

Sediment Sampling and Analysis Plan
Washington State Department of Ecology Comment and Response Matrix

Comment No.	Section/Table/ Figure No.	Page No.	Author Assigned	Ecology Comment	Anchor QEA Response
1.	Table of Contents	iii	TE	Appendices [Attachments] A-E should be listed with their respective titles.	Attachments have been updated by the Technical Editor.
2.	Section 1.1: Site Description and History	2	Rob	a. Include facility upgrades from 2010 to 2018 in the 1st paragraph for completeness.	This text has been added.
3.		2	Rob	b. The 2nd paragraph states that the earliest sediment investigations occurred in 1855; however, this may be a typographical error and should likely read 1955. Please verify and update accordingly.	The date of the study could not be verified and this sentence has been deleted.
4.		2	Rob	c. The 4th paragraph mentions proposed station locations, but they are only included in the table and not specified in the text. Ensure the table is referenced in the paragraph or explicitly list the locations for clarity.	The fourth paragraph of Site Description and History discusses the sampling event that occurred in the vicinity of the outfall in November 1995, not the proposed samples. Section 2.1 Sample Design has been revised to include reference to Table 1.
5.		2	Catherine	d. The term “SG” should be defined before listing the station locations used for the November 1995 sampling event. These locations are outlined in the 2014 DNR Aquatic Lands Outfall Easement. Please ensure the term is clearly explained for consistency.	Text in Section 1.1, paragraph 4, was updated to define SG as a sediment grab at first use.
6.		2	Catherine	e. The 4th paragraph is missing the EIM Study ID for the 1995 data. Please include the study ID CHAMBR95 for reference.	The Study ID CHAMBR95 for the 1995 data was added to Section 1.1, paragraph 4.
7.		2	Catherine	f. It appears that the grainsize results from study ID CHAMBR95 were not entered into the EIM database. It is recommended to update text in the 4th paragraph to state the following: “The sample data (excluding grainsize) are available in Ecology’s Environmental Information Management (EIM) database.”	Text in Section 1.1, paragraph 4, was updated as suggested to clarify grain size is excluded from Ecology’s EIM database.
8.	Section 2.1: Sampling Design	4	Catherine	a. Background samples are not required but can be included if desired.	Background samples are included in this sampling event even though not required by SCUM.
9.		4	Catherine	b. Include the potential location for the bioassay reference sample, as included in Section 6.4.4.	Text from Section 6.4.4 was copied into Section 2.1, paragraph 3, to state bioassay reference samples will be collected from the Carr Inlet, and references Section 6.4.4 for more details.
10.		Figure 2	Catherine	c. Rearrange the sample locations along the chronic mixing zone area to achieve a greater spatial separation, as the current arrangement places the samples too closely together.	Proposed sample locations in the chronic mixing zone area were relocated to achieve greater spatial separation.
11.			Catherine	d. Ammonia, sulfides, and total volatile solids should be added to the list of analyses performed, as mentioned in the second paragraph.	The text has been revised so that all analyses are explicitly listed in Section 2.1.
12.		4-5	Catherine	e. Include a sentence in the third paragraph specifying which regulatory document and criteria will be used to assess the bioassay data.	A sentence has been added to Section 2.1, paragraph 3, clarifying that bioassay testing will be compared against SMS Marine Biological Criteria as presented in SCUM.

Sediment Sampling and Analysis Plan
Washington State Department of Ecology Comment and Response Matrix

Comment No.	Section/Table/ Figure No.	Page No.	Author Assigned	Ecology Comment	Anchor QEA Response
13.	Section 2.1: Sampling Design	5	Catherine	f. The last paragraph lists myEIM tools, which have recently become obsolete. Update "myEIM" to "EDAT" (Ecology's EIM Data Analysis Tool). For more information, refer to the following link: EDAT .	Text referencing "myEIM" has been updated to "EDAT" in Section 2.1 and throughout the SSP. Footnote 1 has been updated to reference the new EDAT link provided.
14.	Section 3.3.1: Surface Sediment Sample Collection	7	Catherine	Include a statement advising to contact Ecology if a sample is refused after three attempts.	Text has been added to Section 3.3.1 indicating that Ecology should be contacted if adequate penetration is not achieved after three attempts.
15.	Section 3.3.2: Sample Processing	8	Catherine	Consistent with Ecology 2021 SCUM guidance Section 4.5.6, sediment samples collected for volatile chemical analyses (e.g., VOCs and sulfides) will be taken from the sampling device immediately after retrieval and placed in appropriate sample containers prior to homogenization.	A new bullet was added to Section 3.3.2 providing the information on VOC and sulfide collection.
16.	Section 3.4: Sample Identification	8	Catherine	a. Revise 'The next three' to 'The next two' in bullet point three to reflect the correct count.	Section 3.4, bullet point three text was corrected from 'The next three' to 'The next two' as requested.
17.		8	Catherine	b. Revise 'The next seven' to 'The next six' in bullet point five.	Section 3.4, bullet point five text was corrected from 'The next seven' to 'The next six' as requested.
18.	Section 3.5: Sample Containers and Labels	9	Catherine	Add 'Sampling personnel' to the container label information list, in accordance with SCUM guidelines Section 3.5.3.	Section 3.5, bullet point two was added to include "sampling personnel initials" to the container label to be in accordance with SCUM guidelines in Section 3.5.3.
19.	Section 3.7: Sample Containers and Labels	10	Catherine	SCUM Section 4.5.9 outlines proper procedures for sediment storage and disposal, specifying the necessary steps to follow when visible contamination is present, including handling, containment, and approved disposal methods.	Additional text from SCUM Section 4.5.9 was added to Section 3.7 to clarify how disposal of sediment is to be handled if visible contamination is present.
20.	Section 5: Analysis Methods	13	Ariel/Catherine	a. Include bioassay parameters and provide a discussion of the bioassay laboratory, as outlined in Section 4.6 of SCUM, to ensure proper methodology and laboratory selection.	Additional information on the bioassay laboratory has been added to Section 6.4 as requested.
21.		13	Ariel	b. Provide a discussion of the bioassay parameters listed in Table 7 for proper context.	Additional discussion of the bioassay parameters shown in Table 7 has been added to Section 6.4.
22.	Section 5.2: Contingent Bioassay Analysis	13-14	Catherine	Discuss the use of a bioassay reference sample, as outlined in SCUM Section 6.4.4.	Text was added to Section 5.2 to clarify reference samples will also be ran for bioassay testing and used for data interpretation.
23.	Section 6: Quality Assurance/Quality Control	15	Catherine	Include the TOC calculation and corresponding ranges, as outlined on pages 6-7 of SCUM.	A new Section 6.8 was added to include the TOC calculation and corresponding ranges.
24.	Section 6.2.1: Field Duplicates	19	Catherine	Specify the analyses that will be reported for the field duplicate to provide clarity in the data reporting.	Text was added to Section 6.2.1 to specify the field duplicate will be analyzed for the same list of analytes as the parent sample, and a reference to Table 6 (which describes what the field duplicate should be analyzed for) was included.

Sediment Sampling and Analysis Plan
Washington State Department of Ecology Comment and Response Matrix

Comment No.	Section/Table/ Figure No.	Page No.	Author Assigned	Ecology Comment	Anchor QEA Response
25.	Section 6.4.4: Reference Sediment	21	Ariel	Include a reference sediment sample for comparison and quality control purposes for possible bioassays.	If bioassay testing is needed, bioassay reference samples will be collected by the bioassay analytical lab from an area documented to be free from chemical contamination (Carr inlet). Section 6.4.4 heading updated to clarify that this section is for bioassays.
26.	Section 7.1: Documentation and Records	25	Catherine	Update the records retention period to 10 years, as specified in SCUM Section 5.6.	Text was updated in Section 7.1 to state, "All such records should be maintained for a minimum period of 10 years after the issuance, modification, or renewal of the applicable permit."
27.	Section 7.1.2: Analytical and Chemistry Records		Ariel	Add a section discussing the management and retention of bioassay records.	Section 7.1 has been revised to indicate that the management and retention of records; includes bioassay records.
28.	Section 7.5: Data Report		Catherine	The data report should highlight any exceedances and include a data table for the bioassay results.	Text added to Section 7.5 to clarify any SMS criteria exceedances will be highlighted and a bioassay data table included if tested.
29.	Section 7.6: Ecology EIM Submittal		Catherine	a. Include "The results will be entered into EIM using an EIM Study ID with the prefix "CHAMBR" and then the two digit sampling year."	Section 7.6 revised to include the requested text.
30.			Catherine	b. Update myEIM to EDAT.	"myEIM" has been updated to "EDAT" in Section 7.6 and throughout report.
31.	Section 10: Project Personnel and Responsibilities		Catherine	The last paragraph should include information about the bioassay laboratory, including relevant details on methods and accreditation.	Text has been added to Section 10 to include the bioassay laboratory. A reference to Section 5.2 where accreditation and methods are discussed has been added.
32.	Table 1: Sampling Design for NPDES Sediment Monitoring	--	Catherine/GST	a. Include outfall coordinates in the table for better location reference, preferably the diffuser beginning and end point coordinates.	The diffuser beginning and end point coordinates have been added to Table 1.
33.			Catherine	b. Correct the Northing and Easting labels, as they are currently switched.	The northing and easting labels in Table 1 have been corrected.
34.			Catherine	c. Add PAHs to the "Chemical Testing Parameters" column for comprehensive reporting.	PAHs has been added to the "Chemical Testing Parameters" list in Table 1.
35.			Catherine	d. Add a "Bioassay Test" column to capture relevant bioassay data.	Added a "Bioassay Testing" column to Table 1 stating, "Bioassays will be triggered if chemistry results indicate concentrations greater than SQS criteria." SQS was subsequently added to the notes.
36.		--	Lydia	a. Include grain size and total volatile solids to ensure comprehensive sediment characterization.	Grain size and total volatile solids have been added to Table 3.

Sediment Sampling and Analysis Plan
Washington State Department of Ecology Comment and Response Matrix

Comment No.	Section/Table/ Figure No.	Page No.	Author Assigned	Ecology Comment	Anchor QEA Response
37.	Table 3: Guidelines for Sample Handling and Storage		Catherine	b. For sulfides, specify "no headspace" in the container type and size column to meet proper sampling requirements.	"(no headspace)" has been added to the "Container Size and Type" column for sulfides in Table 3.
38.	Table 4: Parameters for Analysis of Chemistry, Methods, and Target Quantitation Limits	--	Catherine /Lydia QC	a. The methods listed for total solids, ammonia, and sulfides are not recommended according to SCUM Table 5-1. Consider revising to align with SCUM guidance.	Methods for total solids, ammonia, and sulfides in Table 3 were updated to include the methods from SCUM Table 5-1.
39.			Catherine /Lydia QC	b. Recommendation: Hexachlorobenzene and hexachlorobutadiene can be analyzed using method 8270 SIM to meet project data quality objectives (DQOs).	Methods for hexachlorobenzene and hexachlorobutadiene in Table 4 were updated from USEPA 8081B to USEPA 8270E-SIM as requested.
40.	Table 5: Data Quality Objectives	--	Lydia	a. Include total volatile solids for a more comprehensive analysis of sediment composition.	Total volatile solids has been added to Table 5.
41.			Lydia	b. Review the accuracy column, as most methods listed rely on control charting and method-specific performance values.	Note 1 has been revised to indicated that all other accuracy would be based on laboratory control limits.
42.	Table 6: Field and Laboratory Quality Assurance/Quality Control Analysis Summary	--	Catherine /Lydia QC	a. Update the Replicates, MS, and LCS/Blank Spike columns for Total Organic Carbon to reflect "1 per 10 samples."	The Total Organic Carbon row in Table 6 was updated as requested to reflect "1 per 10 samples" in columns Replicates, MS, and LCS/Blank Spike.
43.			Catherine /Lydia QC	b. Update the MSD column for Metals to reflect "1 per 20 samples."	The MSD column for metals was updated to reflect "1 per 20 samples" as requested.
44.			Catherine	c. Revise the SVOCs/PCBs column name to include "PAHs" for clarity and completeness.	The "Analysis Type" category in Table 6 for SVOCs and PCBs was updated to also include PAHs for completeness.
45.	Table 7: Bioassay Analysis Performance Standards	--	Catherine	For Neanthes 20-day growth, add "ash-free dry weight" to the control performance criteria.	Table 7's Neanthes 20-day growth control performance criteria cell was updated to state "MC ≤ 10% and MIGC ≥ 0.38 mg/individual/day ash-free dry weight (or case by case)".
46.	Table 8: SCUM Table 5-9 Marine and Estuarine Sediment Toxicity Test Conditions	--	Catherine	Recommend including the bioassay table from SCUM Table 5-9 to align with established guidelines.	SCUM Table 5-9 was added to the SSAP as Table 8.
47.	Figure 2: Sampling Plan		Catherine	a. The chronic mixing zone samples should be spread out more for better spatial representation.	Proposed sample locations in the chronic mixing zone area were relocated to achieve greater spatial separation.
48.		Table 1	Catherine	b. Stations 3 and 4 are switched according to the coordinates listed in Table 1; please correct this discrepancy.	Table 1 updated to correct coordinates for Stations 3 and 4.

Sediment Sampling and Analysis Plan
Washington State Department of Ecology Comment and Response Matrix

Comment No.	Section/Table/ Figure No.	Page No.	Author Assigned	Ecology Comment	Anchor QEA Response
49.		Figure 2	Catherine/GST	c. The historical location SG+310 is missing from the figure and should be included for completeness.	SG+310 has been added to Figure 2.
50.	Attachments		Catherine/TE	Remove Attachment A, permit, from the document. Reference to the permit is recommended throughout the document but a copy of the permit is not necessary.	Removed Attachment A from the document.
51.	Attachment E: Health and Safety Plan		Rob	a. Ensure all aspects of SCUM Section 3.2.3 are addressed.	The HASP addresses all aspects of SCUM 3.2.3 Health and Safety plan.
52.			Rob	b. Section 8.4: Include a discussion on the disposal and testing of investigative derived waste (IDW).	Text was added to Section 8.4 stating anticipated disposal procedures for grab samples will be to put any remaining sediment back in place unless visual contamination is present. In which case, a sample will be sent to an analytical lab for chemical testing, and the media will be sealed in a container and stored until results inform disposal.
53.			Rob	c. Specify disposal procedures for contaminated media and equipment.	Text was added to Section 8.4 stating equipment will be decontaminated on site after each use.
54.			Rob	d. A contingency plan could not be located; consider retitling Section 1.1 (Health and Safety Plan Requirements) to fulfill this requirement.	Section 1.1 was renamed to "Health and Safety Plan Requirements and Contingency Plan."
55.			Rob	e. Provide details on the medical surveillance program.	Text was added to Section 12 to state medical surveillance will include pulmonary function tests and heavy metal biomonitoring.
56.			Rob	f. General safety procedures are included, but a dedicated "Work Safe Procedures" section, as required by the SCUM checklist, is missing.	Section 11 has been renamed "Work Safe Procedures and Practices."
57.			Rob	g. Specify reporting and record-keeping procedures; appropriate documentation for logs is provided but needs further clarification.	Text was added to Section 4.2 stating, "The field team will have a health and safety meeting led by the FL prior to any field work each day. The FL will fill out the health and safety forms during the meeting to discuss any hazards, weather, and other applicable details listed above. All members will sign the health and safety form. A hard copy and virtual scan of the forms will be filed with all other sampling logs and included in the field report." Attachment E is renamed Attachment D in the report.