit will be placed in a third area. DOE-RL will use these two units to gauge whether additional units are needed, and Doug said there is an area to place two more units.
- Shelley Cimon asked whether unit one can be emptied. Doug said the liner will be damaged when the sediment is removed, so it cannot be re-used. The metal frame would be re-useable, so if there is enough time to dry, empty and disassemble this unit DOE-RL would put a new unit on the same footprint and use the same frame.
- Dick Smith asked whether unit two was already built. Doug said this unit had already been built, but the liner had degraded during the 20 years it sat there. There are also two slabs in place for third and fourth units.
- Wade Riggsbee asked the chemistry of the sediments. Doug said DOE-RL began taking annual or semi-annual samples in 2000, and these showed a range of values of contaminants, but they are within ERDF waste acceptance criteria (WAC).

- Wade asked whether preventative maintenance of the wells where there are sediment loads is part of the review process. Rick said most of the sediment is coming from developing new wells. Doug said part of the maintenance process is an effort to lessen the amount of sediment since this is difficult on all of the pumps and wears them out quickly. He said unit one was filled by an accelerated drilling program in which 100 wells were drilled per year. Wade encouraged preventative maintenance for the monitoring wells.
- Shelley asked how long DOE-RL thinks it will take to evaporate the water that is in unit one. Doug said approximately three to eight inches evaporate each day. Shelley asked whether the evaporation underneath the sediment will be inhibited as it dries out. Doug said this should not be an issue.
- Dick asked whether a risk analysis had been completed on the contents of the unit one tank. Doug said an official risk assessment has not been completed, but a load assessment was done to obtain an operating permit for unit two.
- Dick asked whether the sediments need to go to ERDF. Craig said ERDF is the only place to send contaminated materials like those in the modu-tank.
- Wade said it is important to look at the total production of wells and the volume of water to make sure it matches the capacity of the purgewater treatment system. He said he would like to do a follow up of the processing of the data and have a sample analysis and physical testing available to see the analytical work that is being done. Wade said for the first set of wells DOE-RL was trying to set up a long-term pumping test to look at the hydraulics of the aquifer, and he would like to continue to track that to look at the integration of the volumes of the water being generated and the chemistry since this water would need to go through a treatment system. Wade said because the configuration of the plumes and that treatment practice are being modified, high concentrations of contaminants in those monitoring wells make it important to look at how it is being integrated and some of the other options. Wade said the issue is the chemistry as it changes because the parameters are being modified.
- Dick suggested using gravity separators to remove the sludge and treat the water.
- Wade will follow up with work on the purgewater issue, which is timely considering ARRA funding.

Central Plateau Strategy

Margo Vode, DOE-RL, said the purpose of the presentation on the strategy for the Central Plateau (CP) is to update the RAP on the July 1 meeting of the Senior Executive Committee of the Tri-Parties, including an update on the convergence of the agreement and timelines for input.

Margo provided an update on CP strategy. She said the goal of the Agreement-in-Principle (AIP) was to agree on a CP cleanup strategy, and the three parties have made significant progress since discussions began on March 1. To date, the Tri-Parties have

agreed that the CP will consist of Inner and Outer area, the Outer Area's cleanup goal is unrestricted surface use, the Inner Area will contain permanent waste disposal and isolation consistent with the risk framework, the Inner Area will be as small as practical, CP groundwater decisions will proceed based on amending the 200-ZP-1 ROD to include a 200-UP-1 remedy, and remedies will be selected through the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) after investigation of 200-PO-1 and 200-BP-5.

Margo provided an update on the July 1 Senior Executive Committee Meeting. Status reports were provided on the CP groundwater strategy, Outer Area cleanup, key facilities negotiations, American Recovery and Reinvestment Act (ARRA) funding, and Inner Area cleanup principles. Margo said the deadline for reaching an agreement on areas that are still being discussed has been extended from the end of July to the end of August. The Tri-Parties are close to an agreement on a unified ROD structure that will be incorporated in the CP strategy. Cleanup principles agreed to at the July 1 Senior Executive Committee Meeting are risk assessment and exposure scenarios, dose and risk standards, ecological protection standards, soil cleanup levels protective of groundwater, constituents of concern and applicable or relevant and appropriate requirements (ARARs). Margo said there are ongoing discussions regarding the cleanup principles of institutional controls (ICs) and cleanup decision logic and remedial alternatives development that DOE has proposed.

Margo reviewed the path forward for CP strategy. The Tri-Parties are continuing discussions with the goal of signing a CP Strategy Agreement and having DOE submit proposed TPA change packages that support CP strategy implementation to EPA and Ecology by August 31. Official negotiations will begin in September, concluding in a tentative agreement on December 31. Margo said the goal is to have public comment take place during January and February. She said DOE-RL will continue briefing stakeholders throughout this process.

Harold provided a review of past Board advice; specifically the 55 pieces of advice the HAB has issued that pertain to groundwater. He said the Board has generally used the phrase "Protect the Columbia River" to refer to cleanup of the 100 Area, 100 Area groundwater and the river. The first HAB meeting was in September 1994, and the first piece of advice to mention cleanup along the river was in December 1994. Harold said mention of River Corridor cleanup was consistent, and was identified as a high or the highest priority in 20 pieces of advice. By contrast, Harold said the first mention of the CP vadose zone was not until April 1997. The groundwater in the 200 Area has also been mentioned as a high priority, but Harold said he could not find any instances where the Board stated that CP groundwater or vadose zone was the highest priority. He said in most cases the comments regarded emptying SSTs and characterizing the vadose zone.

In terms of end states, Harold said there has not been a clear, distinct position stated. In general, the Board has stated that future land use and tribal interests should be considered and unrestricted use is preferred where feasible. Additionally, the Board has consistently said that adequate characterization of the vadose zone in the CP is needed, and there have

been several pieces of advice about landfills and the preference for RTD for 200 Area liquid waste disposal sites. Harold said he found the most specific identification of program priorities in recent advice that originated in the Budgets and Contracts Committee (BCC). Other committees provided generalized statements regarding cleaning the CP Cribs, Burial Grounds and trenches. He said the committees have not been particularly vocal about priorities or standards, and suggested the RAP discuss whether it wants to state its priorities.

Regulator Perspectives

- Craig said EPA is thinking it may be able to reach a CP Strategy Agreement earlier, but this will need to be discussed. He said there are some unresolved issues with ICs and decision logic, and the Tri-Parties ran into time constraints and need more time to discuss these issues.

Committee Discussion

- Maynard asked if there is disagreement between the agencies on ICs and decision logic, or if they just ran out of time for discussion. Craig said there is a little of both issues. He said the Tri-Parties are approaching ICs differently, but he thinks they will end up in agreement. Additionally, more discussion on specifics is needed. He said the structure of the decisions is another issue, but the Tri-Parties are close to reaching agreement on this.
- Maynard asked if each of the Tri-Parties has come up with a unique approach, or whether this is a normal process. Craig said the Tri-Party Agencies are trying to follow the standard process and are looking into streamlining in some areas, such as the ROD strategy, although the regulatory agencies were not ready to streamline as much as DOE wanted to.
- Rick said he has been involved with facility negotiations, and the agencies have an effective strategy but need to determine dates and times. He said he has not been actively involved with soil and groundwater efforts, but Ecology is on board with these. He said dates, times and ROD strategies are the issues that need to be resolved.
- Maynard asked whether having one or two RODs for the CP is still being considered. Craig said there will be more than two RODs, but most likely less than 10.
- Dale said there was mention of nine RODs at the last RAP meeting. Craig said the regulatory agencies compromised with DOE, and there were some areas they wanted to include early, such as CW-5 and PW 1, 3 and 6.
- Sandra Lilligren asked who is on the Senior Executive Committee. Craig said the committee includes the signatories to the TPA as part of the TPA process.
- Wade suggested sorting out the principle issues that can be evaluated and integrated. He said he is glad to hear that the number of RODs has increased. He expressed concern that there seems to be a lack of focus on a ROD for the vadose zone, and said this should be part of the entire focus.

- Greg DeBruler asked for clarification on whether the Tri-Parties have reached an agreement on ecological protection standards. Margo said the Tri-Parties have agreed on the process to come to closure on ecological protection standards, but have not yet made a decision. Greg said there needs to be a process that provides the opportunity for the HAB and the public to be involved in the discussion about ecological protection standards. He said it is an issue that is timely for determining final RODs for the River Corridor (RC) and for starting work in the CP. Craig said the Tri-Parties have only recognized processes and regulatory framework that they can work within for ecological protection, and they are not getting ahead of public and stakeholder involvement.
- Greg asked whether it is correct to say that the proposal is putting together a major change package that will look holistically at the remaining work in two areas – the CP and the RC. Craig said this is correct, and there is also groundwater work involved in the process. Greg asked why the Tri-Parties are combining these elements, rather than separating them, and expressed concern that it will be difficult for the public to provide input on such a potentially extensive change package. He suggested that it would be advantageous to keep the RC and the CP as distinct issues. Margo said the Tri-Parties are not combining the RC and CP, they are focusing on the strategy for CP remediation, including CP groundwater. Craig said the overall negotiations called for changes to RC milestones and development of a CP strategy, so the Tri-Parties agreed to do this. He said he understands that it would be difficult to release this to the public as one change package. Greg suggested that these need to have separate processes and comment periods. Rick said the Senior Executive Committee is looking at these issues holistically, but there are separate sub-level working committees for areas such as facilities and the vadose zone. He said he thinks there will be separate products from these working committees.
- Dick asked for clarification on Margo's statement that the Outer Area cleanup goal is restricted surface use but some areas may be restricted. Margo said some areas may be restricted for access and operational concerns. She said the goal is to have the Outer Area complete by 2015, but for the WTP there will be an area where access will be restricted.
- Dick said the work plan for the 100 Area includes information on Model Group (MG)-1 that indicate that there may be contamination that will not be down to release levels for 150 years, and if this is true there would be restrictions. Craig said he does not think this is up to date, and the overall goal is to not have any control over the surface. Craig said MG-1 is an Ecology-lead unit but includes waste sites in the Inner Area as well as the Outer Area. He said the goal is to clean the Outer Area to have unrestricted surface use, but the MG-1 sites in the Inner Area may require 150 years, and EPA discussed that with Ecology as an option.
- Dick asked whether ecological risk standards already exist. Craig said there are different features within the process that may be applied depending on the best available scientific information. There is not yet a decision on a soil or source in the 200 Area, so this still needs to be determined. Rick said the standards exist but the amount of characterization has to be determined.

- Shelley expressed concern that there is a lack of transparency in this process, and that there may be lost opportunities if the public and HAB do not participate in these discussions before the RODs are set. Rick said DOE is developing a baseline for this work that will be provided at the end of August. He said when work is produced the HAB will be able to see it, but ARRA funding delayed the process so little has been produced.
- Wade expressed concern that all of these activities are being done under a CERCLA process and Resource Conservation Recovery Act (RCRA) criteria controls will be eliminated. Craig said all of the TSD approaches as they are followed according to regulations and the TPA are being preserved. He said some groundwater units have been changed to clarify the PO-1 is a CERCLA operable unit (OU) and its primary contaminants are radionuclides. He said he thinks the Tri-Parties have made progress in integrating these processes and that all of the regulatory frameworks will be addressed appropriately.
- Sandra said the groups the HAB members represent want to be part of the process, rather than just have information shared with them after decisions have been made. Craig said he would not characterize it this way because the Tri-Parties will get feedback from the public and make changes based on this. Dick commented that gathering input is a matter of timing and it is best to receive feedback early in the process.
- Greg expressed concern that there is not a mechanism to deal with recurring issues, such as ecological protection standards, monitored natural attenuation (MNA) and the 150-year timeline. He said the 200 MG-1, 200 MG-2 and 100 Area documents all have this issue. Greg said one of these issues is the assumption that the RC will have unrestricted surface use when the agreement from the interim RODs is that its surface use. He expressed concern that having a document out for comment in January will result in fast-track decision-making. Greg said he would like to hear assurances that that HAB will have an opportunity to provide input on these issues before October. Craig said the principles overlap, but the RC document would not be portrayed as the same as the CP strategy or EPA's white paper. Moses Jaraysi said he agrees that these issues should be resolved, although he thinks there is a misunderstanding regarding the 150-year timeline. He said this concept was agreed to in HAB advice when DOE formulated its risk framework to guide its documents, but these principles will not be finalized until they are in a ROD and can only be accepted after the groundwater and ecosystem have been protected. Margo said the Tri-Parties intend to continue to obtain input from the RAP, HAB and tribal nations as the agencies converge on some of these topics. She said the first opportunity is at the end of August, when DOE will request that the HAB look at its high-level strategy as a starting point. As the concept emerges, Margo said there is opportunity for influence and engagement on these activities. She suggested revisiting these issues at the September RAP meeting.
- Maynard said it is important that the HAB provide early input, but a starting point is needed. He expressed concern about the deadlines, and said it is important that the public has the opportunity to provide input and have a continuing dialogue with the agencies.

- Dick suggested that in the early stages of this process it may be best that individuals comment directly rather than through the HAB.
- Wade said the RAP has focused on DOE priorities, such as the River Corridor. With the exception of tanks and the vadose zone, which are issues the TWC has examined, the CP was not previously being funded and was not a priority. He said the committee has focused on DOE's presentation topics and priorities, and the focus has recently shifted to groundwater due to the stimulus funding. He suggested looking at other ways to approach topics of focus.
- Sandra commented that the HAB committees have been focusing on topics that the agencies have provided information on, and suggested that the committees could work to become less reactionary and more proactive.
- Shelley said at the July 22 meeting with Ines Triay she suggested that DOE has the ability to do a rack and stack and look at ways to combine analytical building blocks to evaluate ways to do efficient cleanup. She said she also recommended creating validated and verified baselines for five years in the future in order to have the ability to be forward-looking and proactive.
- Pam said she does not think the RAP has failed to play an appropriate role, as it has identified issues that have gone into BCC advice. She said the challenge is that there is a great deal of work underway at the site, and it is difficult to prioritize what issues should be set aside or looked at from a higher level. She suggested that this will require more work by issue managers outside of the committee.
- Gerry expressed concern that there has not been an adequate review of baselines and assumptions. The CP strategy and AIP will lock in principles, and he said he is worried that the agencies will determine principles that will then come out for public comment in January. He said the HAB is effective at providing input on principles, and the agencies should not adopt principles until they have received input on what these should be. He suggested that the HAB recommend that the agencies release their proposed principles and how they would be applied for public comment. Craig said he will encourage the agencies to release a draft strategy while they are still in negotiations so the HAB will be able to view it. Many of the principles would not be applied until there is a ROD, so he said it would go through that process as well. He said the agencies are in the early stages of negotiations, during which they are discussing the factors that will affect the 200 Area and how this cleanup will differ from the RC. He said this is a long process that will be followed by the ROD process. Gerry said if the principles include risk assessment and exposure scenarios, and if ARARs will be applied, then public involvement needs to take place from the beginning. He said if the agencies are going to develop a common set of principles to use for exposure scenarios then now is the time to receive input on what they should be. Craig said the strategy deliverable will include little detail and the agencies intend to involve stakeholders and the public before determining the details. Right now, they are working to address the type of issues that need to be discussed, the different processes and the contaminants of concern.
- Craig will work with Emy and Dennis Faulk to create a schedule for where the HAB, public and tribes can provide input.

- Dick suggested that input would be appropriate at the beginning of the feasibility studies (FS) when the alternatives to be examined are selected. He said once the scenarios that will be studied are selected it is too late for input.
- Harold suggested that the first priority is cleanup along the river, and for the CP characterization is important. He said the BCC advice has been consistent with these principles, and said RAP and TWC should state their priorities for inclusion in budget advice.
- Wade suggested creating a commitment policy statement for the CP similar to the one for the RC, which was “Complete the River.” Maynard suggested that full characterization needs to be part of the strategy.
- Harold commented that the federal budget process tends to be a near-term focus rather than a broad strategy, and the HAB has only been looking at what the following year’s funding should go toward. He said broad strategy statements on end states and the current proposal for the CP Outer Area and the industrial zone are needed to back this up.
- Gerry said there is also the 200 Model Group (MG)-1, and the need for discussions on this should be included in future advice. Craig said the 150-year timeline was never meant to apply to the Outer Area. Margo said DOE has heard these comments and accepts this criticism.
- Pam said in MG-1 there are 18 sites for RTD and another 16-18 where the action is undetermined. Craig said there are a greater number of sites, and most will be RTD, rather than MNA.
- Pam said the current TPA negotiations are budget-contingent, and she said it would be helpful to have a clearer understanding of these. Shelley said a more open process is needed.
- Gerry said having 200 MG-1, 200 MG-2, TPA negotiations and a CP strategy is difficult from a public-involvement perspective because the public may assume that they should wait for a CP strategy, even though many decisions will be made before that is released. Craig said MG-1 and MG-2 OUs were created so Ecology and EPA could divide these sites. This was a response to comments on M-15 changes that more characterization was needed, so the sites were divided into two groups to determine data gaps. Craig said these are planning to be completed as fill-in RTD work, but ARRA funding allowed this work to start through an action memo. At this time the EE/CAs had gone out for public comment and the Outer Area ROD was moving forward.
- Gerry said Craig’s description of the MG process created a clear picture of the sequence and why the ROD is coming out later. He asked why there are sites that are not RTD, and said concern about a lack of characterization does not seem to be addressed. Craig said the waste sites would be RTD and sites with questions would be characterized and would go through the RTD process, if necessary. He said there is still an Outer Area ROD to address anything not addressed by the MG process, and the action memo is an interim memo.

- Wade expressed concern that there will be similar problems to the RC cleanup, during which inadvertent discoveries were made during the cleanup process that required going back and making changes. He said many of these sites are contaminated and will not be cleaned up, while others that are not RTD that are in MG-1 do not have enough information to make a decision. He expressed concern that accelerating cleanup will create a long-term problem.
- The RAP will continue to monitor the CP strategy in order to look at lessons learned from the RC. Committee members want to ensure that needed confirmatory sampling, adequate characterization and the performance assessment that follows characterization are completed.
- The RAP will work to establish a strategy statement and work with the agencies' schedule and timeline.
- Pam said the RAP differs from TWC, which has issue managers tracking issues outside of the committee. She said RAP is not interacting with contractors, regulators and DOE on an ongoing basis through issue managers. Wade said in the past there was a process where issue managers would have a monthly meeting with DOE, and suggested this process be revisited. Wade, Dale and Pam volunteered to create a CP working group that will include DOE, agency representatives and technical staff.
- Margo will take this action back and determine how a CP working group would function, based on what has worked previously. Dale volunteered to provide input on how this process worked before and talk to Lori about how TWC works with agencies. The issue managers will develop a working process for this working group and bring it back to the committee.

National Priority List Deletion Package

Emy Laija, EPA, provided a high-level overview of the basic requirements for National Priority List (NPL) deletion. Sites on the NPL have been identified as a significant threat, as determined by a RI/FS to determine the nature of contamination, a proposed plan, public comment, and a ROD to select the remedy to apply. On-the-ground work begins when remedial design/remedial action (RD/RA) activities begin in order to implement work plans for the selected remedy. For RTD on a site, contamination is removed and disposed of, typically in ERDF, which results in meeting cleanup goals. Emy said there is usually an operation and maintenance (O&M) stage and closeout milestones, which are criteria that must be met before a site can qualify for deletion from the NPL. Removal authority can also be used for some sites, such as those that deal with an EE/CA or action memo, and removal authority can be used to implement a removal action. Eventually the site would be listed under a ROD.

Emy reviewed the milestones needed to close out a site. For long-term remedies, such as for groundwater or surface water, an interim RA report is used because the cleanup goals have not yet been reached. A final RA report is used for all other activities. Construction completion is another milestone. For a pump-and-treat system, the construction completion milestone would be met when the treatment plant and monitoring system are

operational. Site completion means that all response actions were successful and no further response action is needed. Emy reviewed site-completion criteria, which include the completion of all RODs, amendments, meeting cleanup goals, having ICs in place, and completing all RA reports. She said sites with O&M activities are also eligible for site deletion, since this is not considered a response action.

A site can be deleted from the NPL when no response or further action is appropriate and the state has written a letter of concurrence regarding the site deletion. Emy said partial site deletion is another option, which is similar to full deletion except for additional mapping requirements, including a GIS map, site coordinates, landmarks and contact information, as well as documentation requirements such as an RA report, a No-Action ROD or an ESD. To complete the deletion process, EPA must issue a Notice of Intent to Delete (NOID) that must be published in the Federal Register. After the NOID has been issued, there is a 30-day public comment period followed by a responsiveness summary. If EPA proceeds with site deletion after this process, it must publish a Notice of Deletion in the Federal Register.

Cliff Clark, DOE-EM, said final RODs must be in place before a site can be considered for deletion, and all activities for completion must be documented. He said DOE expects to then prepare a package to transmit to EPA. EPA is the only agency that can delete a site from the NPL, but must have concurrence from the state in order to do so.

Committee Discussion

- Dick asked the advantage of a partial deletion. Emy said the public may not have access if it is an NPL site. Additionally, there may be a cost associated with an NPL.
- Dick asked whether the RC would be a candidate for partial deletion. Craig said this depends on what is done with the reactors.
- Susan asked whether a site automatically stays on the NPL if its cleanup goals have been met but there is still contamination in place. Emy said the contamination would have to pose a threat to human or environmental health to stay on the list, but otherwise could be a candidate for deletion. Craig said if ICs are in place and five-year reviews are completed a site can be deleted from the list. Emy said deleted sites can still qualify for CERCLA five-year reviews. Cliff said a site can be deleted as long as the ICs have a legal requirement. For example, sites in the 100 Area could be deleted as long as there are ICs in place limiting the use of the groundwater.
- Maynard asked whether a site can be placed back on the NPL if a selected remedy, such as MNA, was not effective. Emy said it can be placed back on the list if there is a threat that was thought to be treated but was found later through the IC process.
- Wade asked whether the groundwater in the 1100 Area, which has sense been sold to the Port of Benton and leased to a new contractor, is still being monitored by the wells that are in place in that area. Craig confirmed that the groundwater is still being monitored, specifically a plume near one of the landfills. Wade expressed concern that there could be a re-emergence of contamination. Craig said when the 1100 Area was deleted there was less emphasis nationwide on the types of ICs and how rigorous

they are, and EPA has evolved its process for ICs. Craig said Dave Einan follows the 1100 Area, and he does know that there is some interest in monitoring in that area, even though it has been deleted.

- Dick asked the duration of the CERCLA five-year review process. Craig said this process continues as long as a site does not have unrestricted use and unlimited exposure.
- Maynard asked the responsibility of a new owner to monitor a deleted site if the owner changes. Cliff said it is an obligation to include a note in the deed restrictions for any site that has been deleted from the NPL when it is sold so any future landowner is aware that there was contamination there. If a later owner believes there is a problem that is the result of a previous owner then they have legal recourse to deal with it as a principle responsible party (PRP). Maynard said as an advisory group to the DOE, the HAB's interest would be that there is assurance a site is cleaned up to the maximum possible extent so DOE is not liable for future problems.

CERCLA 5-Year Review

Cliff said the criteria for the CERCLA five-year review have not changed, and provided an overview of the process. The last five-year review was finished in November 2006 and EPA approved it in May 2007. He said DOE is beginning to plan for the next five-year review, which it hopes to complete by November 2011, and is currently working internally to establish a schedule.

Cliff said CERCLA and EO 12580 were written into the Superfund law, and requires DOE to conduct review of the status of the response actions at least once every five years. Cliff said DOE is the lead agency because it is the legal owner. Under the TPA, the first five-year review was performed by EPA, which completed its review in April 2001. The five-year review scheduled to be completed by November 2011 will be the site's third five-year review.

Cliff reviewed the scope of five-year reviews, which includes evaluating whether a remedy is operational and functional, evaluating assumptions critical to the effectiveness of the remedial measures or the protection of human health and the environment, determining what corrective measures are required to address any identified deficiencies, and evaluating whether there are opportunities to optimize the long-term performance of the remedy or reduce life-cycle costs.

Cliff reviewed primary objectives for the five-year review as stated in the EPA Guidance, which are ensuring the long-term effectiveness of engineered or institutional measures put in place to protect human health and the environment, optimizing the effectiveness and implementation of remedy requirements, and minimizing duplicative documentation and paperwork.

Primary objectives for DOE review are to evaluate the performance of the selected remedy for each ROD; to confirm that immediate threats have been addressed, the

remedy will be protective when complete where a remedial action has not been completed, and the selected remedy remains protective where a site is in the long-term management phase; and to recommend actions to improve performance when the five-year review indicates that the remedy is not performing as designed. Craig said the purpose of the five-year review is not to reconsider decisions documented in the ROD, but to evaluate the performance of a decision against a documented set of requirements. Craig said the EPA Guidance does allow for considering new technologies.

Cliff said DOE will look at all four NPL sites, including the 100, 200, 300 and 1100 areas. He said the 1100 Area will still be evaluated, even though it has been deleted from the NPL. The method for this review will be to update the previous five-year review report to reflect decisions made and activities initiated or completed since 2006. Cliff said during the last five-year review DOE determined that additional assistance was needed, so assisting DOE with this effort was built into the new MSC.

Committee Discussion

- Maynard asked whether the selected remedy is evaluated as part of the five-year review process, since Cliff said the purpose of the five-year review process is not to reconsider decisions in the ROD. Cliff said the selected remedy is evaluated. For example, for an RTD process DOE would evaluate whether the RTD activity accomplished the goals established in the ROD. If the goals were not met, DOE would need to make recommendations to do either more of the same remedy or choose a different remedy. Improvements in technology are also considered and could result in a change to the remedy through a ROD amendment. So DOE can consider a different remedy if the selected remedy is not working, but the purpose of the five-year review process is not to reconsider the remedy if it is working.
- Wade said one intention of the EPA Guidance was to have independent reviews, and EPA typically has national teams available for this. Craig said he is aware that there are groups that can be hired to help complete a review, but typically this has not been needed. He said he is unsure how involved an independent review would be, but this is something that could be considered. Cliff said DOE could look at this suggestion.
- Pam asked the status of having MNA be the remedy for the 300 Area. She said she remembers that this was an issue in the past two reviews. Cliff said the review will look at the status of all of the CERCLA actions that are in progress or have been completed, including those that have not yet been completed. Pam said the first five-year review determined that MNA did not work, and asked whether additional technology is being explored. Cliff said the review will point out that remedy is not working.
- Greg commented that RODs are set up for the end state to be protective of human health and the environment, and asked whether the review will look at the current state, new technology and cleanup goals. Cliff said this was factored into the last review, but this is complicated by the fact that the site has interim RODs. Cliff said it is difficult to look far forward without final RODs, but DOE can look at whether

cleanup actions will meet the objectives of the interim RODs. He said the overall goal is to meet the criteria of being protective of human health and the environment, so DOE evaluates whether the cleanup action will meet these goals when it is completed.

- Greg expressed concern that the acceptable dose for ecological protection has not been determined. He asked whether the fact that the end state has not been determined is an issue for the CERCLA review process. Cliff said if the RODs establish criteria that DOE can compare against then this would be used, but since this has not been established DOE will evaluate remedies in decision documents and evaluate cleanup performance using these.
- Harold asked the process that would take place if a solution is found to be ineffective. He asked whether it is automatic that the agencies would re-evaluate it, or whether it is subject to negotiation. Cliff said the agencies would look at why a remedy was not successful, including factors such as an error in execution or flawed process. He said the agencies and the public would then formulate a new approach to be more successful. Cliff said if there is a discrepancy this would need to be resolved, and if there is not a solution there are ICs that limit access, but that would be a last resort.
- Susan asked whether a ROD could be amended if a remedy is not working. Craig said RODs can be amended and O&M plans can be changed.
- Sandra suggested that RAP committee members look at CERCLA training that is available online, especially the specifics of the five-year review process.
- Sandra commented that interim RODs are not typical at many sites, but still require a process that develops RA objectives and goals. Craig said DOE tries to review everything at the same time for convenience. He said he thinks the EPA Guidance is well written and helpful, and suggested people look at this.
- Cliff provided a DOE Web site that DOE has that provides information on each section of CERCLA:
<http://homer.ornl.gov/nuclearsafety/env/guidance/cercla/siteclosure/remedialcompletion.htm>
- EPA and Department of Defense also have sites on how they conduct CERCLA reviews, and Craig and Sandra will send additional links for Susan Hayman to distribute.

RC 100-Area Remedial Investigation/Feasibility Study Work Plan

Dale reviewed the integrated 100 Area RI/FS Work Plan. He said it is difficult to manage and determine an appropriate response for such a large document, so he hoped a presentation from DOE would suggest an approach for reviewing the document.

Jim Hanson, DOE-RL, provided an overview of the 100 Area RI/FS Work Plan, which includes a lead document for each reactor area or decision unit as well as an addendum that is associated with each one. He suggested reading the work plan once then reviewing each addendum. DOE has completed an addendum for the D&H and K areas. The 300

Area document is separate from the 100 Area integrated document and is currently being reviewed by DOE. He said the BC, F, and IU 2 and 6 documents are underway.

Jim reviewed RC Decision Unit boundaries, which were created by DOE, EPA and Ecology in order to have final RODs related to geographic areas. He said various geographic areas were combined into the BC Area, including B and C reactors. Additionally, the agencies integrated groundwater and the vadose zone. The six decision units are the BC Area, K Area, N Area, D&H Area, F Area, and IU 2&6. Jim said under the interim action approach there are operational units (OUs) associated with the groundwater and OUs associated with waste site, so this process is a way to combine these.

Jim reviewed the 100 Area Work Plan, a common denominator between the 100 Area decision units. Associated with each decision unit for the 100 Area is an addendum that specifically addresses the work scope and sampling and analysis plan that DOE would like to implement.

Jane Borghese, CHPRC, provided an overview of the best way to review the work plan. The integrated work plan is overarching and contains information useful for all of the documents. She said the structure of each addendum is similar, but there are areas within them that contain information that is specific to each decision unit. Chapter two of the addendum has similar information for each decision unit regarding its environmental setting and process history, but the known and potential contamination subject area may be different for each reactor area. Chapter four contains a conceptual site model and lists data gaps and data needs, which Jane said would be different for each reactor area. Similarities in chapter four would be due to the similar functioning of the reactor areas. Appendix E of each document contains a sampling analysis plan (SAP), which will be specific to each unit. Jane suggested reviewing the overarching document, as well as chapters two and four and Appendix E.

Jim reviewed the status of each document. EPA is currently reviewing the Integrated 100 Area RI/FS Work Plan and Ecology is reviewing the 100 D&H Decision Unit RI/FS Work Plan. EPA comments have been received for the 100 K Decision Unit RI/FS Work Plan. Jim said the documents currently in DOE-RL review are the 100 BC Decision Unit RI/FS Work Plan, the 100 F/IU-2/IU-6 Decision Unit RI/FS Work Plan, and the 300 Area Decision Unit RI/FS Work Plan. The 100 N Decision Unit RI/FS Work Plan is currently in draft development.

Regulator Perspectives

- Laura Buelow, EPA, said EPA's first round of responses was due to regulators Monday, July 27. She said in general EPA has not seen any fundamental flaws in the document but does have many comments. Some comments are structural to make the document easier to read and some are content-related comments. She said the first EPA comments on the K Area document have been provided to DOE.

- Mandy Jones, Ecology, said Ecology anticipates submitting its comments on the work plan, addendum and SAP on Monday, July 27. Ecology had scheduled two meetings with DOE and contractors to discuss issues such as errors, omissions and shared concerns in the addendum and SAP. Additionally, Ecology has workshops scheduled with DOE and EPA for work plan review and workshops with DOE and the contractor for review of Ecology's comments on the addendum and SAP.

Committee Discussion

- Greg asked whether the RC Integrated RI/FS work plan has been released for public review. Jim said the D&H Area and K Area, which are currently out for regulator review, have been released. The tribes, National Resource Trustee Council (NRTC) and stakeholders were also included in the distribution of those documents, and they are also in the administrative record. There is no plan to release the documents for public comment. Jim said the Proposed Plan will go out for public comment. The work plan will have a 60-day review by regulators. After regulator comments are incorporated, the document will go through a field review and an RI report will be created from this data. Greg expressed concern that there are serious disconnects and major assumptions that he thinks merit heavy committee work and public review. He said fundamental problems with this document will create future problems.
- Pam asked how the OUs were divided between EPA and Ecology. Jim said this is based on what was in the TPA. Dick suggested adding a column to the legend that lists the lead for each area.
- Maynard asked whether the regulatory agencies were involved before the initial draft was issued to discuss the document's structure and initial concerns. Jim said an outline of how the documents were going to be set up was shared with the regulators initially, and then it went through iterations within DOE. He said the D&H Area document was the first example and was used as a template for the K and BC areas. Laura said there was a kick-off meeting approximately one year ago during which the Tri-Parties discussed the strategy for the documents. She said the regulators saw pieces of the documents, but not an official draft. Jim said DOE went through a systematic planning approach with regulators to identify issues such as data gaps and uncertainties.
- Dale said identifying data gaps, risks and uncertainties is a good approach, but he has conceptual high-level concerns, such as the focus on "magical cures" and relying on caps and ICs. He said there must be enforcement, and DOE cannot count on ICs.
- Greg asked whether any other state and federal agencies, besides EPA, DOE, Washington, Oregon and the tribes have been included in this process to see whether protectiveness standards are being met. Jim said there are federal protection levels that the site must meet, and DOE is developing remedial alternatives around these federal and state criteria, which is how they will show how remediation standards and user scenarios are being met.
- Greg commented that there seem to be assumptions and disconnects between what tools are available and regulatory standards. He said an acceptable standard for

protectiveness of the ecosystem has not been set, and there needs to be a consultation about the status of these issues. He requested that there be a public-comment process for the document, including a day-long public workshop. He said the document relates to RC cleanup, so it must meet definitive protectiveness standards and have a certain end state. Jim said the work plan is not a final document, which would have a public process associated with it. A proposed plan will eventually be submitted for regulatory review, and a ROD would go out for public comment. Greg expressed concern that DOE needs to look at assumptions and the end state, as sampling and analysis will be changed based on these assumptions. He said the process needs to be transparent and collaborative.

- Pam asked how long DOE has been working on the work plan. Jim said they have been working on the plan for less than two years.
- Pam asked what the interaction with NRTC has been on the work plan. Jim said he gave the same presentation to NRTC. Pam said it seems that the Natural Resource Damage Assessment (NRDA) that is being undertaken needs to be integrated with the work plan process, since to determine the final work for this area a damage assessment is needed. Jim said he cannot speak to that process. Paula Call, DOE-RL, said this is currently a separate process. Pam said DOE committed to completing a damage assessment so it could be incorporated into this planning. Greg commented that a damage assessment is important when considering long-term potential liabilities. Paula said that process is beginning, and the two processes are not linked in any prescriptive manner. She said if this is a recommendation the HAB wishes to make then it should be included in future advice.
- Shelley said she understood that the tribes are working with DOE-HQ to get the NRDA completed at the beginning of the process, rather than doing damage mitigation later.
- Greg commented that the HAB has previously issued advice on NRDA and damage assessments. He said this is not only a regulatory requirement, it is part of CERCLA.
- Maynard suggested the issue managers discuss this issue with DOE. This is not only a regulatory requirement, it is part of CERCLA. This is something you have to do because it is required. Maynard suggested issue managers discuss this with DOE. He wasn't sure if the HAB needs to give advice, but if they collaborate on this and it can't be resolved then advice may be needed.
- Pam asked for clarification that the document is the work plan for the RI/FS, not the RI/FS itself. Jim said this is correct. The work plan will obtain data that will be consolidated within the RI report.
- Pam said given that the work plan will lead to the final ROD and the NRDA is proceeding, it seems that information from the damage assessment should be included in the process in order to inform final cleanup choices in the final ROD. Mike Thompson, DOE-RL, said DOE would like these processes to be integrated. Interim RODs are currently in place, which means DOE is taking focused action to get to ROD, which is a cleanup decision under CERCLA that is reviewed every five years. Mike said DOE and the regulators have come to a negotiated position that includes an

aggressive schedule to move forward with the 100 and 300 areas. The work plan includes work DOE and the regulators believe needs to be completed to determine the scope that will lead to meeting CERCLA agreements. He said to the extent possible DOE would like to integrate the NRDA with investigations under CERCLA.

- Pam asked how the RC assessment factors into this process. Mike said the RC assessment is also being completed under CERCLA, and there is work being done to meet levels under CERCLA. He said if there is work the HAB thinks needs to be done that could be integrated DOE would like this input.
- Dale asked when an opportunity would be for HAB to make these comments. Mike said if HAB or its members identify work that should be included in the work plans for CERCLA or NRDA they can give that comment to DOE. He said he cannot commit that the work will be included, but DOE will evaluate whether it will fit into the schedule and consider it for the future.
- Sandra commented that she thinks DOE could do a better job explaining how different processes, such as the RC baseline risk assessment and systematic planning, relate to each other. Mike said he agrees with this, and said the work plan's executive summary could be more effective at explaining the conceptual model, data gaps, and feasible studies and technologies.
- Wade said a primer on the NRTC activities and how these fit into the regulatory process and an update on how the RC analysis will be integrated is needed. Mike said one issue with this is timing and where DOE is in developing the work plans, including schedules and milestones. He said ideally these processes would be simultaneous. Dale commented that the NRTC chairman will make a presentation at the September RAP meeting.
- Dick asked whether NRDA is done on the existing damage state or the projected final state after remediation, and how the possibilities for remediation are factored into this process. Jim said the primary objective is to protect the Columbia River, and in areas where there is groundwater contamination pump-and-treat processes are being expanded under the interim action process. Mike said generally NRDA is done at the end of the process, but if there is information that can be gathered now that is needed for this assessment DOE would like to include that now.
- Dale suggested the RAP including this document and procedure in a future meeting for further discussion. He said he thinks it would be valuable for the committee to provide comments on the issue. Jim said comments to the regulators are due back to DOE at the end of this month. Laura said these comments are part of the administrative record, and EPA would share its comments with the HAB. Mandy said Ecology would share its comments as well.
- Maynard said he supports the use of an executive summary for the documents. Laura said for the 100 Area EPA did a three-to-five page executive summary as well as a longer, higher-level 30-page technical summary on a risk assessment. Mike said he thinks this is a viable way to resolve this, and a technical summary would be useful if it could be inserted behind an executive summary. Maynard asked when that would

be available. Mike said this would most likely be a response to comments from regulatory agencies.

- Dale suggested that the HAB look at regulators' comments before submitting its own comments. Greg asked who comments could be directly sent to. Jim Hanson said he is the appropriate person to receive these comments.
- DOE will send Jim's e-mail address to Greg. EPA and Ecology will send their comments to Susan Hayman for distribution.
- Dale suggested this issue go to the HAB as an information-sharing opportunity, rather than advice and individuals submit their comments directly to DOE.

Committee Business

Susan Hayman said there was a request that the committee select its chair and vice chair at the July meeting, rather than the August meeting. The Committee selected Pam Larsen as Chair, and Maynard Plahuta as Vice-chair.

Action Items / Commitments

- Wade will follow up with work on the purgewater issue, which is timely considering ARRA funding.
- Craig will work with Emy and Dennis Faulk to create a schedule for where the HAB, public and tribes can provide input on the CP strategy.
- The RAP will continue to monitor the CP strategy in order to look at lessons learned from the RC. Committee members want to ensure that needed confirmatory sampling, adequate characterization and the performance assessment that follows characterization are completed.
- The RAP will work to establish a CP strategy statement and work with the agencies' schedule and timeline.
- Wade, Dale and Pam will create a CP working group that will include DOE, agency representatives and technical staff.
- Margo will look into how a CP working group would function, based on what has worked previously. Dale volunteered to provide input on how this process worked before and talk to Lori about how TWC works with agencies. The issue managers will develop a working process for this working group and bring it back to the committee.
- Cliff provided a DOE Web site that DOE to help Committee members better understand CERCLA:
<http://homer.ornl.gov/nuclearsafety/env/guidance/cercla/siteclosure/remedialcompletion.htm>
- EPA and Department of Defense also have sites on how they conduct CERCLA reviews, and Craig and Sandra will send additional links for Susan Hayman to distribute.

- Jim Hanson is the appropriate person to receive comments on the 100 Area RI/FS work plan. DOE will send Jim's e-mail address to Greg. EPA and Ecology will send their comments to Susan Hayman for distribution.
- Dale suggested this issue go to the HAB as an information-sharing opportunity, rather than advice and individuals submit their comments directly to DOE.

Handouts

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

- Purgewater Unit Photograph, Doug Hildebrand, July 23, 2009.
- River and Plateau Committee Update: The Central Plateau Cleanup Strategy, U.S. Department of Energy, U.S. Environmental Protection Agency, Washington Department of Ecology, July 23, 2009.
- NPL Site Deletion, Emerald Laija, July 23, 2009.
- CERCLA Threshold, Balancing and Modifying Criteria, Paula Call, July 23, 2009.
- 3rd CERCLA Five Year Review for the Hanford Site, US Department of Energy, July 23, 2009.
- River Corridor Integrated RI/FS Work Planning, Jim Hanson, July 23, 2009.

Attendees

HAB Members and Alternates

Shelley Cimon	Pam Larsen	Gerry Pollet
Greg DeBruler (on phone)	Sandra Lilligren	Wade Riggsbee
Dale Engstrom	Susan Leckband	Dick Smith
Harold Heacock	Maynard Plahuta	Gene Van Liew

Others

Paula Call, DOE-RL	Rick Bond, Ecology	Jon Cortes, CH2M Hill
Doug Hildebrand, DOE-RL	Les Fort, Ecology	Jane Borghese, CHPRC
Margo Vode, DOE-RL	Mandy Jones, Ecology	Bruce Ford, CHPRC
Cliff Clark, DOE-EM	Ginger Wireman, Ecology	Dale McKenney, CHPRC
	Laura Buelow, EPA	Barb Wise, CHPRC
	Craig Cameron, EPA	Peter Bengtson, WCH
	Emerald Laija, EPA	Jack Donnelly, WCH
		Ella Feist, WCH
		Susan Hayman, EnviroIssues
		Molly Jensen, EnviroIssues