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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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August 10, 1992

Eric Goller
U.S. Department of Energy
Richland Operations Office
P.O. Box 550
Richland, WA 99352



Re: Description of Work for 100-Area Columbia River Sediment Sampling (M-30)

Dear Mr. Goller:

The Washington Department of Ecology has reviewed the Description of Work for 100-Area Columbia River Sediment Sampling, pursuant to M-30. We have several comments principally related to purpose, locations, and contaminants of concern.

Section 1

1. We already know that there are radioactive and chemical contaminants in the River sediments. We need to know how much and where?
2. The limited number of samples make it doubtful that the stated objective can be met, which is to "determine if radiological contaminants are present in Columbia River sediments as a result of reactor operations." These samples will serve as point contamination checks. If all analyses show no contamination, the hypothesis of no contamination still has not been proved. However, some positive results would support the hypothesis that radiological contaminants are present.

Section 2.1

3. EII 5.2 is referenced, but specific details concerning its implementation are lacking. I.e.:

- Section 6.1 What monitoring equipment is planned for use?
- Section 6.2 What protective materials will be used to preserve the cleanliness of the equipment?
- Section 6.3 What containers are planned for use?
- Section 6.3(5) Will ice, blue ice, or dry ice be used to store samples?
- Section 6.3(7) When will shield boxes be required?
- Section 6.5 List the various specific sampling, packaging, labeling, and shipping requirements that are dependent on content and volume.

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Section 3.1

4. The effort should be extended to the entire Hanford Reach, not just that portion contiguous to the 100-Area.
5. The reconnaissance effort should include the involvement of the regulators, and the selection of sample locations should be subject to approval of the regulators.
6. There are no upstream, reference samples planned. This is a deficiency. You may expect to see Cs-137 in sediment samples. Whether this cesium is from fallout or results from reactor operations cannot be evaluated without reference samples.
7. The map and the location descriptions do not provide sufficient detail to determine if the best sites are being evaluated. Does downriver side of islands include the slack side of islands?
8. It was stated that the exact locations will be chosen during reconnaissance efforts. Preliminary efforts for sampling should be chosen based on the flow characteristics of the river. Pacific Northwest Laboratory (PNL) documents or contacts should be consulted. Some of these documents are dated and would possibly give flow information for the time periods of interest.
9. The map indicates mid-river sample locations. Look for the sediments to deposit on the slack side of islands and the low flow sides of the river, not mid-channel. PNL documents describe specific flow patterns from each operational area.

Section 3.2

10. Gross alpha is not a valuable screen for soils and sediments. Although it is more costly, isotopic uranium, plutonium and americium should be accomplished. Isotopic uranium can be achieved through the gamma scan if procedures are in place and sufficient sample is collected.
11. Make sure that the total activity results are only used to allow off-site sample shipment. These results can't substitute for analytical analysis and results are not useful for addressing the project objective.
12. What are "short lived" radioactive isotopes?
13. What is the purpose of the rudimentary particle size distribution analysis? What is the significance for the $<62\mu\text{m}$ size criteria? Why are sediments divided into two fractions around the $62\mu\text{m}$ size? What support is there for the assumption that contamination will reside on either the >62 or $<62\mu\text{m}$ fraction? This analysis may be eliminated in favor of more thorough analysis of other facets of the study.

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14. What is "notable contamination"?

Section 3.3

15. Specify the type of devices that will be used.
16. Specify the title of the OSWER directive. Explain why the trip blank and field blanks have been deleted?
17. It is difficult to evaluate this section without reviewing the sampling procedures. De-contamination will be important. I'm also interested in how care will be taken to ensure the fine fraction is retained in the sampler?
18. The total number of samples proposed in this Section does not match the total described in Section 3.6 (80 compared to 76, respectively). The number of QA samples do not correlate between the two Sections. Section 3.3 states one additional blank, replicate, and split sample will be taken than mentioned in Section 3.6.
19. In reference to split samples, we would be interested in K, N, H, and F slough areas as well as backsides of the mid-channel islands. Maybe we can work together on this to select the best samples to take.

Section 5

20. The analytes in Table 1 do not correspond to the lists of contaminants of concern in the 100 Area operable units.

Sincerely,



Steve Cross
CERCLA Unit
Nuclear and Mixed Waste Management Program

SC:jw

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Subject: DESCRIPTION OF WORK FOR 100-AREA COLUMBIA RIVER SEDIMENT SAMPLING (M-30)

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