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# **ERC Team**

## **Meeting Minutes**

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**SUBJECT** GROUNDWATER/VADOSE ZONE INTEGRATION OPEN PROJECT MEETING -  
NOVEMBER 1, 1999

**TO** Distribution

**FROM** Michael J. Graham, Groundwater/Vadose Zone Integration Project Manager

**DATE** November 8, 1999

**ATTENDEES**

See Attached List

**DISTRIBUTION**

Attendees  
GW/VZ Distribution List  
Document and Information Services H0-09

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**NEXT GW/VZ INTEGRATION PROJECT OPEN MEETING:**

Next Meeting: Monday, November 15, 1999 – 1-3 p.m.  
Location: Bechtel Hanford, Inc., Assembly Room (Badging Required)  
Local Call-In Number: (509) 376-7411  
Toll Free Call-In Number: (800) 664-0771

**MEETING MINUTES:**

A Groundwater/Vadose Zone (GW/VZ) Integration Project Open Meeting was held on November 1, 1999 in Richland, Washington, at the Bechtel Hanford, Inc. (BHI) Assembly Room.

**INTEGRATION REQUIREMENTS FOR VADOSE ZONE MODELING (Fred Mann)**

I have received comments on the internal draft of the Integration Requirements for Vadose Zone Modeling Document from the three programs that will use the document: Tank Farms Vadose Zone Program, the 200 Areas Remedial Action Project, and System Assessment Capability (SAC). I've also received comments from the United States Geological Survey (USGS) on behalf of the Environmental Protection Agency (EPA). The Washington State Department of Ecology (Ecology) has requested an extension to the comment period until the end of this week. As a result, the document is not ready for broader review yet. I'm hoping to get all the comments incorporated before sending it out for further review. Hopefully it will be ready to go out next Monday or Tuesday (November 8 or 9).

**INTERIM REMEDIAL ACTION RECORD OF DECISION (ROD) AMENDMENT (Arlene Tortoso):**

The Interim Remedial Action Record of Decision (ROD) Amendment for the deployment of the In Situ Reduction/Oxidation (Redox) Manipulation (ISRM) at the 100-D Area "hot spot" plume was signed by the Department of Energy (DOE), Ecology, and EPA last week. DOE is required to begin implementation of the treatment barrier within 15 months after signing the ROD.

COMMENT: The deployment of this barrier is contained in fiscal year 2000 (FY00). Now we have the approval to charge ahead. We're a little behind schedule since we thought that the ROD would have been approved earlier.

RESPONSE: We're only a month behind what we had planned, so it's not that big a deal.

200 AREAS REMEDIAL ACTION PROJECT UPDATE (Bruce Ford):

The Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) Change Package that has been out there for a while with regard to the 200-TW-1 Scavenged Waste and 200-TW-2 Tank Waste Operable Units was signed at the Interagency Management Integration System (IAMIT) meeting last Tuesday. The regulators have approved it. It deals with the liquid waste disposal sites at the B/BX/BY and T/TX/TY Tank Farms.

I'd also like to give a quick update on our field activities. We've completed the test pit excavations of the representative sites for the 200-CW-1 Chemical Waste Operable Unit. That includes Gable Mountain Pond and B-Pond. The next task is drilling a characterization borehole at Gable Mountain Pond. We've met with Ecology about the technical issues with this borehole, and we think we've resolved those. We'll be drilling into the middle, deepest part of the pond that's been indicated to have the highest contaminant levels. We'll drill down until we hit either the water table or salt, whichever comes first. We'll start collecting samples at 25 feet. If we hit salt before getting to the water table, then we plan to continue down to the water table and see if we can collect some data on a fractured system.

NOVEMBER 9-10 RISK SCIENCE AND TECHNOLOGY NATIONAL LABS WORKSHOP #2 (Amoret Bunn):

We are getting ready for the second Risk Science and Technology (S&T) Workshop next week. A draft agenda is available (Attachment 1). The purpose of the workshop is to take the issues and needs for improving risk, identified in the first workshop for the four main risk areas (ecological, human health, economic, and socio-cultural), and start formulating an approach to communicate the issues and needs and get them into the roadmapping process. The first day of the upcoming workshop will include reports on the various issues and needs and breakout groups based on those. The second day we'll work on the cross-disciplinary data needs. For instance, certain economic issues have direct and indirect impacts on human health and socio-cultural issues. That's the general theme for the second day.

QUESTION: Do you think headway was made on cultural and lifestyle impacts in the first meeting?

RESPONSE: Yes I (Amoret Bunn) do. At the first workshop, there was time given to various groups from on and off the Hanford site to share perspectives. Richard Stoffle from the University of Arizona (Bureau of Applied Research and Anthropology) talked about his experience with Tribal Nations. He looked at our socio-cultural conceptual model and asked, "Where's the culture?" I think his critique helped. We got a better idea of what kind of information we're missing there. It's not necessarily an S&T issue, but we need to get on common ground before getting to S&T.

COMMENT: I (Marty Bensky) thought that what he expressed was disappointing. His message seemed to be that it would take 10-20 years of communications with the Tribes to fully understand what their priorities are. It sounded like he has a nice relationship with the Tribes in his area, but he really didn't provide anything to sink your teeth into. We're looking to develop impact metrics. We need to know what to look for.

RESPONSE: That seemed to be a common feeling from the first day. On day two, people focused more on the message of "Do we know what we really need to do?" That came out the second day.

RESPONSE: I wasn't there the second day. Please continue.

RESPONSE: We understand that, in the metrics we produce, cultural impacts will be associated with contamination. If there is no way for humans to be exposed to contaminants, then there's no risk. We haven't identified all of the possible pathways to exposure though. We also need a better understanding of the communities that may be affected and things beyond direct exposure that we need to take into account.

COMMENT: It sounds like you're turning this into a health issue, and that's fine. Mr. Stoffle's presentation was more along the lines of the mystical. Things like closing down Interstate-15 because it blocks a spiritual Tribal pathway. Things like that.

RESPONSE: We definitely need to get a better handle on Tribal thinking. We need to work hard to set up an avenue to understand what they think are the impacts. Then there's a basis for further communication. That may be all it takes to get us moving in the right direction. Mr. Stoffle brought out a lot of things beyond our understanding, and I think that was purposeful on his part to try to shake things up. It was to get the message across that the things that we think are impacts and what the Tribes might consider impacts might not be along the same lines. Day two we went back to discussing what we know and don't know and the steps we need to take to get to mutual understanding.

#### ENVIRONMENTAL MANAGEMENT SCIENCE PROGRAM PRINCIPLE INVESTIGATOR

##### NOVEMBER 16-18 MEETING (Michael Graham):

There will be an Environmental Management Science Program (EMSP) Principle Investigator (PI) Meeting here on November 16-18. An agenda is in the process of being developed, but there is nothing available yet.

This really is a first for the EMSP. We've been given license to help focus these EMSP grants on the Hanford problems. One way we're going to do that is by bringing the PIs here and have a dialogue with them about what they're doing. We're going to talk about the things that you can't get from reading a proposal, and we're going to try to communicate the why and how to apply their work to Hanford. We're going to map their work to our roadmap and direct and manage their work. In the past the grants were handed out and they gave a report on their work on an annual basis. That was kind of nice if you were the researcher. It gave you a lot of freedom. What we're trying to do is a balancing act to allow creativity but still maintain focus.

QUESTION: This is a significant change from the previous EMSP process. Do you get a feeling from the scientists involved yet? Are they resentful of having someone over their shoulder, or are they helpful and willing to try to focus on real world problems?

ANSWER: There are of course a range of responses, but I think that most would like to see their work put to use rather than just being theory on paper.

RESPONSE: There has been a good response to the upcoming meeting too. Many have expressed an eagerness to attend. That's a good sign.

INTEGRATION PROJECT INVOLVEMENT WITH OREGON HANFORD WASTE BOARD (Michael Graham):

Last Tuesday I traveled with Keith Klein and Wade Ballard of DOE-RL down to Oregon to meet with the Oregon Hanford Waste Board. I'm glad that Dirk Dunning from the Oregon Office of Energy (OOOE) is here today to be able to share the perspective from the board. I've attached a handout that we gave to the board (Attachment 2) that covers some highlights and outcomes of the Integration Project over the last year. It's an attempt to communicate in simple English what difference the Project has made at Hanford. Keith (Klein) did a presentation about his vision for the site. I think people appreciated his attendance.

COMMENT: (Dirk Dunning) Very much.

Wade (Ballard) has only been on the job a couple of weeks. He communicated what he's about and what he would like to accomplish.

QUESTION: Was there a meeting closeout? What was the general feeling of the board?

ANSWER: The board was very pleased. We're looking forward to seeing Mr. Klein again at our meeting in March. Overall it was a productive meeting, but so many things were covered at the meeting that I (Dirk Dunning) really haven't gotten through a debrief.

COMMENT: There were quite a few other things covered. Among the topics were Tokamura and Waste Isolation Pilot Plant transportation issues.

RESPONSE: We've looked at trimming the number of major topics per meeting.

COMMENT: My (Michael Graham) sense was that you don't get much of a break before diving right into the next major topic.

COMMENT: Dirk made a comment that our integrated long-range plan was omitted. It's the first time we've pulled together a list like this, but I definitely felt that was an accomplishment. We're trying to get away from showing the planning and show the actual work and impacts, but we do appreciate the input.

RESPONSE: Some might view it that way, but I view it as more operations than planning.

COMMENT: You're still not telling people what the system and Integration Project really are. It doesn't quite meet my (Marty Bensky) personal expectations of what people should know of the system.

COMMENT: Should the Integration Project change its name?

RESPONSE: It's definitely misnamed. Calling it the GW/VZ Integration Project is a misnomer, much like the River Protection Project (RPP). GW/VZ is almost misleading. Some people are not paying attention to the Integration Project because they feel it doesn't speak to their interest, when in actuality they have a misconception due to the name of the project.

REGULATORY PATH FORWARD WORK GROUP ON 100 AREA ENDSTATES (Moses Jarayssi):

We held a Regulatory Path Forward Work Group full-day workshop last week on 100 Area endstates. We had previously decided to break things down into waste groupings, and the 100 Area Groundwater was the first we decided to focus on. The intent of the workshops is to have open discussions on cleanup endpoints.

There were three main topics for our workshop. The first was an update on the present status of groundwater and contamination plumes in the 100 Area, what's being measured, and what Interim Records of Decision (RODs) have been deployed. The second topic was a discussion on future land use for the area. We looked at the Hanford Remedial Action (HRA) Environmental Impact Statement (EIS) approved by DOE. There are three or four possible endstates in that HRA EIS and we also looked at other possibilities. The third topic was possible cleanup endpoints. The possibilities there are almost endless. It's hard to look at endpoints one-by-one because there are just so many different factors. We discussed the relationship between endpoints and land use. That's a complicated issue. We also looked at the outcomes in the Tri-Party Agreement, which are to happen by 2018. There are different views on what those expectations really are. We weren't trying to come up with a list of endpoints yet, but rather a list of data that's missing to be able to address the issue of endpoints.

This was just the first phase. The next phase will be later this month when DOE and the regulators meet to discuss the outcomes and issues from the first meeting. What are key regulatory decisions for cleanup? What is needed to support those decisions? What do the timelines look like for integrated cleanup of the 100 Area? These are questions that need to be addressed.

The next waste grouping that we'll look at is the source units in the 100 Area. We're running this one next so that it doesn't become separate from the 100 Area groundwater portion. They are interrelated. We plan to start work on that in mid-December.

QUESTION: What parameters are you using to define endpoints? Are you basing them on contaminant concentrations in the soil or the groundwater or the river?

ANSWER: Those were the exact questions we discussed for about two hours on Thursday. Like I said, it's an extremely complex issue. We're talking about levels of certain contaminants of concern and what those contaminants should be, what the probable land use will be, what restrictions there might be for usage, and a multitude of other factors.

COMMENT: It's really the parameters that concern me (Marty Bensky) more. It doesn't sound like you're taking into account impacts on humans.

RESPONSE: We're not going to get into developing the metrics. That's the responsibility of the regulators and the project responsible for that waste group. Our focus is more on the regulatory drivers that apply.

COMMENT: That gets me part of the way there. This is a big integration issue. There are regulatory requirements that have been established that need to be met, but meanwhile there are issues beyond the scope of the regulatory requirements that have real impacts. Sometimes the two are even at odds with one another. Integrating the two is an interesting challenge. I'm more interested in real impacts. Regulations are often done with sloppy calculations. This Project seems to be doing things better than that. You need to be looking at more than simply being within regulatory compliance.

RESPONSE: The first phase was designed to look at the regulatory side. Now we need to take the non-regulatory side into account and see how to affect the regulatory process if necessary.

COMMENT: Regulations change by presenting genuine impact findings.

COMMENT: We'll be addressing the non-regulatory issues in the next phase of the process over the next month.

**UPCOMING EVENTS AND OPPORTUNITIES FOR PARTICIPATION:**

See attached calendar (Attachment 3).

**NOTES:**

GW/VZ Web Site location: <http://www.bhi-erc.com/vadose>

If you have questions or comments please contact Dru Butler (509-375-4669), Gary Jewell (509-372-9192), or Karen Strickland (509-372-9236)

**ATTACHMENTS:**

- 1) Risk Science and Technology (S&T) Workshop #2 – November 9-10 Draft Agenda
- 2) Groundwater/Vadose Zone Integration Project Highlights and Outcomes
- 3) GW/VZ Integration Project Two Month Look Ahead Calendar

**ATTENDEES:**

Martin Bensky – Tri-Cities Caucus  
Amoret Bunn - PNNL  
Dru Butler – BHI  
Don Clark – JAI Corp  
Dirk Dunning – OOOE  
Bruce Ford – BHI  
Michael Graham – BHI  
Mary Harmon – DOE-HQ  
George Henckel – BHI  
Doug Hildebrand – DOE-RL  
David Holland – Ecology  
Kathy Huss – SAIC  
Moses Jarayssi – BHI

Gary Jewell – BHI  
Tony Knepp – LMHC  
Stan Leja – Ecology  
Katy Makeig – SMS  
Fred Mann – FDNW  
David Olson – DOE-RL  
Gordon Rogers – HAB  
Virginia Rohay – CHI  
Stan Sobczyk – NPT  
Mike Thompson – DOE-RL  
Arlene Tortoso – DOE-RL  
Rob Yasek – DOE-RL

**ATTACHMENT 1**

**Risk S&T National Labs Workshop**

**November 9 Agenda**

Red Lion Hanford House

802 George Washington Way, Richland, Washington

Ice Harbor/McNary Rooms

8:00 – 8:10	Assemble	
8:10 – 8:20	Gordon Bilyard	Welcome & agendas for today and tomorrow
8:20 – 9:00	Terri Stewart	Risk S&T Needs – To Projects and Tasks S&T Activities Definition Key components of roadmapping exercise Workshop products with handout of format
9:00 – 9:20	Mike Newman	Overview of progress on ecological risk S&T Needs & Issues
9:20 – 9:40	Margaret MacDonell	Overview of progress on human health risk S&T Needs & Issues
9:40 – 10:00	Break	
10:00 – 10:20	David Clark	Overview of progress on economic risk S&T Needs & Issues
10:20 – 10:40	Richard Stoffle	Overview of progress on socio-cultural risk S&T Needs & Issues
10:40 – 12:00	Breakout groups	Discuss approach and linkages for S&T issues and needs (including identification of data needs)
12:00 – 1:00	Lunch at Hanford House	
1:00 - 3:00	Breakout groups	Discuss approach and linkages for S&T issues and needs (including identification of data needs)
3:00 – 3:30	Mona Wright	Overview of progress on socio-cultural risk S&T
3:30 – 4:00	Mike Scott	Overview of progress on economic risk S&T
4:00 – 4:30	Wayne Martin	Overview of progress on human health risk S&T
4:30 – 5:00	Amoret Bunn	Overview of progress on ecological risk S&T
6:00 - ?	Dinner at TS Cattle Company on Clearwater Avenue, Kennewick. Group reservation.	

**Risk S&T National Labs Workshop  
November 10 Agenda  
Red Lion Hanford House  
802 George Washington Way, Richland, Washington  
Ice Harbor/McNary Rooms**

8:00 – 8:10	Assemble	
8:10 – 8:30	Gordon Bilyard	Cross-disciplinary data needs for risk assessment within GW/VZ IP
8:30 – 12:00	Breakout groups	Identify cross-disciplinary data needs for risk assessment within GW/VZ IP
12:00 – 1:00	Lunch at Hanford House	
1:00 – 2:00	Breakout groups	Crosswalk Risk S&T needs and data needs with key components of roadmapping exercise
2:00 – 2:20	Margaret MacDonell	Report back on human health risk cross-disciplinary data needs
2:20 – 2:40	Mike Newman	Report back on ecological risk cross-disciplinary data needs
2:40 - 3:00	David Clark	Report back on economic risk cross-disciplinary data needs
3:00 – 3:20	Break	
3:20 – 3:40	Richard Stoffle	Report back on socio-cultural risk cross-disciplinary data needs
3:40 – 4:30	Gordon Bilyard (Facilitated discussion)	Cumulative risk assessment as an S&T need: Develop description of need, scope, and approach to cumulative risk assessment for GW/VZ IP.
4:30 – 4:45	Terri Stewart Gordon Bilyard	Next steps Closing words

## **ATTACHMENT 2**

(Presented to Oregon Hanford Waste Board – October 26, 1999)

### **Groundwater/Vadose Zone Integration Project**

#### **Department of Energy, Richland Office**

Highlights and Outcomes

October 1999

The Groundwater/Vadose Zone Integration Project (Integration Project) has completed its first full year of existence (Fiscal Year 1999). Planning and program development has been a primary focus, and project outcomes reflect the early stages of improved fieldwork, collection and use of scientific data, and stronger management attention.

### **Fieldwork (Characterization, Assessment, Monitoring) Has Been Accelerated and Improved**

- Hanford's well and borehole drilling work is now managed under an integrated planning process to improve overall quality, efficiency and consistency of work.
- For the first time in years, a *new* borehole was drilled inside the tank farms to monitor the vadose zone (the soil above the groundwater) and the groundwater. The recent data from this borehole showed an unexpectedly high level of technetium-99 in the groundwater. This data will help target additional monitoring work, and will assist in the comprehensive, cumulative effects assessment being conducted by the Integration Project.
- Following extensive planning and coordination efforts, vadose zone characterization in the 200 Areas is now underway. Important information about the extent and nature of vadose zone contamination is being generated to guide and tailor the next steps in cleanup actions. This data will also be used to enhance the overall understanding of Hanford's subsurface and the way contaminants move in the soil.

### **Find New and Better Ways to Cleanup the Subsurface**

- Long-term, more effective groundwater remediation solutions are being supported by the Integration Project. Interim cleanup solutions, such as groundwater pump-and-treat systems, are being challenged by new state-of-the-art cleanup technologies. "In Situ Redox" is a chromium subsurface barrier wall that is being installed along portions of the river. When this innovative project is completed, salmon will be protected from exposure to toxic chromium.

### **Science and Technology is Being Applied to Hanford's Cleanup Projects**

- Scientific data collection has been combined with the required fieldwork to generate useful data, saving time and resources. At B-Pond and Gable Mountain Pond, the required groundwater monitoring and well drilling has been expanded to collect important scientific data at the same time.
- The Department of Energy-Headquarters has awarded \$25 million to assist Hanford in resolving its most pressing gaps in scientific understanding about the subsurface and Columbia River systems. The projects being funded under this new program explore the way in which contaminants move through the vadose zone and into the groundwater. This will help scientists understand and predict contaminant

transport times from the vadose zone to groundwater and toward the river environments.

### **Hanford Decisions That Impact the Subsurface and River Have Been Influenced and Improved**

- Keith Klein, Department of Energy, Richland Office (DOE-RL) Manager has realigned his organization to give the Integration Project a stronger role in Hanford's strategic planning and decision making. The Integration Project provides a link to all of the Department of Energy, Office of River Protection (DOE-ORP) and DOE-RL related workscope to ensure that cleanup decisions are made in full consideration of the vadose zone, groundwater and river.
- The Integration Project is assembling the information and tools needed to inform and influence decisions about significant Hanford cleanup options, such as Single Shell Tank Retrieval and related leak loss potential, and the final endstates for the Hanford cleanup mission. This comprehensive, scientific assessment capability has not existed before.
- Sitewide priority has been established for repairing the leaking water lines in the 200 Areas. These water leaks add to the problem of contaminant movement through the soil and toward the groundwater. Before the Integration Project was formed, infrastructure repairs such as these were not viewed as important to the environmental protection mission of Hanford.

### **Single Point-Of-Contact for Vadose Zone, Groundwater, River Documents and Public Comment Periods**

- The Integration Project has convened an "open process" to provide a single point-of-contact which provides opportunities for involvement by stakeholders, regulators, and Tribal Nations. Documents relative to Hanford groundwater, vadose zone, and river issues are now available for public review and comment through the Integration Project. A Project website lists public comment periods and provides access to documents available for review and comment (<http://www.bhi-erc.com/vadose>).

**ATTACHMENT 3**

*GW/VZ INTEGRATION PROJECT*  
**NOVEMBER 8, 1999 – JANUARY 28, 2000**  
*TWO MONTH LOOK AHEAD CALENDAR*

<b>November 9-10</b>	Risk S&T National Labs Workshop #2 Doubletree Hanford House – Richland
<b>November 10</b>	HAB-ER Meeting BHI Assembly Room – 9 a.m.-4 p.m.
<b>November 15</b>	GW/VZ Open Project Team Meeting BHI Assembly Room – 1-3 p.m. (Contact: Dru Butler )
<b>November 16-18</b>	EMSP Principle Investigator Orientation Meeting PNNL EMSL Building (Contact: Terri Stewart)
<b>December 2-3</b>	HAB Meeting Doubletree Lloyd Center – Portland,
<b>December 6</b>	GW/VZ Open Project Team Meeting BHI Assembly Room – 1-3 p.m. (Contact: Dru Butler )
<b>December 9</b>	HAB-ER Meeting BHI Assembly Room – 9 a.m.-4 p.m.
<b>December 20</b>	GW/VZ Open Project Team Meeting BHI Assembly Room – 1-3 p.m. (Contact: Dru Butler )
<b>January 3</b>	GW/VZ Open Project Team Meeting BHI Assembly Room – 1-3 p.m. (Contact: Dru Butler )
<b>January 21</b>	GW/VZ Open Project Team Meeting BHI Assembly Room – 1-3 p.m. (Contact: Dru Butler )
<b>January 26-28</b>	GW/VZ Integration Project Expert Panel (IPEP) Meeting BHI Assembly Room (Contact: Virginia Rohay)