

Appendix C. RI/FS Work Plan Comments Relevant to the Fish Tissue Quality Assurance Project Plan

Comment Source	TCAI Ref#	EPA Ref #	Document	Work Plan Comment Text	Work Plan Comment Response	Fish Tissue QAPP Response
			Page Number ^a			
USEPA (2007a)	2.4	1	1-1	- Develop Sampling and Analyses Plans (with associated standard operating procedures for collection and analyses of samples)	Sampling and analysis plans will be prepared separate from the RI/FS work plan. Study designs will be closely coordinated with EPA, technical experts, and participating parties.	The fish tissue sampling design proposed in this QAPP has been developed in close coordination with EPA, and was discussed with EPA and the Participating Parties at the March 2008 workshop in Seattle.
USEPA (2007a)	6	1	1-1.1	Permits - The Archaeological Resources Protection Act (16 U.S. C 700) requires a permit be obtained for any activity with potential to impact or disturb an archaeological site. These permits must be obtained from the appropriate tribe or land management agency. Also, consultation with the U.S. Fish and Wildlife Service (FWS) under section 7 of Endangered Species Act (ESA) is required for onsite actions associated with CERCLA activities. As per section 7(a)(1) of the ESA, all federal agencies have an obligation to use their authorities to recover or provide for the conservation of endangered and threatened species in addition to the requirements to "not jeopardize the continued existence of" the species. These requirements are consistent with EPA Region X activities previously conducted at the Upper Columbia River site and other sites throughout the northwest. In addition, a scientific collection and research permit will be required from the National Park Service (NPS) for any sampling events conducted within the boundaries of the National Recreation Area.	TCAI will obtain all required permits prior to any sampling.	Specimen collection permits will be obtained prior to sampling from the Washington Department of Fish and Wildlife. Access permits will be obtained in consultation with the NPS and other appropriate authorities.
USEPA (2007a)	8.1	1	1-1	Sturgeon - The report suggests that Upper Columbia White Sturgeon Contaminants Working Group operates under the auspices of the Upper Columbia River White Sturgeon Recovery Initiative (UCRWSRI). The UCRWSRI does have a sturgeon contaminants subcommittee and as of this date have not had a discussion on whether or not this newly-formed working group will perform the same role as the contaminants subcommittee. It may be inappropriate to "propose to use the existing infrastructure of the UCRWSRI to develop a list of studies....." since the members of the UCRWSRI have not discussed this approach. While the input of the Upper Columbia White Sturgeon Contaminants Working Group may be a valuable tool, the ultimate decision on what sturgeon investigations are necessary for the RI/FS will remain with EPA with input from TCAI and the participating parties.	The text has been modified to reflect that knowledge and information developed and maintained by the UCRWSRI will be considered and thoroughly evaluated in developing potential studies regarding white sturgeon.	Assessment of sturgeon is not a goal of the current 2009 fish tissue investigation. Sturgeon will be evaluated in other study plans developed as part of the UCR RI/FS.
USEPA (2007a)	9.1	188	1-1	Based on Figure 7.2, numerous SAPs and investigations are potentially proposed for 2007. The sequential rationale and connectivity to the CSM of these investigations needs to be described in greater detail. Studies planned for 2007 should be supported by previous work, should support the CSM, and must be a priority for immediate attention. Prior to initiation of sampling there is a need for consensus on components to the RI portion of the Work Plan. This includes:	Problem formulation elements throughout the RI/FS work plan, more specifically the CSMs in Section 6, have been revised. Data gaps, study rationale, and study sequencing are discussed in Sections 7 and 8. We plan to limit the amount of detail on study design in the RI/FS work plan to allow for early input from EPA, technical experts, and participating parties prior to SAP development.	The Fish Tissue Investigation proposed in this QAPP has developed in close coordination with EPA. The rationale for the proposed tissue investigation, which includes problem formulation, CSMs, data gaps identification and DQOs based on the results of previous investigations, is provided in the main body of the QAPP.

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			Page Number ^a				
USEPA (2007a)	9.2	188	1-1		- Problem Formulation, CSM(s), and Data gaps	Elements of problem formulation are included in the revised RI/FS work plan. These elements are highlighted in the Introduction. CSMs have been revised in response to the discussions at the April 2007 Workshop. The data gaps analysis is discussed in greater detail in Sections 7 and 8.	The Fish Tissue Investigation proposed in this QAPP has developed in close coordination with EPA. The rationale for the proposed tissue investigation, which includes problem formulation, CSMs, data gaps identification and DQOs based on the results of previous investigations, is provided in the main body of the QAPP.
USEPA (2007a)	9.3	188	1-1		- Assessment endpoints and data quality objectives (DQOs)	Assessment endpoints will be addressed in the BERA work plan and DQOs will be included in the SAPs. Early discussion of proposed study rationale, DQOs, study design, and target analytes will be discussed with EPA prior to submitting draft SAPs.	The Fish Tissue Investigation proposed in this QAPP has developed in close coordination with EPA. The rationale for the proposed tissue investigation, which includes problem formulation, CSMs, data gaps identification and DQOs based on the results of previous investigations, is provided in the main body of the QAPP.
USEPA (2007a)	9.4	188	1-1		- Prioritization of investigations.	See response to Problem Formulation, CSMs, and Data gaps, above. The rationale for sequencing investigations is provided in revisions to Sections 7 and 8.	The Fish Tissue Investigation proposed in this QAPP has developed in close coordination with EPA. The rationale for the proposed tissue investigation, which includes problem formulation, CSMs, data gaps identification and DQOs based on the results of previous investigations, is provided in the main body of the QAPP.
USEPA (2007a)	10.1	188	1-1		Cultural resource issues -For any testing activity to occur on an archaeological site, the land manager must review the plan, consult with the Tribes about any potential affect of the proposed activity, and issue a permit prior to the initiation of the project. This requirement is relevant to some invasive investigation activities and remediation activities that may be proposed as part of the RI/FS. The land management agencies and the tribal governments must issue permits under the Archaeological Resources Protection Act (16 U.S. C 700) for any activity that may disturb an archaeological site.	TCAI will make sure that appropriate communication has occurred and permits are obtained prior to any sampling effort. TCAI is currently coordinating with DOI to ensure effective communication and coordination for future sampling.	A cultural resource plan for this investigation is provided in Appendix B, Attachment 4.
USEPA (2007a)	10.2	188	1-1		EPA will coordinate the preparation of this plan with the NPS, the Bureau of Reclamation (BOR), the Confederated Tribes of the Colville Reservation (CTCR) and the Spokane Tribe of Indians (STI). For those areas under State jurisdiction, EPA must follow requirements of the Washington State Laws Chapter 27.53 RCW Chapter 25-48 WAC; "Archaeological Sites and Resources" and Chapter 27.44 RCW Indian Graves and Records. The Cultural Resource Coordination Plan will be completed prior to initiation of field activities in 2007. The requirements of the plan will likely require coordination with the Sect. 106 consulting parties, the award of contracts or interagency agreements, and field staff availability. Consulting parties will need additional lead time to do these actions, thus field sampling for sediments or other ground disturbing activity will not likely be possible before late summer 2007 at the earliest.	A draft Cultural Resources Coordination Plan has been submitted to EPA and participating parties for review and comment. TCAI is fully aware that prior to conducting any intrusive sampling programs (e.g., sediment sampling), it will be necessary to obtain the appropriate permits and clearance on the proposed sampling activities. TCAI understands that under the Five-Party Agreement, a long-standing system (i.e., review and approval process) has been established and as such, is exploring potential efficiencies with DOI and EPA on this matter.	A cultural resource plan for this investigation is provided in Appendix B, Attachment 4.

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			Page Number ^a			
USEPA (2007a)	20	272	1-1	Mercury - The fate and transport of Hg needs greater emphasis. This is especially true of the lower reservoir. A sub-CSM needs to be emphasized, with tasks clearly laid out to understand conditions and mechanisms of transport and potential biomagnifications. Further, sediment flux release from metals enriched sediments/weathered slag along the thalweg of the mid and lower reservoir is critical and should have an investigation plan defined.	Development of a mercury CSM is dependent on the outcome of some of the upcoming sampling programs (e.g., surface water), which will help to determine the environmental media (compartments) of greatest relevance to mercury cycling. Mercury is subject to fate and transport processes (e.g., methylation, biomagnifications) that do not affect some of the other metals or metalloids. RI/FS work plan language has been modified to better describe the studies that may be conducted related to mercury bioavailability and food web cycling.	The proposed fish tissue investigation analytical suite includes mercury. Co-located tissue, sediment and surface water samples to address bioavailability and food web modeling will be further addressed in the BERA and may be the focus of additional Site sampling investigations.
USEPA (2007a)	36	1	1-1	Three key areas to de-emphasize in the Work Plan and use more strategically: 1-Minimize the use of top-down approaches. 2-Reduce the reliance on background/reference 3-Reduce the emphasis on multiple stressors in the risk assessment.	These approaches have been deemphasized in the RI/FS work plan and considered, when necessary, to interpret data. Data interpretation in the RI/FS work plan has been scaled back (deferred to later documents) and the stressor section is now focused on chemicals.	Evaluation of background concentrations of COIs in fish tissues is part of the broader data evaluation and risk assessment framework. Consequently, existing data from appropriate background locations or databases will be evaluated and discussed in this QAPP.
USEPA (2007a)	42	1	1-1	Uranium or Thallium has been screened-out based on Ecological concerns as a COC related to fish. These COCs must remain for human health concerns.	Based on discussions at the April 2007 Workshop, uranium or thallium have not been screened out. Human health documents for the UCR are being led by EPA and are not included in the RI/FS work plan.	The proposed fish tissue investigation analytical suite includes uranium and thallium.
USEPA (2007a)	47	1	1-1	The Work Plan should discuss whether or not the RAGs required statistical power for evaluating fish tissue concentrations has been met for COCs. If this is determined to be a data gap, the Work Plan should discuss sampling to fill the data gap.	The human health documents for the UCR are being led by EPA and are not included in the work plan. Sampling and analyses that supports both human health and ecological assessments will be coordinated with EPA to ensure that human health issues are addressed.	DQOs supporting the human health risk assessment (HHRA) are included in the proposed fish tissue investigation. The sampling program is designed to provide tissue data needed for the HHRA.
USEPA (2007a)	209	272	8-1	It is acknowledged herein that all studies have not likely been identified and new data gaps may be recognized. However, this section as a whole needs to include further specificity before substantive comments can be provided on the proposed work. Generally we support the types of studies proposed, including bathymetry, hydrodynamic modeling, acoustic Doppler current profiling, porewater studies, and sediment, beach and sturgeon sampling. However, it is difficult to comment on the adequacy of the studies without further detail on which studies actually will be conducted.	Section 8 has been substantially rewritten to focus on studies and sequencing. The BERA work plan will contain the approach and rationale for most studies pertaining to the ERA. Individual SAPs will provide detailed evaluations of existing data; full DQOs; sampling approach, rationale and methods; and the QAPP. We plan to limit the amount of detail on study design in the RI/FS work plan to allow for early input from EPA, technical experts, and participating parties prior to SAP development.	The Fish Tissue QAPP contains an evaluation of existing data (Appendix B). DQOs for the surface water investigation are provided in Section A.9. The sampling approach, rationale, and methods are provided in Section B.1.
USEPA (2007a)	248	292	8-21	The document states: "Determination of the key prey of key fish receptors in the UCR is expected to be accomplished by reviewing the extensive fish food habits literature for the UCR. Gut content analyses may be conducted on fish collected for tissue residues (see Section 8.2.7.4)." No literature citations are provided to substantiate the existence of data regarding food habits of fish species in the UCR. These citations should be provided. Further, the gut contents of fish collected during the Phase I fish sampling effort were not analyzed to determine food habits. Thus, receptor fish species of concern should be collected and their stomach contents analyzed to quantitatively document their diet.	This comment will be addressed in the BERA work plan.	Examination of the life histories of fish species in the UCR has been conducted as part of the preparation of this QAPP. Target fish species are representative of varying feeding guilds and representative of prey items of piscivorous fish, wildlife and people. Target species are described in Section B1.2.

Appendix C. RI/FS Work Plan Comments Relevant to the Fish Tissue Quality Assurance Project Plan

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			Page Number ^a			
USEPA (2007a)	249.1	292	8-21	“Concern over the potential loss of this highly valued species prompted the formation of the Upper Columbia White Sturgeon Recovery Initiative (UCWSRI 2002b) by Canadian, U.S., and tribal governments, industrial and environmental organizations, stewardship groups, and citizens. Through this initiative, a recovery plan was produced that is intended to serve as master plan for restoration efforts in the U.S. and Canada (UCWSRI 2002). The plan describes objectives, targets, strategies, measures, and a schedule for implementing sturgeon recovery efforts; these efforts are ongoing. To specifically address the issues of contaminants and white sturgeon, the Upper Columbia White Sturgeon Contaminants Working Group has been formed as part of this recovery initiative.	Although the statement above clearly states that the white sturgeon recovery plan is intended by it’s authors and their respective organizations as a “master plan for restoration efforts in the U.S. and Canada,” it is not clear how the “list of studies” on sturgeon will be developed, and who will be involved in this process. Members of the Upper Columbia White Sturgeon Contaminants Working Group, the Tribes, government agencies (WDFW, NOAA, USFWS), and TCAI should be involved in this process.	Assessment of sturgeon is not a goal of the current 2009 fish tissue investigation. Sturgeon will be evaluated in other study plans developed as part of the UCR RI/FS.
USEPA (2007a)	249.3	292	8-21	Although the statement above clearly states that the white sturgeon recovery plan is intended by it’s authors and their respective organizations as a “master plan for restoration efforts in the U.S. and Canada,” it is not clear how the “list of studies” on sturgeon will be developed, and who will be involved in this process. Members of the Upper Columbia White Sturgeon Contaminants Working Group, the Tribes, government agencies (WDFW, NOAA, USFWS), and TCAI should be involved in this process.	Agreed.	Assessment of sturgeon is not a goal of the current 2009 fish tissue investigation. Sturgeon will be evaluated in other study plans developed as part of the UCR RI/FS.
USEPA (2007a)	250	292	8-21	A review of the historical fisheries monitoring data, and discussions with the Spokane Tribe and Colville Tribal Fisheries Biologists indicate that the Lake Roosevelt fish food chain is in flux due to changes in available prey species. Use of literature values may not provide an adequate picture of feeding to allow development of a bioaccumulation model. However, this dynamic situation may also mean that gut content analysis may have to be conducted over a period of several years to get a adequate picture of feeding relationships. The ERA Work Plan should include and assessment of the types of and quality of the data that will be required to assess exposure.	The RI/FS work plan will be clarified to address this comment. It is also expected that additional information will be provided in the BERA work plan.	Analysis of gut contents are not addressed as part of this QAPP. Further analysis of gut contents and bioaccumulation models will be addressed in the BERA work plan and additional study plans may be developed to address this issue.
USEPA (2007a)	275	300	9-3	This figure does not identify any DQOs. EPA and the participating parties will need to be part of the process be developed what data will be needed, how much and of what quality.	DQOs will be identified in the BERA work plan and various SAPs. All DQOs will be developed in conjunction with EPA and the participating parties.	DQO for the fish tissue investigation are described in Section A9.

Appendix C. RI/FS Work Plan Comments Relevant to the Fish Tissue Quality Assurance Project Plan

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			Page Number ^a			
USEPA (2007a)	300	309	9-12	The document states: " The focus will be on populations and not individuals, given that there are no aquatic threatened and endangered species in the UCR except bull trout (<i>Salvelinus confluentus</i>), which is uncommon." Although white sturgeon have not been listed as a federally threatened or endangered species under the U.S. Endangered Species Act, the population of white sturgeon in the Upper Columbia River has been listed as endangered by the Canadian federal and provincial (British Columbia) governments (COSEWIC 2003), and has been recognized as endangered by the Upper Columbia River White Sturgeon Recovery Initiative (UCRWSRI 2002), a coalition of Canadian, U.S., and tribal governments, industrial and environmental organizations, stewardship groups, and citizens. Thus, consistent with EA guidance regarding risk assessment of threatened and endangered species, evaluation of risk to sturgeon should be conducted at the level of individuals, not populations.	The manner in which white sturgeon will be evaluated in the ecological risk assessment will be addressed in the BERA work plan.	Assessment of sturgeon is not a goal of the current 2009 fish tissue investigation. Sturgeon will be evaluated in other study plans developed as part of the UCR RI/FS.
USEPA (2007a)	303	309	9-12	Bull trout should be evaluated within areas that they are expected to exist.	The sampling locations for fish, including bull trout, will be addressed in the BERA work plan and the fish tissue SAP.	Specific information on bull trout habitat has not been identified from existing information available for this QAPP. This issue will be further evaluated in the BERA.
USEPA (2007b)	11	A009	1-5	Page 1-5, 1st paragraph: It should be noted in this paragraph that Upper Columbia white sturgeon were historically a very important fish to Native American populations and provided numerous cultural and subsistence uses. They continue to be of very high importance to tribes today, in part because of these traditional uses.	Comment acknowledged. We believe that the discussion of the importance of Upper Columbia white sturgeon to Native American populations, both historically and currently, should be addressed in the human health documents, where human use scenarios and considerations are discussed in detail.	Assessment of sturgeon is not a goal of the current 2009 fish tissue investigation. Sturgeon will be evaluated in other study plans developed as part of the UCR RI/FS.
USEPA (2007b)	11	A009	1-5	Page 1-5, 1st paragraph: It should be noted in this paragraph that Upper Columbia white sturgeon were historically a very important fish to Native American populations and provided numerous cultural and subsistence uses. They continue to be of very high importance to tribes today, in part because of these traditional uses.	Comment acknowledged. We believe that the discussion of the importance of Upper Columbia white sturgeon to Native American populations, both historically and currently, should be addressed in the human health documents, where human use scenarios and considerations are discussed in detail.	Assessment of sturgeon is not a goal of the current 2009 fish tissue investigation. Sturgeon will be evaluated in other study plans developed as part of the UCR RI/FS.
USEPA (2007b)	13	A011	1-8	Pg 1-8, section 1.3.2, 3rd par – A more comprehensive application of the DQO process is needed in section 8 to justify proposed investigations.	Media-specific DQOs will be developed during SAP preparation.	DQO for the fish tissue investigation are described in Section A9.
USEPA (2007b)	14	A012	1-8	Page 1-8, Last paragraph -Modify third sentence to state that cultural resource plan will be coordinated with all Section 106 consulting parties for Lake Roosevelt, including the two Tribes, State of Washington DAHP, Bureau of Reclamation, and the National Park Service.	Agreed. TCAI is currently discussing with DOI the most efficient way to coordinate with the entities. Revised text for this section includes the recommended information.	A cultural resource plan for this investigation is provided in Appendix B, Attachment 4.
USEPA (2007b)	33	A030	2-29	pg 2-29 Section 2.3.2.3 Fisheries -Sturgeon is currently not a game fish. They mention Tshimakain Mission at Ford but should also mention St. Paul's Mission at Kettle Falls.	It is our understanding that there is a catch-and-release program in effect for sturgeon. St. Paul's mission will be mentioned.	Assessment of sturgeon is not a goal of the current 2009 fish tissue investigation. Sturgeon will be evaluated in other study plans developed as part of the UCR RI/FS.

Appendix C. RI/FS Work Plan Comments Relevant to the Fish Tissue Quality Assurance Project Plan

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			Page Number ^a			
USEPA (2007b)	38	A035	3-1	Pg 3-1, 1st par -Consultation under section 106 Archaeological Resource Protection Act and section 7 of ESA are required for onsite actions associated with CERCLA activities. This is consistent with EPA Region 10 activities previously conducted at the Upper Columbia River site and other sites throughout the northwest. In addition, a scientific collection permit will be required from the National Park Service for any sampling events conducted on the National Recreation Area. DOI plans on developing a federal access agreement with Teck Cominco to support these permit and sampling needs for the RI/FS.	Agreed. Text has been revised accordingly.	Specimen collection permits will be obtained prior to sampling from the Washington Department of Fish and Wildlife. Access permits will be obtained in consultation with the NPS and other appropriate authorities.
USEPA (2007b)	41	A038		"NHPA requires that the agency implementing the undertaking consult with the SHPO, the land-managing agency and the appropriate tribal governments about their proposed undertaking, its' potential effect on cultural resources, and any actions proposed to mitigate an adverse effect on the site."	Text has been revised accordingly. We agree that consultation needs to occur. TCAI is currently coordinating with EPA and DOI regarding the cultural resources plan to ensure effective communication and coordination for future sampling.	A cultural resource plan for this investigation is provided in Appendix B, Attachment 4.
USEPA (2007b)	119	A093_1	8-21	Section 8.2.8, Page 8-21. Specialty Studies for White Sturgeon, § 8.2.8.4, Page 8-21. RI/FS Tasks. States: "It is proposed to use the existing infrastructure of the UCRWSRI to develop a list of studies to address the potential role of contaminants to address the possible survival bottleneck could exist subsequent to the initiation of exogenous feeding. Once the most relevant studies have been identified, detailed study plans will be developed in consultation with the UCRWSRI." Teck submission of plans developed in concert with UCRWSRI does not eliminate EPA's oversight role nor the assistance and input from the participating parties. More-over the CERCLA process is quite different from a recovery plan process. In the absence of good data the contamination at the Site and its effects on sturgeon, the recovery team has given very little consideration to investigating the impacts of hazardous substances on sturgeon.	The UCRWSRI are recognized experts that have come together to better understand and address technical issues associated with the decline of white sturgeon within the Upper Columbia River. TCAI believes this expertise is critical to the development of pertinent studies in addressing potential risks to white sturgeon from hazardous materials. Any study developed in concert with UCRWSRI will be reviewed and approved by EPA and the participating parties. During the review process EPA and its partners will have ample opportunity to provide input to the study design.	Assessment of sturgeon is not a goal of the current 2009 fish tissue investigation. Sturgeon will be evaluated in other study plans developed as part of the UCR RI/FS.
USEPA (2007b)	120	A093_2		The risk from hazardous substances is an inquiry that is most appropriate for the regulatory regime designed to deal with it – CERCLA. Hence, the studies on sturgeon should be developed as a part of the RI effort with the assistance of EPA and its government partners. Members of the recovery team may be able to provide expert assistance, but CERCLA should drive the process for study development.	The statement in this section of the RI/FS work plan refers only to concentrations, which have toxicity implications. There are no implications of loadings mentioned.	Assessment of sturgeon is not a goal of the current 2009 fish tissue investigation. Sturgeon will be evaluated in other study plans developed as part of the UCR RI/FS.

Appendix C. RI/FS Work Plan Comments Relevant to the Fish Tissue Quality Assurance Project Plan

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			Page Number ^a			
USEPA (2007b)	125	A097	8-11	pg 8-11 Section 8.2.2: The proposed studies on pore water do not address pore water toxicity to various fish species and their most sensitive life stages. For example, Upper Columbia white sturgeon fry burrow into sediment and are thus exposed to pore water at a very sensitive life stage. Because white sturgeon recruitment failure in the Upper Columbia River likely occurs at a young life stage, the potential toxicity of pore water to white sturgeon fry, and possibly other species, must be evaluated. Additionally, toxicity should be broadly defined, not be limited to lethal endpoints, and include chronic as well as acute evaluations. It is stated that the biotic ligand model will be used to estimate bioavailability and toxicity. We recommend that the evaluation of potential risks of metals to biota not be limited to only concentrations developed by this model. We recommend that species diversity be included in the evaluation of biological communities.	This comment will be addressed in the BERA work plan, when additional detail is provided.	Assessment of sturgeon is not a goal of the current 2009 fish tissue investigation. Sturgeon will be evaluated in other study plans developed as part of the UCR RI/FS.
USEPA (2007b)	165	A132_2		COSEWIC Assessment and Update Status Report in the White Sturgeon, <i>Acipenser transmontanus</i> , in Canada. Environment Canada, Ottawa. Heath, A.G. 1995. Water pollution and fish physiology. CRC Press, Boca Raton, FL.	Comment acknowledged. The references provided here will prove very useful in future stages of the project.	Assessment of sturgeon is not a goal of the current 2009 fish tissue investigation. Sturgeon will be evaluated in other study plans developed as part of the UCR RI/FS.
USEPA (2007b)	170	A132_7		Upper Columbia River White Sturgeon Recovery Initiative. 2002. Upper Columbia white sturgeon Recovery Plan and Technical Appendices. Plan and technical appendices prepared for the UCWSRI. Prepared by S.P. Cramer & Associates, Sandy, OR. 90 p. +107 p. 13 Table 1.	Comment acknowledged. The references provided here will prove very useful in future stages of the project.	Assessment of sturgeon is not a goal of the current 2009 fish tissue investigation. Sturgeon will be evaluated in other study plans developed as part of the UCR RI/FS.
USEPA (2007b)	179	A134		Teck may find the following list of potential studies (provided in comments to EPA) useful for the revised Work Plan, RI, or Risk Assessments. Health evaluation (internal and external) of all fish collected This is a standard method for assessing relative health of fish populations, and is commonly done at superfund sites. Chronic water-only exposure of sturgeon larvae and eggs to COPCs Eggs and/or young endogenously-feeding and early exogenously feeding sturgeon appear to suffer high mortality. These experiments will indicate whether sturgeon are more sensitive than other fish species to exposure to specific COPCs Effect of exposing sturgeon eggs and larvae to slag on their growth and survival. Some stakeholders have expressed concern that the sharp edges of slag may pose a risk to the growth and survival of sturgeon eggs and recently hatched sturgeon.	Comment acknowledged. The potential studies described here will be considered in the development and refinement of additional information needs. We would like to take this opportunity to direct the reviewer to work completed or being investigated by the UCRWSRI in which some of the described studies/tests have been evaluated, completed, or are ongoing (e.g., telemetry).	Assessment of sturgeon is not a goal of the current 2009 fish tissue investigation. Sturgeon will be evaluated in other study plans developed as part of the UCR RI/FS.

Appendix C. RI/FS Work Plan Comments Relevant to the Fish Tissue Quality Assurance Project Plan

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			Page Number ^a			
USEPA (2007b)	180	A134		These experiments will address this concern. Measure the concentration of COPCs in sturgeon eggs. Sturgeon are long-lived, increase lipid content with age, and, thus can accumulate high levels of COPCs in their lipid stores. In turn, when females develop eggs, these COPCs are "dumped" into these eggs, and may pose significant risk to the growth and survivorship of these eggs and young sturgeon. Concentrations of COPCs in eggs can be compared to fish egg TRVs to assess risk. Chronic water-only exposure of rainbow trout to slag-contaminated water. Rainbow trout are a receptor in the UCR (i.e. surrogate for other species), and are well known to be relatively sensitive to COPCs compared to many fish species. Chronic toxicity of dietary exposure of rainbow trout to COPCs. The results of these experiments will indicate the relative contribution of dietary versus water exposure to COPCs. Satellite telemetry of sturgeon in the UCR. Necessary to determine movements, site use, and risk from COPCs.	Comment acknowledged. The potential studies described here will be considered in the development and refinement of additional information needs. We would like to take this opportunity to direct the reviewer to work completed or being investigated by the UCRWSRI in which some of the described studies/tests have been evaluated, completed, or are ongoing (e.g., telemetry).	Assessment of sturgeon is not a goal of the current 2009 fish tissue investigation. Sturgeon will be evaluated in other study plans developed as part of the UCR RI/FS.
USEPA (2007b)	181	A134		Develop relationship between concentrations of COPCs in whole-body versus blood and muscle samples in white sturgeon. Samples have already been collected as part of the Portland Harbor RI/FS, but no funding currently exists to analyze the blood and muscle samples. Tissue concentrations of COPCs in sturgeon via muscle plugs and blood samples. This is necessary to (1) estimate current whole-body tissue concentrations of COPCs in sturgeon in the UCR, and thereby assess current risk to sturgeon from COPCs, and (2) monitor the effectiveness of future remedial actions on sturgeon. Behavioral avoidance studies of fish (e.g., sturgeon, rainbow trout) in lab and field (using telemetry) to COPCs known to impair olfactory ability in fish. Many compounds, including metals (e.g., copper) are well known to temporarily or permanently impair olfactory function. Many fish species use olfaction to locate prey, mates, and/or breeding areas.	Comment acknowledged. The potential studies described here will be considered in the development and refinement of additional information needs. We would like to take this opportunity to direct the reviewer to work completed or being investigated by the UCRWSRI in which some of the described studies/tests have been evaluated, completed, or are ongoing (e.g., telemetry).	Assessment of sturgeon is not a goal of the current 2009 fish tissue investigation. Sturgeon will be evaluated in other study plans developed as part of the UCR RI/FS.

Notes:

^a Document page number refers to page numbers in the December 2006 Draft UCR RI/FS Work Plan (TCAI 2006).
USEPA. (2007a). Round 2 comments on Teck Cominco draft RI/FS work plan dated December 27, 2006, Upper Columbia River RI/FS. Comments dated April 11, 2007. U.S. Environmental Protection Agency, Washington, DC.
USEPA. (2007b). Round 3 comments on Teck Cominco draft RI/FS work plan dated December 27, 2006, Upper Columbia River RI/FS. Comments dated June 14, 2007. U.S. Environmental Protection Agency, Washington, DC.