

MEETING NOTES**Waste Management Area A-AX HFFACO Appendix I Performance Assessment
Workshop with Ecology on Engineered System Data Assembly****MEETING DATE:** March 22, 2017**LOCATION:** Ecology Conference Room 3, Richland, WA**ATTENDEES:**

Jim Alzheimer (Ecology)	Jim Field (WRPS)	Sunil Mehta (INTERA)
Marcel Bergeron (WRPS)	Dib Goswami (Ecology)	Beth Rochette (Ecology)
Jan Bovier (DOE-ORP)	Bob Hiergesell (WRPS)	Cindy Tabor (WRPS)
Joe Caggiano (Ecology)	Bill McMahon (CHPRC)	Arun Wahi (INTERA)

PURPOSE OF WORKSHOP: The purpose of the workshop was to provide WA Dept. of Ecology with a summary description of the WMA A-AX equipment, including nearby facilities, an overview of recharge estimates at and around WMA A-AX prior to construction, during its operation period and into the post SST closure period and a description of the contaminant release model for the anticipated tank residual waste.

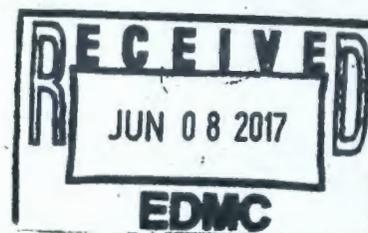
BACKGROUND INFORMATION: WRPS has initiated a project to conduct a Performance Assessment (PA) of the WMA A-AX Tank Farm in FY 2017. The initial tasks in this investigation are to develop the conceptual and groundwater flow models. An accurate description of the physical system of tanks, pipes and ancillary equipment is needed in order to construct models that will perform analyses of releases from the closed tanks. Likewise, detailed knowledge of infiltration/recharge and the mechanisms of how contaminants are expected to be released from the tank residuals are also needed. The assembled data will be documented in two Data Package reports that will be finalized later this FY. The Data Packages will be provided to Ecology for their review and comment.

The information that will be captured in the Data Package was provided in three separate presentations at the Workshop. Mr. Wahi (INTERA) presented an overview of the WMA A-AX features and history. These included single-shell tanks, ancillary equipment, and discharge facilities located in or near WMA A-AX and a description of the post-closure system to be modeled. Mr. McMahon (CHPRC) presented information describing the recharge rates associated with different land covers and how they were distributed in and near WMA A-AX over time. Mr. Mehta (INTERA) made the last presentation describing the post-retrieval tank residuals in WMA A-AX tanks are expected and the mechanisms anticipated to control release of contaminants from the closed tanks.

The PowerPoint slides from his presentation have been reviewed and approved for release. Copies of the slides are attached at the end of the meeting notes.

QUESTIONS AND DISCUSSIONS: After the presentation on recharge rates for WMA A-AX the following questions and discussion followed.

Mr. Caggiano asked about information regarding leaks to the soil from A-105. The response was that leaks to the soil were not covered in the prior workshop and will be documented in the data package under development for WMA A-AX soil inventories.



Mr. Goswami expressed concern about possible historical water ponding events within the WMA A-AX and the impact they might have had on recharge. Mr. Bergeron responded that infiltration events like the one shown in the presentation do not happen often and when they do the increase in subsurface moisture is "dampened", or spread out, within the vadose zone. Mr. Goswami asked if there is any data to characterize what happens. Mr. McMahon responded that relevant data from the Hanford Lysimeter facility exists and that our plan is to examine that data and use it as a source of information for the WMA A-AX operations period.

Ms. Rochette inquired about the 100mm/yr. average recharge rate incorporated in model simulations and asked if that number underestimates long-term infiltration since the area may not re-vegetate to sage brush, as assumed. Mr. Bergeron responded that a "cheatgrass" scenario can be evaluated as a sensitivity case and added that an interim barrier is likely to be emplaced after WMA A-AX is closed until that time when a final closure cap is put in place. Ms. Rochette inquired if we would evaluate a scenario that has an extended operations period without an interim cover being emplaced. Mr. Bergeron responded that we would likely do so.

After the presentation on Source Term releases the following questions and discussions followed:

Mr. Caggiano asked for clarification on whether the source term for WMA A-AX tanks would be based on the models derived from WMA C. Mr. Mehta added that we have to use them, considering the limited data for A-AX farms. Mr. Bergeron added that we expect to examine a range of cases and also try to use the preliminary PA to aid tank retrieval decisions.

Ms. Rochette inquired about what the "6%" was (with reference to slide 7). Mr. Mehta replied that it's the initial pulse of contaminant that releases out in the sample and explained the differences in leaching associated with the different leachants (slide 8). A question was asked as to whether experiments were conducted in open air and what the pH levels were. Mr. Mehta replied that they were conducted in open air and the pH levels were elevated, and mentioned that the pH is what controlled the experiment.

Mr. Yokel inquired as to why distilled water was one of the fluids utilized in the PNNL waste leaching experiment and what it tells us. Mr. Mehta replied that it was used to compare against the $\text{Ca}(\text{OH})_2$ and CaCO_3 leachants.

Ms. Rochette inquired about the molarity of the leachant. It was indicated that the concentration was 0.1 mL/L (as shown on slide 6), which is basically saturated. Mr. Mehta added that although we have that information, the most important factor is the pH, which controls the reactions. The Cantrell (PNNL) document indicates the pH was about 8 for CaCO_3 and 11 for $\text{Ca}(\text{OH})_2$.

Mr. Field commented that the samples tested were post-retrieval samples, that there wasn't very much of the contaminants remaining in the sample to begin with and that as a result not much more could be leached out.

Mr. Yokel inquired about Cr and whether it's hexavalent? The response was yes, but that there are mixed valences based on tank tests. The release model we drawn upon assumes it all hexavalent.

Mr. Alzheimer commented that he hopes the DQO process focuses on A-104 & A-105 and expressed the hope that in-tank samples will be collected for A-105. The response was yes, and it is anticipated that about 50g of sample will be required. Some discussion of the topic has already been initiated with PNNL.

The meeting was concluded at this point.

EXPECTATIONS, AGREEMENTS, AND ACTIONS: Refer to the tables below.

NEXT MEETING: The next meeting is tentatively set for the afternoon of April 26, 2017.

Jan Bovic
DOE Project Manager (print)
Jeffrey J. Lyon
Ecology Project Manager (print)

Jan Bovic
DOE Project Manager (signature)
[Signature]
Ecology Project Manager (signature)

6/6/2017
Date
6/7/2017
Date

DATE	AGREEMENTS
3/22/2017	The preparation of Data Packages describing the material presented in Workshops 1 and 2 is underway. These Data Packages will be made available for Ecology to review following the Workshops. A monthly update of WMA A-AX PA activities is scheduled for April 26, 2017.

ACTIONS			
Action Number	Actionee	Description	Status
2017-3-22-1	Bob Hiergesell	Prepare meeting minutes from Workshop 1 and Workshop 2	New