



614 Magnolia Avenue
Ocean Springs, Mississippi 39564
Phone 228 818 9626
Fax 228.818.9631

MEMORANDUM

To: Gary Miller
U.S. Environmental Protection Agency

Date: March 23, 2016

From: Jennifer Sampson, Integral Consulting Inc.
David Keith, Anchor QEA, LLC

Cc: Dave Moreira, McGinnes Industrial Maintenance Corporation
Philip Slowiak, International Paper Company

Re: Addendum 3 to the Sediment Sampling and Analysis Plan (SAP) for additional sediment sampling within USEPA's Preliminary Site Perimeter, San Jacinto River Waste Pits Superfund Site

INTRODUCTION

This memorandum is an addendum to the Sampling and Analysis Plan (SAP) for the sediment study at the San Jacinto River Waste Pits (SJRWP) Superfund site (Site) (Integral and Anchor QEA 2010). It is submitted on behalf of International Paper Company (IPC) and McGinnes Industrial Maintenance Corporation (MIMC) (collectively referred to as Respondents), pursuant to the requirements of Unilateral Administrative Order (UAO), Docket No. 06-03-10, which was issued on November 20, 2009 (USEPA 2009). The UAO requires Respondents to conduct a Remedial Investigation and Feasibility Study (RI/FS) for the Site.

This addendum to the Sediment SAP (Integral and Anchor QEA 2010) was prepared following identification of data gaps by the U.S. Environmental Protection Agency (USEPA) that were presented in an e-mail to David Keith on August 6, 2015 (USEPA 2015). Respondents and USEPA engaged in additional discussions of the data gaps for sediment chemistry on September 2 and September 17, 2015. USEPA's August 6 communication and results of subsequent meetings form the basis of this SAP Addendum, and are synthesized below. USEPA's comments on the draft of this addendum have been incorporated, as described in Attachment 3.

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This addendum provides for all quality assurance and quality control (QA/QC) procedures that will be applied during the sediment sampling, sample analysis, data validation, information management, and reporting. Sampling described in this addendum will be conducted consistent with the approved Sediment SAP (Integral and Anchor QEA 2010) and related appendices. Those aspects unique to the sediment sampling to be conducted in spring 2016 are addressed by this document, and include:

- An updated conceptual site model (CSM)
- Data Quality Objectives (DQOs) for this effort.

Each of these is presented below.

CONCEPTUAL SITE MODEL

Characterization of the primary physical and chemical processes that control the distribution and concentrations of chemicals of concern (COCs) at a site is gained through the iterative development and refinement of a CSM using site-specific information. CSMs are a key component of the RI/FS process because they illustrate the links between site investigation data and the assessment of risk (ASTM 1995), and establish the context for evaluating potential site-associated sources and risk, and making distinctions from those sources and risks not associated with the Site.

Established CSM

The detailed discussion of the CSM in the Remedial Investigation Report (RI Report; Integral and Anchor QEA 2013) addresses the physical and chemical elements of the CSM: the sources, releases, and transport mechanisms of COCs, and the complete and significant exposure pathways. This SAP Addendum incorporates that discussion by reference. The discussion synthesizes information resulting from the RI and risk assessment reports, with emphasis placed on the indicator chemical group, dioxins and furans. Figure 1 is the general CSM pathway diagram that has been derived for the northern impoundments and aquatic environment on the basis of the initial evaluation of information in the RI/FS Work Plan (Anchor QEA and Integral 2010) and refinements resulting from the remedial investigation. The CSM presented in the RI Report has been modified to show the importance of propeller wash as a mechanism for resuspension and transport of contaminants, as further discussed below.

A summary of points from the discussion of the CSM in the RI Report and relevant to the sediment sampling is included here. These must be considered in the development of DQOs for additional sediment sampling in 2016; refinement of the CSM is necessary to aid interpretation of the data generated.

- The area north of I-10 and surrounding aquatic environment is distinct from the impoundment south of I-10 with respect to the potential for chemical releases and exposures.
 - Both the northern impoundments and the impoundment south of I-10 are believed to have received pulp mill wastes in the mid-1960s. Based on review of dredging permits approved by the U.S. Army Corps of Engineers, dredging by third parties occurred in the vicinity of the perimeter berm at the northwest corner of the northern impoundments. As a result of this and other physical processes at the site, wastes deposited in the impoundments north of I-10 may be a source of dioxins and furans to the aquatic environment.
 - Historical information and the source evaluation support the conclusion that the wastes from the northern impoundments are the primary source of dioxins and furans to sediments that are affected by the wastes, but not all dioxins and furans in sediments originate in the wastes from the impoundments north of I-10.
 - The impact to sediment from the impoundments north of I-10 is both localized and trackable based on the characteristic mix of dioxin and furan congeners in the waste.
- There is limited potential for mobility of dioxins and furans in the aquatic environment.
 - Dioxins and furans are characterized by extremely low vapor pressures, high octanol-water and organic carbon partitioning coefficients (K_{ow} and K_{oc} , respectively), and extremely low water solubilities. These factors indicate a strong affinity for sediments, particularly sediments with high organic carbon content.
 - The vast majority of dioxins and furans in the aquatic environment will sorb strongly to particulate matter, including organic matter, and eventually settle to the sediment bed, where they will be subject to sediment transport processes. After they are sorbed to particulate matter or bound in the sediment organic phase, they exhibit little potential for leaching or volatilization.

- Chemicals in the near-surface, physically mixed zone of the sediments may be remobilized from the sediment bed by sediment resuspension and porewater-surface water exchange.
- A specific dioxin and furan mixture, or fingerprint, characteristic of paper mill wastes, exists and can be used to differentiate paper mill waste-related dioxins and furans in abiotic media (sediments and soils) from those attributable to the several other sources in the vicinity of and within USEPA's Preliminary Site Perimeter. Regional atmospheric and point discharges are known sources of dioxins and furans, and urban background can be significant in terms of overall dioxin and furan load.
- Results of the unmixing analysis presented in Section 5.4 of the RI Report confirm that northern impoundment waste-related dioxins and furans occur in surface and subsurface sediments in the area north of I-10. The sediment data set suggests that there was likely some movement of sediment from the northern impoundments that resulted in some amount of transport and subsequent redistribution within the area of USEPA's Preliminary Site Perimeter and adjacent to the impoundments north of I-10. This contributed to the presence of dioxin and furan in that area at concentrations above background.
- RI Report Section 5.6.5 summarizes the results of the fate and transport modeling; a CSM of the processes governing fate and transport is illustrated in RI Report Figure 5-36. These processes include sediment transport.
 - The Chemical Fate and Transport Modeling Study report (Anchor QEA 2012) presents empirically estimated and predicted net sedimentation rates for the area within and surrounding USEPA's Preliminary Site Perimeter.
 - Among the 10 locations for which sedimentation rates were evaluated empirically (using radioisotope cores¹), the empirically estimated net sedimentation rates were higher at the three stations within USEPA's Preliminary Site Perimeter (RI Report Figure 5-40) than in the seven surrounding radioisotope core locations.
 - The majority of the area within USEPA's Preliminary Site Perimeter is net depositional. One small area adjacent to the original 1966 impoundment perimeter is predicted to be net erosional (Figure 4-23 of Anchor QEA 2012).

¹ See Anchor QEA's (2012) Chemical Fate and Transport Modeling Study Report and appendices

- Parts of the area between the impoundments north of I-10 and the upland sand separation area have predicted net sedimentation rates of 1 – 1.5 cm/year.

These observations do not result in any modification to the CSM diagram, but are relevant to the spatial extent and distribution of COCs in sediment that are attributable to the northern impoundments under baseline conditions. Results of the sediment transport model indicate that sediments originating outside of USEPA's Preliminary Site Perimeter are becoming deposited within USEPA's Preliminary Site Perimeter, including in areas near the impoundments north of I-10.

Ongoing Barging Operations

Subsequent to the determination of baseline conditions in 2010, the San Jacinto River Fleet, LLC (SJRF) established a barging operation on and around the upland sand separation area. Respondents' consultants noted during routine fieldwork conducted in 2011 that one of the instruments placed in the river for the sediment transport study was buried in sediment, even though it had been deployed a short time before. This instrument was deployed about 535 meters (1,760 ft) to the north of the impoundments north of I-10 and within 300 meters (1,000 ft) of the upland sand separation area. At the time, it appeared that there had been substantial redistribution of sediment within the area surrounding the impoundments north of I-10, and that this was directly related to the barging operation. Appendix B of the Chemical Fate and Transport Modeling Report (Anchor QEA 2012) describes the discovery that the instrument had been buried in sediment and the relocation of the instrument, including a map of its location.

SJRF has been operating continuously since July 2011. USEPA has not required SJRF to evaluate the effect of the propellers on SJRF's tugboats on the distribution of sediments surrounding the impoundments north of I-10. Respondents are not aware of any data collection efforts to address this issue and describe the resulting movement of dioxin- and furan-contaminated sediments. Therefore, the CSM must recognize that there is a significant potential for the redistribution of sediments that surround the northern impoundments, but there is no information to describe the resulting conditions in the sediments. Figure 1 presents a modified CSM to reflect SJRF propeller wash and resuspension as a factor in the release and transfer of source material to exposure media.

Other barging operations may be underway in the area near the impoundments north of I-10. For example, a company called Southwest Barge Fleet Services Inc. has an office within USEPA's Preliminary Site perimeter, on the peninsula south of I-10. It is not known whether this company or other companies operate barges within USEPA's Preliminary Site Perimeter.

Uncertainty in the CSM

Uncertainty about the effect of SJRF operations affects interpretation of the results of the sediment sampling to be initiated upon approval of this SAP Addendum. Because under baseline conditions there were dioxins and furans present in surface sediments outside of the original perimeter of the northern impoundments but originating from within the wastes, and because SJRF and others' operations may have been redistributing sediments that surround the northern impoundments for more than 4 years, any differences between the 2010 baseline surface sediment chemistry and sediment chemistry in 2016 may be at least partly attributable to the effects of SJRF and others. Under these circumstances, if differences in sediment chemistry between 2010 and 2016 are observed, it may not be possible to differentiate other causes, such as the USEPA's potential scenario of movement of waste-contaminated sediments subsequent to collection of the baseline sediment data set (e.g., during or after the Time Critical Removal Action [TCRA] cap construction), from the effect of SJRF activities.

An additional uncertainty is the result of a data gap in the baseline sediment data set. The baseline sediment sampling design did not include surface sediment samples directly adjacent to the TCRA cap (Figure 2). It is not possible to assess changes in the condition of sediments directly adjacent to the TCRA cap between baseline sampling in 2010 and the present.

Rates of erosion and sediment deposition estimated and predicted by the chemical fate and transport evaluation are also subject to the uncertainties of that portion of the model. Appendix G of Anchor QEA (2012) addresses these uncertainties in detail.

DATA QUALITY OBJECTIVES

This summary of DQOs addresses sediment sampling requested by USEPA in August 2015. During the September 2, 2015 meeting held at USEPA Region 6 offices in Dallas, Texas, the Respondents reviewed the CSM with USEPA, and discussed the effects of SJRF on USEPA's

key study question (the effectiveness of the TCRA cap), and the impact of extensive barge traffic on the CSM. The DQOs for additional surface sediment sampling were prepared to address USEPA's request, while recognizing the relevant uncertainties about the physical CSM. Results of sediment sampling will address:

- Study Element 1. Nature and Extent Evaluation. New sediment data will provide additional descriptive information on the nature and extent of sediment contamination in the vicinity of the TCRA cap.
- Study Element 3. Physical CSM and Fate and Transport Evaluation. New sediment data will provide a line of evidence to address and evaluate potential pathways of contaminant transport from paper mill waste to the environment outside of the TCRA cap. Other lines of evidence include new information on surface water, porewater, and groundwater, discussed in separate documents.

Statement of the Problem

According to USEPA's communication to David Keith on August 6, 2015, and a meeting between Respondents and USEPA on September 2, 2015, the problems to be addressed by additional sediment data are:

- Study Element 1. Nature and Extent Evaluation. Additional information is needed to characterize the baseline condition in sediments directly adjacent to the TCRA cap. This information is needed so that future chemical concentrations in these sediments can be compared to conditions in sediments in 2016.
- Study Element 3. Physical CSM and Fate and Transport Evaluation. Verification that the armored cap is preventing releases of dioxin and furans from the paper mill waste to sediments is necessary to support selection of a final remedy for the waste impoundments north of I-10.

Given the uncertainties in the CSM, the sediment data to be collected under this Sediment SAP Addendum may not definitively resolve the problem related to Study Element 3. Study Element 2 (Exposure Evaluation) and Study Element 4 (Engineering Construction Design) are not addressed by this study.

Goals of the Study

The goals of this study are different for each of the two study elements to be addressed.

- Study Element 1. Nature and Extent Evaluation. The goal of collecting additional

surface sediments to address the nature and extent of contamination is to describe concentrations of dioxins and furans in sediments directly adjacent to the TCRA cap for use in comparisons with future conditions, as needed.

The corollary goal of Study Element 1 is to collect surface sediments from 0 to 6 inches (0 to 15 cm) at 11 locations adjacent to the cap, evenly spaced along the perimeter of the cap (Figure 3).

- Study Element 3. Physical CSM and Fate and Transport Evaluation. The goal of this study is to generate information on sediment quality that can be used as a line of evidence for evaluating the effectiveness of the armored cap in preventing the release of dioxins and furans from the waste in the impoundments into nearby sediment.
 - The corollary goal of Study Element 3 is to reoccupy selected locations of sediment samples collected in 2010 as part of the assessment of baseline conditions (Figure 2). These include:
 - “TCRA sediment” stations. The TCRA sediments were collected along transects from the inside of the original perimeter of the impoundments north of I-10 to the outside. This study will involve sampling sediments at the 15 TCRA sediment locations outside of the original perimeter of the impoundments north of I-10 (Figure 3)
 - Nature and extent stations. Two of the nature and extent stations located closest to the impoundments north of I-10 (SJNE027 and SJNE028) (Figure 3) will be sampled.
 - The goal is to reoccupy and sample surface sediments at these 17 stations near but outside of the perimeter of the impoundments north of I-10 at a depth of 0 to 6 inches (0 to 15 cm).

Sampling goals of the study are summarized in Table 1. This field sample collection matrix is a checklist of samples for use in the field during sampling to ensure completion of the requirements of this SAP Addendum. It is analogous to Table A-3 in Appendix A of the Sediment SAP (Integral and Anchor QEA 2010), and defines the goals of the study during fieldwork.

Information Inputs

DQOs for this sediment sampling effort, including analysis of resulting data, are based on the following information inputs:

- Locations of TCRA sediment samples. The field sampling personnel will use geographic information system (GIS) records of target sample locations (Figure 2) during sampling. These locations are reported in the project database (for the TCRA sediment samples) and in the sediment field sampling report (Integral and Anchor QEA 2011).
- Results of baseline sediment sampling at stations that will be reoccupied (Figure 4). These will be the basis for comparison with the chemistry of sediments collected in 2016.
- Timing of the activity of SJRF during the sampling period. Field personnel will avoid contact with the barging operation, for safety. An update to Addendum 1 to the overall Health and Safety Plan (HASP; Anchor QEA 2009) that was presented in the Sediment SAP for this project is presented in Attachment 1.

Analytical Approach

Analysis of Samples: All sediment samples will be analyzed for the seventeen 2,3,7,8-substituted dioxins and furans, total organic carbon, and grain size distribution. Expected method detection limits and method reporting limits are shown in Table 2. The laboratory provides lower reporting limits than in 2010, which is reflected in Table 2. Updated laboratory standard operating procedures (SOPs) are presented in Attachment 2. Analytical methods, sample containers, preservation requirements, and holding times are presented in Table 3. Table 1 provides a field sample collection matrix, a checklist of samples for use in the field during sampling to ensure completion of the requirements of this SAP Addendum.

Data Analysis: Concentrations of each dioxin and furan congener in surface sediment collected as part of this study will be entered into the project database and validated. For Study Element 1, a map will be prepared to describe results of the sampling. For Study Element 3, statistical comparisons of each congener concentration and of $TEQ_{DF,M}^2$ between the two sampling periods will be performed using data from the re-occupied locations. The pre-TCRA samples and post-TCRA samples collected in 2016 will be compared using a paired difference test. At each re-occupied sampling location, the difference between the 2016 and

² Toxicity equivalent (TEQ) concentration calculated for dioxin and furan congeners using toxicity equivalency factors for mammals

2010 concentrations will be computed. The paired difference test will be used to determine whether differences are statistically significantly greater than zero. The distribution of differences will be evaluated for outliers and for unusually large differences between stations in close proximity to each other. Comparisons of the data to previous sampling may also include comparison on a surface area-weighted average concentration (i.e., SWAC) basis.

Any differences in concentrations of dioxins and furans in the 2016 data set from concentrations in 2010 may be attributable to the activities of SJRF and others, which may have resulted in mixing and redistribution of sediments in the vicinity of the cap (Figure 1).

Schedule

Following approval of this Sediment SAP Addendum, surface sediment sampling will be conducted as soon as possible, and initiated no later than the week of April 25, 2016. If possible, sediment sampling will be coordinated with surface water sampling, currently anticipated for spring 2016.

Sampling within USEPA's Preliminary Site Perimeter will be conducted during periods of inactivity by the SJRF, for safety (Attachment 1). Best efforts will be made to minimize potential influence by the SJRF operations on the schedule and any SJRF activity will be noted during field sampling and whether it affects the schedule.

All analysis will be undertaken in the typical analysis and validation time frame for this project, which requires 2 months following sample retrieval/collection.

PROJECT ORGANIZATION, METHODS, AND QUALITY ASSURANCE PROCEDURES

Sediment sampling and analyses described in this addendum will be conducted in full compliance with the Sediment SAP (Integral and Anchor QEA 2010) and related appendices (including Appendix A, the Field Sampling Plan), in the context of the objectives that are relevant to this task. The 2010 Sediment SAP describes the means to achieve all QA/QC requirements and documentation articulated by USEPA's guidance for preparation of Quality Assurance Project Plans and Field Sampling Plans (USEPA 1998, 2001); these specifications will be applied to the collection, analysis, quality assurance review, data management, validation, and reporting of the information generated as described in this addendum. Sampling personnel will comply with the overall HASP (Anchor QEA 2009), Addendum 1 to

this overarching HASP (Attachment A1 to Appendix A of the Sediment SAP), and the update to HASP Addendum 1 provided in Attachment 1. The update to HASP Addendum 1 provided in Attachment 1 provides for notification of the US Coast Guard Vessel Traffic Services on each day of sediment sampling.

REFERENCES

- Anchor QEA, 2009. Health and Safety Plan San Jacinto River Waste Pits Superfund Site. Prepared for McGinnes Industrial Maintenance Corporation, International Paper Company, and U.S. Environmental Protection Agency, Region 6. Anchor QEA, Ocean Springs, MS.
- Anchor QEA and Integral, 2010. Final Remedial Investigation/Feasibility Study Work Plan, San Jacinto River Waste Pits Superfund Site. Prepared for McGinnes Industrial Maintenance Corporation, International Paper Company, and U.S. Environmental Protection Agency, Region 6. Integral Consulting Inc., Seattle, WA, and Anchor QEA, Ocean Springs, MS.
- Anchor QEA, 2012. Chemical Fate and Transport Modeling Study, San Jacinto River Waste Pits Superfund Site. Prepared for McGinnes Industrial Maintenance Corporation, International Paper Company, and U.S. Environmental Protection Agency, Region 6. Anchor QEA, Ocean Springs, MS. October.
- ASTM, 1995. Standard Guide for Developing Conceptual Site Models for Contaminated Sites. E 168995. American Society for Testing and Materials, West Conshohocken, PA.
- Integral and Anchor QEA, 2010. Sampling and Analysis Plan: Sediment Study San Jacinto River Waste Pits Superfund Site. Prepared for McGinnes Industrial Maintenance Corporation, International Paper Company, and U.S. Environmental Protection Agency, Region 6. Integral Consulting Inc., Seattle, WA, and Anchor QEA, Ocean Springs, MS.
- Integral and Anchor QEA, 2011. Field Sampling Report: 2010 Sediment Study, San Jacinto Waste Pits Superfund Site. Prepared for McGinnes Industrial Maintenance Corporation, International Paper Company, and U.S. Environmental Protection Agency, Region 6. Integral Consulting Inc., Seattle, WA, and Anchor QEA, Ocean Springs, MS.

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- USEPA, 1986. Puget Sound Estuary Program: Recommended Protocols for Measuring Conventional Sediment Variables in Puget Sound. Final Report. Prepared for U.S. EPA, Region 10, Office of Puget Sound, Seattle, WA and the U.S. Army Corps of Engineers, Seattle District, Seattle, WA. Tetra Tech, Inc., Bellevue, WA.
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- USEPA, 2009. Unilateral Administrative Order for Remedial Investigation/Feasibility Study. U.S. EPA Region 6 CERCLA Docket No. 06-03-10. In the matter of: San Jacinto River Waste Pits Superfund Site Pasadena, Texas. International Paper Company, Inc. & McGinnes Industrial Management Corporation, respondents.
- USEPA, 2015. E-mail from G. Miller, Remedial Project Manager, USEPA, to D. Keith, Anchor QEA, LLC, regarding San Jacinto River Waste Pits Sampling, dated August 6, 2015. U.S. Environmental Protection Agency.

ATTACHMENT 3

RESPONSE TO USEPA COMMENTS

Attachment 3. Responses to EPA Comments on Draft Addendum 3 to the Sediment SAP

Comment No.	Section	Page	Line	Comment	Response to Comment— Revision
EPA1				<p>On page 4 and page 5, the SAP includes a discussion of barging operations in the vicinity of the San Jacinto River Waste Pits Superfund Site (Site). The SAP mentions one operator, but not others operating barges in the area. The SAP shall identify other barge operators who are operating in the San Jacinto River near the Site in addition to the one described</p> <p>The SAP also describes the re-distribution of sediment as evidenced by burial of the instrument used for the sediment transport study. The SAP shall include the distance of this buried instrument from the waste pits and from the river bed near the sand separation area</p> <p>Finally, the previous modeling study identified various areas of the Site as being either sediment depositional or erosional areas. The SAP shall also discuss this additional source of sediment re-distribution in the area around the northern impoundments, and include this in the discussion on uncertainty.</p>	<p>Other than the San Jacinto River Fleet, which Respondents have specifically addressed with USEPA since their use of the upland sand separation area began in 2011, Respondents do not have specific knowledge of barge fleet operations that use this area. The text has been revised to mention that Southwest Barge Fleet Service is located on Market St. on the peninsula south of I-10. This company is noted because its offices are within USEPA's Preliminary Site Perimeter, but Respondents do not know where their operations occur and cannot make verified statements about this or other fleet companies' operations.</p> <p>Text has been added to include the requested details</p> <p>Text has been added to the discussion of the conceptual site model, and to the evaluation of uncertainty.</p>
EPA2				<p>Figures 2 and 3: These figures include the sediment sample locations surrounding the outside of the waste pits. These figures shall also include the sediment or soil sample locations under the cap around the perimeter that are nearest to the inside edge of the cap</p>	<p>Figures 2 and 3 are intended to convey the locations to be sampled. To avoid confusion during sampling, the requested information has been added to Figure 4, which is presented to illustrate sediment chemistry as it was characterized in 2010.</p>
EPA3				<p>Sediment variability often occurs at a fine spatial scale. The SAP shall include a discussion of why the proposed statistical analysis is adequate and why replicate sampling of fine-scale spatial sediment variability is not appropriate to support any conclusion that observed differences are due to temporal changes rather than spatial and random variability</p>	<p>The effectiveness of the TCRA cap can only be verified using a before-and-after statistical design, where concentrations measured after cap placement (i.e., in 2016) are compared to concentrations measured before cap placement (i.e., in 2010). Such a comparison was not anticipated by the design of the baseline (2010) sampling effort. The design of the statistical analysis for the current study is governed by the spatial extent of baseline sampling, and the number of samples collected in 2010</p> <p>The locations to be resampled to address the goals of the study for Study Element 3 are the locations that are closest to the edge of the cap that were sampled in 2010</p> <p>Sampling at other locations around the pit, at any spatial resolution, will not allow a before-and-after statistical assessment of current conditions relative to the past conditions, and will not inform the question of whether there have potentially been releases from the TCRA cap. The additional baseline samples that will be collected in fulfillment of Study Element 1 may, however, be useful for any future assessment of potential releases from the cap.</p>
EPA4				<p>Under the paragraph "Analytical Approach", a statement is made that the laboratory offers higher resolution analysis. The SAP shall clarify if this refers to chromatographic separation or something else</p>	<p>The phrase "higher resolution" has been changed to "lower reporting limits"</p>

Comment No.	Section	Page	Line	Comment	Response to Comment—Revision
EPA5				The SAP does not indicate any standard analytical methods. The SAP shall identify the analytical methods to be used, which shall be consistent with previous analytical methods for sediment.	Analytical methods, consistent with previous SAPs have been added to Table 3
EPA6				<p>The text and tables in the document indicate that grain size will be analyzed, but do not give the specific method.</p> <p>The attachments to SAP Addendum 3 include ALS Standard Operating Procedure for Particle Size Determination. The SOP includes 2 procedures based on ASTM D-422 Modified and 2 procedures based on Puget Sound Estuary Program procedures. The ASTM D-422 Expanded Version shall be used, which will provide the distribution of silt and clay size particles. Further, the lab shall be required to report water content or percent moisture for each sample.</p>	<p>The Puget Sound Estuary Program method was used for previous sampling events and, for consistency, will also be used for this event. Details have been added to the table and references.</p> <p>The distribution of silt and clay size particles and percent moisture will be reported, as for previous sampling events.</p>
EPA7				<p>The U S Environmental Protection Agency (EPA) has completed its review and approves the above referenced document dated February 29,2016, with the following modifications:</p> <ol style="list-style-type: none"> 1 Section Uncertainty in the CSM, page 6: Revise text as follows " and because SJRF operations have been redistributing sediments that surround the northern impoundment " to " and because SJRF and others operations may have been redistributing sediments that surround the northern impoundment " 2. Section Uncertainty in the CSM, page 6 Revise text as follows " sediment chemistry in 2016 will always be at least partly attributable to the effects of SJRF" to " sediment chemistry in 2016 will always may be at least partly attributable to the effects of SJRF and others" 3. Section Uncertainty in the CSM, page 6 Revise text as follows " it will may not be possible to differentiate other causes " 4 Section Statement of the Problem, page 7 Revise text as follows " sediment data to be collected under this Sediment SAP Addendum will may not definitively resolve the problem " 5 Section Analytical Approach, page 10 Revise text as follows " concentrations in 2010 may be attributable to the activities of SJRF, which likely have resulted in mixing " to " concentrations in 2010 may be attributable to the activities of SJRF and others, which likely may have resulted in mixing " <p>As we discussed, the field work for sediment sample collection will begin no later than the week of April 25, 2016. We will follow-up this email with a letter. Please let me know if you have any questions on this.</p>	The changes have been made as required for approval in an email from Gary Miller of USEPA to David Keith on March 16, 2016.