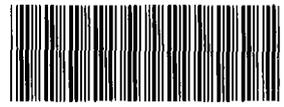


# ER/WM&I DDT



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**Source/Driver:** (Name & Number from ISP, IAG milestone, Mgmt. Action, Corres. Control, etc.)

**Closure #:** (Outgoing Correspondence Control #, if applicable)

**Due Date**

K. Hranac

**Originator Name**

**QA Approval**

J. E. Law

**Contractor Manager(s)**

J. Uhland

**Kaiser-Hill Program Manager(s)**

A.D. Rodgers

**Kaiser-Hill Director**

**Document Subject:**

Transmittal of *Sampling and Analysis Plan for Groundwater Sampling and Well Installation in the Solar Ponds Plume Area*, dated February 10, 1998 JEL-032-98

KH-00003NS1A

February 16, 1998

**Discussion and/or Comments:**

Enclosed please find ten copies of the *Sampling and Analysis Plan for Groundwater Sampling and Well Installation in the Solar Ponds Plume Area*, dated February 10, 1998, as well as responses to CDPHE's comments on the draft plan, dated December 29, 1997. This revised plan incorporates CDPHE's comments on the draft plan. Three copies of the plan are for Kaiser Hill and seven copies are for transmittal to DOE (three copies), the EPA (two copies), and CDPHE (two copies). If you have any questions regarding this document, please contact Kelly Hranac at extension 7400 or John Hopkins at extension 9974.

Attachments:  
As Stated

cc:  
A. C. Crawford  
[REDACTED]  
J. Hopkins  
Administrative Record  
RMRS Records

## Response To Comments

### "Sampling and Analysis Plan for Groundwater Sampling and Well Installation in the Solar Ponds Plume Area," December 29, 1997

*Comment 1.* Data quality is an on-going issue. We are currently discussing the usability of historical data due to inadequate reporting of QA/QC data and should not be generating any new data which will have the same problems. The data generated by this SAP will be used not only to guide the Solar Ponds Plume remediation, but also to help establish background values for uranium in groundwater.

*Response 1.* The laboratory QC data associated with some historical alpha spectroscopy data (for analysis of uranium isotopes) has sometimes failed to meet the frequency agreed upon among RFETS, CDPHE, and EPA. RFETS has established new laboratory contracts in the last year and these laboratories are being monitored to ensure that appropriate laboratory QC is conducted and provided to RFETS. Review of the recent laboratory packages submitted under the new contracts indicates that the laboratories are conducting the appropriate laboratory QC and providing the data to RFETS. For this reason, RFETS expects the alpha spectroscopy data to be collected under this SAP will meet all QC requirements previously agreed to. This text was added to the second paragraph of Section 4.2 of the SAP.

*Comment 2.* It is unclear from this document which sampling method (low-flow or bailed) will be used. The issue of using filtered or unfiltered samples has never been finally resolved because RFETS has not provided comparison data to prove a filtered sample is more representative of uranium in groundwater. If filtered samples are to be used for this project, a few unfiltered samples should also be collected for comparison. The resolution of this issue should be described in the SAP and associated with a DQO.

*Response 2.* The samples will be collected by bailing, as none of the wells within the SPP are equipped with low-flow samplers; this information was added to Section 2.3. RFETS feels that the uranium analyses should be conducted on filtered samples. Filtered groundwater samples will contain the dissolved and colloidal uranium, which are the most mobile forms. The results of analyses of the filtered groundwater samples will meet the DQOs of this SAP which focus on evaluating the extent and activity of uranium isotopes in the SPP and estimating the fate and transport of uranium in the hydrologic system. To address the CDPHE concerns about analysis of uranium isotopes from filtered samples, the work described below will be conducted as part of this SAP.

The results of the dissolved uranium analyses from the initial sampling event will be reviewed and compared to the historic dissolved and total uranium data available for these wells. If a large difference between the dissolved and total uranium activities is observed, both filtered and unfiltered samples may be collected from the six RFCA wells in the SPP during the April (high flow) sampling event." This information has been added to Section 2.3.1, which describes the uranium isotope analyses proposed for this SAP.

*Comment 3.* The conceptual model in Section 1.3 lacks sufficient detail. The ERM document is not generally available and so a reference to it is inadequate. The reference in the last paragraph of Section 1.3.1 (page 6) should be EG&G, 1995b.

**Response 3.** Section 1.3 has been changed to add more detail. This includes sections describing the variability in the bedrock of the vicinity of the SPP and potential contaminant migration pathways, as well as a figure showing these features. The section now refers to the "OU4 solar Evaporation Ponds Interim Measure/Interim Remedial Action Environmental Assessment Decision Document," U.S. Department of Energy, RFETS, February 1995. The reference cited has been corrected.

**Comment 4.** It is understood that the currently proposed method (ICP/MS) to determine uranium isotopic ratios is different than the method suggested by the Actinide Migration Study (TIMS). Neither method is discussed or justified in this SAP. The SAP should be amended to provide full documentation of the method and why it meets the DQOs of this plan. This plan should also discuss how results derived by this method will be compared to existing alpha spectrometry results.

**Response 4.** RMRS discussed the planned sampling and analysis program outlined in this revised SAP with the Actinide Migration Panel. More detailed discussions were later held with Dr. David Janecky. Dr. Janecky agrees that the ICP/MS analytical method is the most appropriate for confirming the background uranium isotopic ratios and achieving the level of accuracy, quality assurance, and laboratory quality control necessary to meet the DQOs of this project. The ICP/MS method is EPA Method 6020; however, a preconcentration step is added to allow analysis of low concentration samples. A full discussion of why ICP/MS was selected, how the results will meet the DQOs of this SAP, and how the results will be compared to the alpha spectroscopy data has been added to the revised SAP (See Sections 2.2.2 and 2.3.1).

**Comment 5.** At the end of the second paragraph of Section 1.1 (page 4), the phrase "RFCA groundwater standards" should be changed to "RFCA groundwater action levels."

**Response 5.** The error noted in Section 1.1, page 4, has been corrected.

**Comment 6.** A well in the Walnut Creek drainage upstream of the Solar Ponds Plume should be added to help account for the influence of the plume. This well might be substituted for one of the background wells.

**Response 6.** Background well B200789 (screened in alluvium) was deleted from the sampling program and replaced by P114389, a RFCA well screened in the alluvium of the North Walnut Creek drainage upstream of the Solar Ponds Plume. This well will provide information as to the water quality entering the SPP from upgradient.