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SUBJECT GROUNDWATER/VADOSE ZONE INTEGRATION PROJECT MEETING -
DECEMBER 4, 2000

TO Distribution

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

DATE December 13, 2000

ATTENDEES
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NEXT GW/VZ INTEGRATION PROJECT OPEN MEETING:

Next Meeting: Monday, December 18, 2000 – 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 December 4, 2000, in Richland, Washington, at the Bechtel Hanford, Inc. (BHI) Assembly Room.

PROJECT REPORT:

General Project Update (Michael Graham)

Schedule Update (Michael Graham) There have not been any major changes to the schedule since our previous discussions. I will point out the high points as we go through the schedule. The 200-CS-1 Field Characterization (chemical sewer group) work has fallen below the line (not currently funded for FY01), but we will include this in our FY01 work as a “stretch” (scheduled work to be funded through efficiencies in other Integration Project activities). The rest of the work in the 200 Area remains in tact. The next Integration Project Expert Panel (IPEP) meeting is tentatively scheduled to take place in late April. The panel proposed a March meeting to focus on System Assessment Capability (SAC), but Bob Bryce has peer review scheduled for SAC activities in March. It does not make sense to have peer review and IPEP in the same time frame. The IPEP agreed and are tentatively pushing their meeting back to the last week in April.

We have made some minor adjustments to the Detailed Work Plan (DWP) in the last couple of weeks. The task leads are working on that this week.

Review of the Sunday Tri-City Herald Article on Groundwater (Mike Thompson/Michael Graham)

The article discussed groundwater remediation systems that have been in place for five years. The agencies (the U.S. Department of Energy [DOE], the Washington Department of Ecology [Ecology], and the U.S.

Environmental Protection Agency [EPA]) all agree that the current pump-and-treat systems need to be upgraded.

COMMENT (Dib Goswami [Ecology]): The article reflects Ecology's opinion. I was quoted as saying that we should look at different things totally, but I didn't mean that. Our agency liked the article overall.

If you don't get the Tri-City Herald, you can view the article on their web page (www.tri-cityherald.com). They keep an extensive archive of news articles on the Hanford Site on their Hanford link.

QUESTION: There were no references in the article to "risk" or "impact assessments." As a result, there is no suggestion that anyone thinks that the groundwater contamination is not a problem. There is nothing to suggest that there are differing opinions on this issue. Why doesn't the existence of that sentiment ever get in coverage?

ANSWER: If you would like to have that prospective brought out, perhaps a letter to the editor. The paper doesn't quote risk because I don't think there's good articulation out there of what the true risk is.

QUESTION: Then why spend taxpayer dollars to fix it if you don't know what the risk is?

ANSWER: We've only got a handful of treatment systems at Hanford. As for carbon tetrachloride, there are the equivalents of 2,500 drums dumped in the soil. This plume is still spreading across the site, and if left unchecked, it could reach the river. We've got one hundred square miles of contaminated groundwater under Hanford with only a few systems to address it.

QUESTION: I don't think the article took it to the end of the scenario. You just exaggerate the chromium contamination, but what does that really mean in terms of potential harm? The likelihood of actual harm is pretty low, but you never hear that. The fish would have to search for those spots of high chromium concentrations.

ANSWER: Those are the types of questions that the SAC is trying to answer. We don't have a lot of answers now.

QUESTION: I understand that, and yet that never gets mentioned. We've got nothing to tell us we ought to worry about it.

I think without a reasonable base-line risk assessment, you're always going to be floundering as to what is an issue and what's not. SAC will give us insight to what the priorities are.

QUESTION: What about the current information that indicates the risks to be small? It's not as though SAC Rev. 0 is the first analysis ever done.

ANSWER: There have been some analyses completed, but they are not a comprehensive review that takes into account all our information sources. Under our work, we are working to complete a sitewide assessment – something that has not been accomplished at Hanford. This will provide the technical basis for making the final cleanup decisions.

Review of Last Week's Environmental Management Science Program (EMSP) Workshop (Michael Graham)

Last week, the second EMSP Workshop was held here in Richland. The workshop serves as a bridge between the researchers and our actual site needs here at Hanford. We have received a lot of positive feedback on the workshop. This type of interaction between the researchers and the site has not been done anywhere else. Normally, the grants are awarded, and then the researchers write their reports three years later. There is no on-going dialogue between researchers and the site. There was a great exchange on tank waste and the dense non-aqueous phase liquid (DNAPL) problem in the 200 West Area. The Site influences the EMSP projects, but does not directly manage them. There are a lot of good outcomes from the EMSP work.

Interested parties will be able to get copies of the workshop presentations. They will be available on CDs and will be available soon through Gary McNair's organization, Pacific Northwest National Laboratory. The next EMSP will be focused on high-level waste and Decontamination and Decommissioning (D&D).

QUESTION: Are those papers on the web?

ANSWER: Not all of them.

QUESTION: When you do the minutes, could you include websites?

ANSWER: Sure. (www.pnl.gov/emsp)

Discussion of System Assessment Capability's Release Model (Bob Bryce, PNNL)

I want to talk about history matching. This fall we're looking at each of the technical element models in SAC to compare them with previous analyses or field data that is available. We will compare results predicted from 1944 to the present with actual field data. Bob Riley (PNNL) just submitted his draft report last week. His report includes four release models - salt cake, reactor block, soil debris and cement. In terms of high-level overview, the salt cake, soil debris and cement results compared favorably with field results. Reactor block results are different from the Surplus Production Environmental Impact Statement (EIS). The SAC model accounts for radioactive decay whereas the EIS model did not. In the SAC model, release is a function of inventory remaining in containment. The EIS model is based on a fraction released per day from the original inventory. The SAC model considers the cocoon effective for 75 years, release starts after that date.

QUESTION: What are the release assumptions after 75 years?

ANSWER: The cocoon disappears, but then a distribution coefficient (K_d) model for how it releases from the block. Cocooning refers to Hanford's Reactor Interim Safe Storage activities, such as the completed work at C Reactor. It is designed to isolate the reactor block for 75 years. Current plans are to remove the reactor block and bury it in the 200 Area at the end of the 75-year cocoon phase.

QUESTION: At the basalt repository, we can make certain assumptions and end up with a bell curve. Sounds like you have one source.

ANSWER: At the end of the 75 years, we remove the reactor block from the cocoon.

QUESTION: I want to tie this to some kind of a release rate from the source. What does that release rate look like after the cocoon is gone?

ANSWER: We move the reactor block as one piece to the 200 Area burial ground.

QUESTION: During these 75 years, doesn't release occur because of cocooning?

ANSWER: The contaminants isolated in the reactor blocks wouldn't move into the soil over that period. The cocoons are evaluated each year to ensure their integrity.

QUESTION: What protects it from the bottom?

ANSWER: The cocooning process prevents moisture from entering the area around the reactor block, thus preventing a downward migration. There is the potential for atmospheric releases.

QUESTION: Everything inside that cocoon is dry?

ANSWER: Yes. The EIS says it's good for 75 years.

QUESTION: Regarding the comparisons you're making, to what are your analytical results being compared?

ANSWER: Release rates for 1,000 years predicted by the SAC Model and other EISs.

QUESTION: What about static assessments? Is there any analysis on that? Can the model predict how something got to wells so far from the source?

ANSWER: Just for release, there aren't measured releases from waste types. We are doing the history matching by element.

QUESTION: So you will get to the kind of matching I described?

ANSWER: Yes.

Status of the Integration Project's Semi-Annual Report (Steve Sautter)

The Semi-Annual Report has been submitted to Keith Klein and he is to sign it today. There is a trip to Washington, D.C., planned for next week to meet with Senator Wyden's staff to present the report. Once we have final approval from U.S. Department of Energy-Headquarters (DOE-HQ), it'll be ready for distribution.

Update on Drilling of RCRA Monitoring Wells in the Tank Farms (Michael Graham)

We finished five wells by the end of fiscal year 2000 near the tank farms. Another five are due at the end of this month and are on track. Another five are due at the end of April.

We made a commitment to look at cost efficiencies. We agreed on technical justification for 20 wells in the next few years.

Review of Comprehensive Groundwater Monitoring Evaluation Being Conducted By Ecology (Mike Thompson/Michael Graham)

Ecology is beginning an assessment on our groundwater monitoring at Hanford. This comprehensive review will determine the adequacy of our RCRA drilling activities and ensure that the Integration Project

is making good use of the data. During a formal briefing to be held today, the inspectors will provide specific details on what they are going to look at over the next several days. Then, later this week, field teams will be going out to some of the wells around the T-TX tank farms to observe the field process. The samples will come back in a week to ten days. Then, we'll have the first set of assessments and a close-out. The findings and recommendations on how we are doing will come sometime before the end of December.

COMMENT: This is the first time we have done this at Hanford. It's more of a compliance inspection. There is a lot of paperwork to go through. They will be taking duplicate samples and doing some analysis. I don't foresee this happening on a regular basis unless we find something.

QUESTION: Is this part of the tank farms?

ANSWER: It is the RCRA wells.

QUESTION: Is there a network of wells that will ultimately be used to monitor plume growth?

ANSWER: We already have that and we are trying to modify it. We have a site-wide network.

QUESTION: Is that something that is being studied as to whether it's adequate?

ANSWER: There is a report for what those networks are all about. The DOE and regulators spend time doing groundwater monitoring.

Status of Work on Tritium Investigation at the 618-11 Burial Ground (Mike Thompson)

On the tritium contamination in the groundwater near the 618-11 Burial Ground, we are completing the sampling plans for the next phase of investigation. That will involve putting in some new groundwater monitoring wells.

QUESTION: Have you designated where those wells will go?

ANSWER: No. That will be field dependent. Other than the one well at the northeast corner of the burial ground, the closest well is a quarter mile away. I've asked the contractor to define the contour of the drinking water standard and provide data on how deep it is. From that we can develop a risk assessment.

QUESTION: What's known about the source at this point?

ANSWER: There is still speculation as to what it might be. We don't see other fusion products that could be mobile. We are getting information on past operations of the burial ground. It appears as though water may have been used to flush out waste disposal. I wouldn't be surprised to see mobile contaminants in the groundwater.

QUESTION: Do you know how many new wells you are going to put in?

ANSWER: No.

QUESTION: Do you know the budget for that?

ANSWER: It will be another stretch item in FY01.

QUESTION: Has this been monitored long enough to detect changes in the contamination levels?

ANSWER: No.

QUESTION: How long would a well have to be monitored to know if the concentration is changing?

ANSWER: It would take several years, and it depends on the nature of the source of the contamination.

We have one well, and less than five data points for that well. We don't know the source. It's difficult to come up with rules of thumb.

QUESTION: Then, the basic concern is the same – identifying what it is that is producing that tritium.

ANSWER: We are in the process of trying to find efficiencies to fund it and to define the scope. We are trying to get closure on the next phase of sampling in order to talk definitively about it.

It's not on the agenda, but I wanted to comment a little on the drilling in the BX Tank farm. They are now below 100 feet. It's part of an on-going program to collect data on tank leaks. We are getting some good work from Fred Mann's group.

UPCOMING EVENTS (Michael Graham)

Some upcoming events I want to point out are the Hanford Advisory Board meetings in Portland, Oregon, this week. There will be a lot of discussions about the vision of Hanford and contracting strategies. Our Project Update is coming up in Washington, D.C., on December 12, 2000. The next Open Meeting will be December 18, 2000. We have a series of cancellations of these meetings due to the holidays. We've scheduled a meeting on January 8, 2001.

The proposed IPEP meeting is now changed to April.

COMMENT (Dib Goswami [Ecology]): Some people from the Integration Project will be coming to Ecology's office in December. They will be providing us with more information on SAC. That is scheduled for December 28, 2000, at 9:00 a.m. We are also having a workshop on risk and impact assessments. It will be held January 17, 2001. It will probably last about half a day.

NOTES:

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

If you have questions or comments, please contact Steve Sautter (509-372-9097) or Alison Kent (509-372-9192).

ATTACHMENTS:

1) GW/VZ Integration Project Two Month Look Ahead Calendar

ATTENDEES:

Marty Bensky – Tri-City Caucus

Bob Bryce – PNNL

Joe Caggiano – Ecology

Don Clarke – DEC

Dib Goswami – Ecology

Michael Graham – BHI

Kathy Huss – SAIC (by phone)

Alison Kent – BHI

Gary McNair – PNNL

Fred Mann – CHI

Steve Sautter – BHI

Sue Safford – Oregon Office of Energy (by phone)

Mike Thompson – DOE-RL

Rob Yasek – ORP

GW/VZ INTEGRATION PROJECT
DECEMBER 4, 2000 – MARCH 23, 2001
THREE MONTH LOOK AHEAD CALENDAR

December 4	GW/VZ Open Project Team Meeting BHI Assembly Room – 1-3 p.m. (Contact: Steve Sautter)
December 6	HAB-PI
December 7-8	HAB Meeting (Clackamas, OR)
December 11	Richland Town Hall Meeting for Hanford 2012 Plan (6:30 p.m., Richland, WA)
December 12	Integration Project Update, Washington, D.C.
December 18	GW/VZ Open Project Team Meeting BHI Assembly Room – 1-3 p.m. (Contact: Steve Sautter)
January 1	**CANCELLED DUE TO HOLIDAY GW/VZ Project Open Meeting BHI Assembly Room – 1-3 p.m. (Contact: Steve Sautter)
January 8	GW/VZ Open Project Team Meeting BHI Assembly Room – 1-3 p.m. (Contact: Steve Sautter)
January 15	**CANCELLED DUE TO HOLIDAY GW/VZ Project Open Meeting BHI Assembly Room – 1-3 p.m. (Contact: Steve Sautter)
February 1-2	HAB
February 5	GW/VZ Project Open Meeting BHI Assembly Room – 1-3 p.m. (Contact: Steve Sautter)
February 19	**CANCELLED DUE TO PRESIDENTS DAY HOLIDAY GW/VZ Project Open Meeting BHI Assembly Room – 1-3 p.m. (Contact: Steve Sautter)
March 5	GW/VZ Project Open Meeting BHI Assembly Room – 1-3 p.m. (Contact: Steve Sautter)
March 19	GW/VZ Project Open Meeting BHI Assembly Room – 1-3 p.m. (Contact: Steve Sautter)
March 21-23	Proposed IPEP Meeting (Date Will Change)