

DRAFT MEETING SUMMARY (v.1)

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HANFORD ADVISORY BOARD

RIVER AND PLATEAU COMMITTEE

April 15, 2003

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, Introductions, and Committee Business

Susan Leckband, committee vice-chair, opened the meeting and briefly reviewed the agenda. The March meeting summary was adopted as final.

M-24 Change Package

Mike Thompson, Department of Energy-Richland Office (DOE-RL), discussed the progress on the M-24 change package and the results this would have. M-24 is a long-term milestone under the Tri-Party Agreement (TPA) that called for the installation of up to fifty Resource Conservation and Recovery Act (RCRA) monitoring wells a year. TPA milestone M-24 was put in place to establish annual goals for well completion, based on the large quantity originally anticipated. The object was to get a levelized schedule to put the wells in place early on in the TPA. The number of wells is renegotiated each year.

The discharge of effluents across the plateau has been stopped and this has caused significant changes including lowered groundwater levels in the 200 Area, even below the well screens. The pump and treat operations, along with decreasing water levels have affected the direction of the groundwater. To investigate groundwater impacts, regulations for Treatment, Storage and Disposal (TSD) facilities, call for a minimum of

one up gradient and three down gradient wells to determine if a facility is impacting the groundwater. Because of these changes, well drilling has increased. The contractor has begun monitoring for the tank waste in the groundwater. Five out of the seven waste management areas are currently under assessment due to a significant difference between up and down gradient well contaminant levels. The discrepancy in contaminant levels could be the result of several factors. Additional wells were required to investigate this discrepancy.

Since 1987, 300 wells have been drilled. Due to M-24, RCRA wells are the highest priority. The drilling of Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) wells will continue because some of the plumes have not been investigated. RCRA and Atomic Energy Act (AEA) well drilling is ongoing. The Constraints and Challenges to Cleanup (C3T) effort for the site's groundwater recommended prioritizing well drilling across the site. A revised milestone for the CERCLA, RCRA, and Atomic Energy Act wells will be developed.

A Data Quality Objective (DQO) has recently been published on the well needs in the 200 Area and from this a change package to M-24 has been drafted. The change package identified sixty wells to be installed, which are a combination of all three types of wells. These would be completed between now and 2006 at a rate of fifteen per year for the next two years. A review will be completed yearly to agree upon prioritization and to assess if there should be changes made. The majority of these wells would be for monitoring. The waste that will be generated will eventually go into the environmental waste management program to be stored at the Environmental Restoration Disposal Facility (ERDF) temporarily. A class one change request is required because a major milestone will be changed. This will go out for public comment. The changes themselves have been agreed upon but the precise language of the document is still being discussed.

Committee Discussion

- A committee member asked if wells that have gone dry are capped to prevent drag down. Mike replied that they do this by prioritizing which ones have a pathway down. Wells constructed after 1988 generally have good seals while the ones built before that time may be an issue.
- Wade Riggsbee asked if these wells will include characterization. Mike stated that many of the new wells are being placed in areas that already have a large number of wells and have been characterized in the past. In the areas where the outcome is worth the expense they would complete characterization but many of the new wells will be in areas that have a fair amount of characterization already.

Regulator Perspectives

- Dennis Faulk, Environmental Protection Agency (EPA), commented they are very happy because they have been interested in installing more CERCLA wells.

- Jane Hedges, Washington State Department of Ecology (Ecology) commented that they feel it is a much more balanced approach and that it has been a positive process.

Groundwater Protection Project (GPP) Update

Dick Wilde, Fluor, presented a brief update on the progress of the Groundwater Protection Project (GPP).

- The execution plan for the U-plant project was completed. This is a detailed schedule of all the decisions to be made.
- B/C Area project manager, Mark Benecke, was hired. The expected completion date for both the Uranium Plume and the B/C Crib Area is 2006. It is anticipated that the high-risk waste sites will be remediated by 2012.
- Recharge conditions are anticipated to be eliminated by 9/2008. Two new leaks north of the reactor in F Area have been discovered.
- Pump and treat interim actions will be completed by 2012. The final In-situ Redox Manipulation (ISRM) injections started on April 2, 2003, and will be completed on April 20th in accordance with TPA milestone M-16-27C. The vapor extraction at the Plutonium Finishing Plant (PFP) started on April 1, 2003.
- The draft Focus Feasibility Study/Proposed Plan (FFS/PP) for Gable Mountain Pond was sent for regulator review on March 31, 2003. The 618-10 monitoring wells were installed in March of 2003. Characterization of the chemical sewer operable unit waste sites is continuing.
- The final draft of the groundwater protection management plan has been submitted to DOE.
- Two upcoming workshops are being prepared; one on 618-10/11 in June and one on N-springs with a date to be announced. The 618 workshop will be a technical workshop focusing on remote handling, packaging, lessons learned, new technologies and a tour of the burial grounds. A letter will be sent to formally invite the Board. The N-springs workshop will look at what the real situation is on that site and options for treatment.
- Dick wanted to make the committee aware that the groundwater protection website is now up and running. A standing offer of a site tour to anyone interested is still open.
<http://www.hanford.gov/cp/gpp/>

Hanford Performance Management Plan (HPMP), Strategic Initiative No. 3

Dale McKenney, Fluor, discussed the Cesium/Strontium Capsules Project. The project is in the planning mode and will be defining the project over the next year. The purpose of this project is to place the capsules into a safer storage configuration. This will reduce the maintenance and facility costs associated with the continued operation of the Waste Encapsulation and Storage Facility and the dependence upon mechanical monitoring mechanisms. Placing the capsules in a new configuration at this time does not preclude any future management options. This project has an expected completion date of 9/30/06. This is a two-year acceleration from the Hanford Performance Management Plan (HPMP) which had an expected completion date of 2008. This was changed when the activity was rolled into Fluor's contract. A newly negotiated performance incentive is

associated with this project. The largest concern is the schedule for this project will be extremely tight for permitting and procurement. Fluor believes this schedule is workable, and is working with the vendors and regulators.

The goal of this project is to use innovative business systems and practices to reduce the schedule and cost risk. Commercial fuel storage systems are being adapted for use in the Capsules Project in an attempt to minimize design time. The safety and risk analysis for the commercial systems can be rolled into the system studies performed by the DOE. A vendor forum was recently held which supported the adaptation of commercial systems within the required schedule. There were twelve interested respondents present at this forum and each was engaged in a one-on-one conversation with DOE. An attempt is being made to use a fixed price contracting strategy.

Northwest Energy recently finished a similar project. Lessons learned from that project may be incorporated in the Capsules Project. To assist with this project, Northwest Energy's project manager has been retained as a consultant. Northwest Energy is also offering the use of like resources to help the project stay on schedule. To help achieve the schedule, a dialogue with the regulators is starting early and will be continuous throughout the project. Additionally, a plan is in development regarding communication with the key stakeholders and regulators.

Matt McCormick, DOE-RL, was introduced to the committee. Matt is the newly appointed Assistant Manager of the Central Plateau. He briefly discussed the progress on the Special Nuclear Material. In the HPMP, the objective is to remove the nuclear material inventory from Hanford by September 2005; however there needs to be a place to ship this material to. DOE Environmental Management (EM) is working on identifying such a place. The department has made three commitments: to homeland security; to minimize the location where plutonium is stored; and to move plutonium into hardened and secured locations. In order to move the plutonium, DOE needs to ensure there is a viable pathway for the plutonium from Savannah River. Once this is done, the department will issue a record of decision (ROD) to move the plutonium from Hanford to Savannah River. When the ROD is issued, the contractor will be directed to start scheduling shipments starting as early as the fall of 2003.

Committee Discussion

- Wade commented that one of the problems in the past was how to best monitor the capsules. Dale responded that an instrumentation package would be placed with the capsules so it will be easier to determine where the problems originate.
- Dale commented that the capsules are much hotter than the usual spent fuel. Preliminary evaluations have been done and the team is confident this is workable. They are going to depend on the vendor to give the detailed technical information.
- A committee member asked what effect there would be on the current integrity of the capsules. Dale replied the capsules will be placed into a new overpack and then welded shut. The intention is to make sure this will not be irreversible, so the

capsules could be pulled out in their original form in the future. The vendors have been provided with the details of the capsules and will propose the new system.

- A committee member asked where most of the plutonium complex-wide is located. Matt responded most of it is stored at Pantex.
- Susan asked if the transportation of material to Savannah River is predicated on the idea that Yucca Mountain will open? Matt noted that it is, and he is confident Yucca Mountain will open.
- Dirk Dunning asked if it was possible to use the empty igloos at Pantex for additional storage. Matt replied it was an alternative but the form is not consistent with the material handled at Pantex. In the event something happens to the containers, there are no facilities on site to fix them.
- Susan noted work has been ongoing at PFP to change the makeup of the weapons grade material so it can be transported offsite. Matt replied that there is not the capability to put the material in the form that is allowed at Yucca Mountain.
- Shelley Cimon commented that they are not talking about performance criteria but about consolidating material because they do not know what will happen. Matt replied that there are criteria for Yucca Mountain acceptance. A lot of analysis has been done on the high-level waste glass form and he is confident it would be accepted.
- Several committee members commented they are uncomfortable with shipping the material through other states as much as they would like to see the material removed from Hanford.
- Several committee members commented it would be a good idea to bring the board up to speed on what is going on. While the committee has been briefed heavily on Cesium, Strontium, and PFP, the board has not heard much about what is going on with these topics. It would be of value to discuss what is happening with the spent fuel, sludge removal, PFP stabilization, and the D&D work.
- Harold commented a brief overview of each topic should be given including what is known, what is not known and what should be watched. Susan added that opportunities for involvement should be included.
- Committee members agreed the board briefing should be an overview of what is in Strategic Initiative Number 3, and the status of each of the above-mentioned topics. Also, it was commented that the DOE representatives should be the presenters for this topic. Dirk will work with public involvement staff and the facilitation team to develop the board agenda item.

Regulator Perspectives

- John Price, Ecology, stated the biggest issue will be the permitting. Ecology is committed to trying to keep the permitting process moving. They are happy with everything and are trying to work out the best way to permit the project.

Revised Draft Hanford Solid Waste Environmental Impact Statement (HSW-EIS)

The committee decided a committee of the whole is needed to discuss the revised draft HSW-EIS. During this, DOE staff would discuss the changes made to this EIS, how board advice was responded to, as well as the major driving forces for the changes. Committee members are asked to look over previous comments to see if they were adequately addressed as well as to highlight major issues for comment. Committee members will each be focusing on specific chapters of the EIS and will report on these at the committee of the whole. Mike Collins said he was unable to definitely say the Board's advice would be considered if it were received after May 27, the official comment period closing date. Committee members expressed concern over this, and decided to present a proposal to the Executive Issues Committee recommending advice on the revised draft be adopted prior to the June board meeting.

An assignment matrix will be developed, based on the committee's discussion and will be sent to the full Board, asking for help with the review of the revised draft.

The committee also used this time to discuss topics for future committee meetings. These include:

- M-24 change package.
- Groundwater tour.
- DQO for the 200 area.
- 200-CW-1 and CW-3

200 Area Ecological Risk Assessment

Bryan Foley, DOE-RL, discussed the Central Plateau Ecological Evaluation. The main focus of the completed revisions was to focus on how to follow the EPA's ecological risk assessment guidance. RL will receive the revised report this week and will be sending it to the EPA, Ecology, the U.S. Nuclear Regulatory Commission (NRC), and the Tribes. To do the assessment, they used the EPA's eight-step process for risk assessment. The eight steps are:

1. Screening Level – includes a site visit, problem formulation, and a toxicity evaluation.
2. Screening Level – includes an exposure estimate, and a risk calculation
3. Problem formulation – includes a toxicity evaluation, an endpoint assessment, exposure pathways, and questions/hypotheses
4. Study design and DQO Process – includes a work plan and Sampling Analysis Plan (SAP)
5. Verification of field sampling design
6. Site investigation and data analysis
7. Risk characterization
8. Risk management

The first two steps were completed for this document. A Screening-Level Ecological Risk Assessment (SLERA) is to be a conservative evaluation of the risk to ecological receptors from stressors. In the 200 Area, stressors would be the introduction of contaminants and habitat elimination. The SLERA is used to identify pathways for ecological receptors to be exposed to the contamination and evaluates potential risk from those exposures.

There are several parts to each step.

1.1 Site visit

The visit characterizes the Central Plateau and identifies important aspects of the ecology as well as the condition of the waste sites to consider during the ecological risk assessment. The risk framework set out the boundaries of the core zone and identified waste sites in the Central Plateau, which are outside of the core zone (land use is conservation mining). The site visit should define the simplified habitats. Most of the waste sites are in disturbed habitat with little vegetation to support wildlife. It was found that this evaluation could not be done as an operable unit by operable unit assessment. A holistic approach had to be used to fully identify the habitats. The summary of the site visit found that the shrub-steppe offers habitat for wildlife and needs protection. There are also individual species with limited populations as well as new-to-science species that need protection. Most of the waste has been stabilized thereby limiting ecological access. The decisions to stabilize other sites must be balanced with the decision to disrupt habitat.

1.2 Problem formulation

This identified potential exposure paths. These include direct contact with or ingestion of the soil by invertebrates and burrowing mammals and the uptake of soil contaminants by vegetation. Also of concern is the bioaccumulation through ingestion of food items consumed by wildlife that may forage at the waste sites.

1.3 Toxicity evaluation

Toxicity levels are available for many of the contaminants found in the 200 Area. These were identified from preliminary sampling data available from a subset of waste sites. These were screened primarily with respect to the likelihood to which they would be present in the environment. Toxicity values are not available for some of the contaminants and a risk management decision will be needed to determine how these contaminants will be handled.

2.1 Screening level focused on exposure estimates

The parameters for this are set conservatively at 100%. The organism specific factor used is body weight. The area use factor is bioavailability, life stage, body weight, food ingestion rates, bioaccumulation and dietary composition. Various receptor species will be studied including the big sagebrush, darkling beetles, killdeer and badger.

2.2 Completion of a risk calculation

For the SLERA, the state and DOE provide contaminant-specific numerical values to determine whether or not a risk may be present. The risk calculation provides relative risks between waste sites. Existing data is available for hundreds of waste sites in the Central Plateau. It will be necessary to perform a DQO to determine what gaps there are in the analysis and data. DOE recognizes that they have a responsibility to manage the conservation of the shrub habitat. The EPA screening assessment will be uniformly implemented to allow an initial evaluation of the species that should be considered and protected. This will allow the opportunity to screen contaminants for which ones should be considered and carried forward.

The key points to remember are that the Hanford site has one of the largest pieces of shrub-steppe habitat in a region where habitat is declining. Managing the protection of shrub-steppe at the Hanford Site is critical for the regional ecology. Also, the Central Plateau Ecological Evaluation implements the EPA Screening Level Assessment process for the broader Central Plateau area versus operable unit by operable unit. This approach will allow for an evaluation of species to be protected and conserved. In addition, this approach allows for the selection of contaminants of potential ecological concern that should be considered in the operable unit level assessments.

Committee Discussion

- Wade asked how resource damage for the site is assessed and defined? This will ultimately be tied to how the site is closed. He sees a possible problem in setting this up at the screening level because historically when it has been done in this way, the tendency has been to make that the final and skip the steps in the middle. Bryan responded that there currently is not a process for assessing resource damage to the site and that if there is a need to continue beyond the screening level, then that will be done.
- A committee member commented that since DOE is a trustee of the site, then they should want to gather further data to ensure that there is not damage in the end. DOE is using their own standards and criteria versus those of Fish and Wildlife, the Department of Natural Resources (DNR), or the EPA. Since the site is ultimately being turned over to one of these parties, then might it be appropriate to use those agencies' criteria during the cleanup process. Bryan replied that these agencies have been invited to have discussions on this topic.
- A committee member noted that an area of high quality sage has not been identified. Some of it is located along the fence line of an area that is to be used for disposal. The seventeen listed species may limit what can be done for remediation. Due to the fire, a reassessment of this area should be done to determine what the makeup of the area is today. The DOE has long applied pesticides and herbicides to the waste sites so this also has changed the makeup of the habitat. As the dirt has been churned up, these chemicals have been brought back to the surface of the soil.
- Dirk commented the standards allow for a 10%-20% kill rate, which is damage. Bryan replied those figures are used because the documents have to be based on in place requirements. These are used because they are what is available.

- Harold Heacock noted that there is little natural habitat left on site. He wondered what the site is being compared with since most of the area has been burnt at least once in the last fifty years. He wanted to know what the objective was, whether it is to restore to pre-burn conditions or to pre-Hanford conditions. Dennis responded that these are waste sites that are contributing to ecological risk, plant uptake and animal uptake. While the area is being surveyed, an assessment can be done to determine the condition of the habitat.

Regulator Perspectives

- John Price, Ecology, commented this plan has not been reviewed in detail. Two things Ecology likes a lot are that it follows EPA's guidance and it clearly identifies data gaps. However, one problem is that there is no near term plan to fill those gaps. The intent is to consider and evaluate those gaps as a paper study. Ecology believes more data collection should take place and that the data gaps identified in the document need to be addressed. For example, the historical programs have focused on the radionuclides that are identified as a data gap. Those need to be investigated further. The infrastructure is in place to collect additional data. Some of this work could be coordinated with the natural resources trustees.
- Dennis Faulk, EPA, commented there is a disconnect in whether the data is being collected before selection or after. The screening assessment is very good. This will set the stepping-stone for determining the location of the high quality habitat and to ensure steps are taken to improve the habitat. It may be discovered that performing some remedial actions may further damage the habitat.

Feasibility Study and Proposed Plan for the 200-CW-1 and 200-CW-3 Operable Units and the 200 North Area Waste Sites

Bryan Foley, DOE-RL, gave a brief overview of the feasibility study and proposed plan for the 200-CW-1 and 200-CW-3 Operable units and the 200 North Area Waste Sites. The study proposes to consolidate operable units CW-1 and CW-3. The CERCLA risk-based approach for remedial decision-making is implemented in this process. The plan incorporates the first Central Plateau baseline ecological risk assessment, the consideration of a Native American scenario and, the recognition of natural attenuation as a viable risk-driven remedial action. The plan recommends the use of four remedial alternatives including the use of protective, simplified covers instead of more costly engineered covers where appropriate. Remedial alternatives that minimize impact to the environment and natural resources are recommended.

There are numerous waste sites at each location including:

- 200-CW-1 Gable Mountain Pond – 25 waste sites
- 200-CW-3 200 North Area Cooling Water Waste Group – 7 waste sites
- 200 North Miscellaneous Operable Units – 6 waste sites

The Core Zone was defined and is consistent with:

EPA/WAC Guidance
Hanford Advisory Board (Board) Advice #132 and response
Future Site Use Working Group (FSUWG) Values
C3T Risk Framework workshops

Several Remedial Alternatives have been identified. All with the exception of two were identified in the 200 Area implementation plan, which is a basic work plan that covers all of the risk investigation/feasibility study (RI/FS) processes. The alternatives identified include:

1. No Action (8 sites)
2. Maintain Existing Soil Cover, Institutional Controls, and Natural Attenuation (14 sites)
3. Remove and Dispose (6 sites)
4. Capping
 - 4a. Simplified Soil Cap (10 sites)
 - 4b. Modified RCRA C Cap (0 sites)

The CERCLA decision criteria were used and must be met in this process. There are three criteria which include:

Threshold Criteria – overall protection of human health and environment, and compliance with the applicable or relevant and appropriate requirements (ARAR).

Balancing Criteria – long-term effectiveness and permanence, reduction of toxicity, implementability and cost, mobility, and volume through treatment.

Modifying Criteria – incorporates local values, and state and community acceptance.

The document encompasses many sensitivities including ones relating to; Native American Scenarios, Ecological risk assessment, the 200-CW-3 waste sites, and the proposed soil caps. The key points to remember in this are that the alternatives reflect DOE's commitment to cleanup decision-making that is driven by risk-based end states that are protective of human health and the environment. The alternatives incorporate Future Site Use Working Group (FSUWG) values by minimizing impacts to environment and natural resources while being protective. Lastly, the proposed alternatives get the job done right and completely the first time. These are not interim steps.

The regulators will be reviewing the plan in April and May and then it will be released for public review in July/August of 2003. The record of decision is expected in April of 2004.

Committee Discussion

- Wade asked if there is a clean closure requirement, in terms of having to completely remediate and close the site. Bruce Ford, Fluor, stated that CERCLA requires a range

of alternatives be looked at along with a cost analysis. This is to determine where the least amount of damage will be done and where logistics can be taken care of.

- Bruce commented that a pure institutional controls approach was not used because those are not solely protective. Any site that needed controls maintained past 100 years would not be a good place to use these controls.
- Dirk asked which hydrologic model was used for the caps in the vadose zones. Bruce responded the information used is developed for each specific site and coordinates with what other people are doing to use others experience. Most of the modeling was done with the groundwater moving downward with some moving sideways. This ties in very closely with what the System Assessment Capability (SAC) is doing.
- Dennis noted that the proposal is to let nature take its course at about 2/3 of the sites. After this has happened then the institutional controls and maintenance will be started. A conservation scenario was not used so an industrial use scenario was employed instead. He wanted to know if this is consistent with the values of the Board. Bryan stated the DOE believes they have followed the Board's advice closely.

Regulator Perspectives

- John Price added that Ecology has concerns with the use of institutional controls. Ecology is unsure such controls would be equally protective for the needed time when funding is not guaranteed for the same time period.

DOE Risk-Based End States Policy

The committee briefly discussed the letter drafted at the April Board meeting on this topic. The process to define the end state for Hanford is being developed within the C3T framework and the committee would like to continue to be involved in the process. Issue managers will continue to follow this issue.

Handouts

- River and Plateau Committee Meeting Agenda, April 15, 2003
- Cesium/Strontium Capsules Project, Dale McKenney, April 15, 2003
- Feasibility Study and Proposed Plan for the 200-CW-1 and 200-CW-3 Operable Units and the 200 North Area Waste Sites, Bryan Foley, April 1, 2003
- Central Plateau Ecological Evaluation, Bryan Foley, April 15, 2003
- Hanford Advisory Board Letter on Risk-Based End States, April 4, 2003

Attendees

HAB Members and Alternates

Shelley Cimon	Harold Heacock	Gerry Pollet (by phone)
Jim Curdy	Susan Leckband	Wade Riggsbee
Dirk Dunning	Jeff Luke	Dave Watrous

Others

Matt McCormick, DOE-RL	Rick Bond, Ecology	Nancy Myers, BHI
John Morse, DOE-RL	Jane Hedges, Ecology	Liana Herron, EnviroIssues
Yvonne Sherman, DOE-RL	Jean Vanni, Ecology	Penny Mabie, EnviroIssues
Michael Thompson, DOE-RL	Debra McBaugh, Dept. of Health	Bruce Ford, Fluor
	Dennis Faulk, EPA	Barb Wise, Fluor
		Doug Sherwood, Rivers Edge Environmental
		John Stang, TC-Herald