MEMORANDUM FOR THE RECORD

Date November 23, 2005

SUBJECT: SAG Implementation Guidance for Interpretation of QA Split Program

1. This MFR is prepared to provide clarification to the Sampling and Analysis Guide for the St. Louis Sites, September 2000 (SAG) concerning the collection of Quality Assurance (QA) Splits.

2. The pertinent section of the SAG is Section 3.2 Data Quality Objectives. The requirement to collect QA Splits is set forth in Section 3.2.2.1 Level of Quality Control Effort. In particular, the SAG provides the following direction:

> Field QA Split samples will be collected as co-located or homogenized replicates of field QA samples and distributed to the government's identified QA laboratory for analysis. Split samples will be implemented by USACE for detection of problems with field sampling, documentation, packaging, or shipping. They also provide an independent referee laboratory analysis, allowing the project to check the primary analytical result sensitivity, accuracy, and precision. *With the exception of screening samples, QA splits should be collected and analyzed at a frequency of approximately one every twenty samples (5 percent), or a minimum of one split sample per matrix sampled.*

(emphasis added).

3. As stated in the SAG, QA split samples are not collected and analyzed for screening samples. Whether a sample is a screening or definitive sample is determined by the intended use of the sample, not the detection limit of the sample. The main difference between the two types of samples is that definitive samples have a high statistical certitude against type-2 errors (false negatives). For FUSRAP response actions conducted at the St. Louis Sites, screening samples, together with sodium iodide walkovers, are frequently used to determine if a remedial action will occur and to design for that action. The high certitude against type-2 errors is not needed for this initial determination or for the development of a remedial design. Before an area is determined to be clean, however, such that remedial action has either been successful or is not necessary, definitive samples are required to support the MARSSIM Final Status Survey (FSS). (Chemical samples are a percentage of the MARSSIM grid). Even if screening samples determine an area to be clean, the area will not be released until a MARSSIM FSS has been performed. The strength of the MARSSIM FSS approach is that the null hypothesis presumes the area to be contaminated until it is proven that residual contamination is less than the remediation criteria. Samples drawn for efficiency of execution are not definitive unless used for closeout. MARSSIM FSS is the only closeout procedure used for FUSRAP response actions at the St. Louis Sites. QA splits are taken for all three MARSSIM classes. Additional examples of definitive samples include samples collected to

demonstrate compliance with NPDES requirements or 10 CFR Part 20 requirements, to demonstrate a changing condition (such as a monitoring well), or to document a release.

4. For purposes of conducting FUSRAP response activities at the St. Louis Sites, samples collected for design are deemed to be screening samples. Design samples may also be called Preliminary Design Investigation (PDI) samples, mini-characterization samples, or informational samples. Although the detection limit of some design samples is quite low, the intended use of the samples determines whether the samples are screening or definitive. Because design samples are deemed to be screening samples, QA splits are not required in accordance with the SAG.

5. This determination is supported by practical implementation of response activities at the St. Louis Sites. In the case that PDI or other design data result in a gross cut design that does not remove all contamination, guided excavation or MARSSIM FSS criteria will identify residual contamination and result in additional remedial action. This is a build in redundancy that ensures an area has achieved remediation criteria before it is released. Furthermore, as set forth in the SAG at Section 3.3.1 General Information and Definitions, *USACE QA Split Samples*, the primary purpose of QA splits is "to provide an independent assessment of contractor and subcontractor laboratory performance." QA splits are not used to develop remedial designs or in any other aspect of conducting a response action. Additional sampling regimes are identified in the SAG to determine data quality and provide Quality Control for both water and soil.

6. The POC for this determination is the FUSRAP project chemist, Mr. Ron Frerker, who in accordance with USACE policy is responsible for Data Quality Management.

7. The determination set forth in this MFR is immediately effective and should be followed for all future sampling efforts. To the extent QA split samples have been collected and archived for samples determined to be screening samples, they may be disposed. This memorandum should be included in the project file and the clarification set forth should be incorporated in any future revisions to the SAG.

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AR-108