0077727

STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

3100 Port of Benton Blvd • Richland, WA 99354 • (509) 372-7950

June 5, 2008

Mr. Briant L. Charboneau
Richland Operations Office
United States Department of Energy
P.O. Box 550, MSIN: A6-33
Richland, Washington 99352

Dear Mr. Charboneau:

Re: Department of Ecology Approval of *Tanks/Lines/Pits/Boxes/Septic Tanks and Drain Fields Waste Group Operable Unit Remedial Investigation/Feasibility Study (RI/FS) Work Plan and Resource Conservation and Recovery Act (RCRA) Treatment, Storage, and Disposal (TSD) Unit Sampling Plan; includes: 200-IS-1 and 200-ST-1 Operable Units*, DOE/RL-2002-14, Revision 1, Draft B

The Department of Ecology approves the referenced RI/FS Work Plan. We request that the United States Department of Energy (USDOE) delete Figure 5-1, "*Integrated Regulatory Process for CERCLA, RCRA Past-Practice and RCRA Treatment, Storage and Disposal Unit Closure,*" from the RI/FS Work Plan. We do not intend to follow the regulatory process shown in Figure 5-1. Ecology, USDOE, and the U.S. Environmental Protection Agency are working on a replacement process.

We agree with USDOE that the only unresolved review comment (#25) (enclosure) is a global comment applicable to many 200 Area operable units that should be resolved outside of this RI/FS Work Plan.

If there are any questions, contact John Price at 509-372-7921.

Sincerely,

Cheryl L. Whalen
Cleanup Section Manager
Nuclear Waste Program

RECEIVED
JUN 06 2008
EDMC

lf/aa
Enclosure

cc: See next page

cc w/enc:

Craig Cameron, EPA
Stuart Harris, CTUIR
Gabriel Bohnee, NPT
Russell Jim, YN
Susan Leckband, HAB
Ken Niles, ODOE
Administrative Record: 200-IS-1, 276-S-141/142 hexone tanks TSD, 241-CX-70/71/72 TSD
Environmental Portal

Document Number(s)/Title(s)	Program/Project/Building Number	Reviewer	Organization/Group	Location/Phone
Tanks/Lines/Pits/Boxes/Septic Tanks and Drain Fields Waste Group Operable Unit Remedial Investigation/Feasibility Study (RI/FS) Work Plan and Resource Conservation and Recovery Act (RCRA) Treatment, Storage, and Disposal (TSD) Unit Sampling Plan; includes: 200-IS-1 and 200-ST-1 Operable Units, DOE/RL-2002-14, Revision 1, Draft B, released: May 24, 2007.		John Price, Les Fort, Alisa Huckaby, Beth Rochette, Damon Delistraty, Jerry Yokel	Washington State Department of Ecology	3100 Port of Benton Blvd. Richland, WA 372-7984

Comment Submittal Approval: Agreement with indicated comment disposition(s) Status:

Organization Manager (Optional) Date Reviewer/Point of Contact Author/Originator

Date Reviewer/Point of Contact Author/Originator

Item	Page #, Line #, or Section and Paragraph	Comment (s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated)	Accept /Reject	Disposition (Provide justification if NOT accepted)	Status
25.	Section 3.6.1.2, p. 3-32, lines 21-23	Ecology's expectations for risk assessments in the Core Zone are below. Please evaluate risk in the Core Zone using the scenarios listed below. For the next 50 years: Industrial exclusive with DOE HGET/GERT-trained workers and DOE trained Rad workers. From 50 to 150 years: **A. Industrial Scenario** – For non-radiological contaminants and uranium: 1) Soil direct contact concentrations are derived using WAC 173-340-745. 2) Soil concentrations must be protective of	Reject	DOE will collect samples at detection limits that are consistent with both unrestricted and industrial land use assumptions. Land use assumptions and concomitant preliminary cleanup levels will be defined in the feasibility study.	Open. Detection limits consistent with unrestricted land use are needed for all samples – not just those outside the core zone. The information provided in this comment should be used for any decisions or planning for sampling or risk assessments for the core zone. Please use the updated version of the Exposure Assessment Criteria for the Core Zone included at the end of this

		groundwater and are derived using WAC 173-340-747 Method B; any use of subsection (5), (7), (8) or (9) methods requires Ecology approval. 3) Soil concentrations must be protective of surface water and are derived using WAC 173-340-730, (not including subsections (2) and (4)) in combination with WAC 173-340-747 Method B. Tri-Parties may not agree on this issue. Site-specific groundwater modeling beyond waste site boundaries may be needed to address attenuation and anticipated concentrations at the Columbia River from Core Zone and down-gradient sources of contamination. 4) Groundwater cleanup levels are derived according to WAC 173-340-720, Method B. 5) Groundwater ingestion must be included as a pathway in risk assessments. 6) Site risk for individual carcinogens is not to exceed 1E-05. 7) Total site risk for carcinogens, for all contaminants, all pathways and all media, is not to exceed 1E-05. 8) Site hazard quotient for individual hazardous contaminants is not to exceed 1. 9) Site hazard index is not to exceed 1. 10) Air protection values are derived according to WAC 173-340-750. 11) Soil concentrations must be protective of terrestrial ecological receptors and obtained as specified in WAC 173-340-7490 and using Table 749-3. **B. Industrial Scenario** – For radiological contaminants: 1) 15 mrem/y dose limit (total effective dose from all pathways) applies to industrial workers (consistent with CERCLA risk range of 1E-4 to 1E-6 per OSWER 9200.4-18). 2) Groundwater concentrations are not to exceed MCLs for radionuclides from all current (e.g.,			RCR. (BR)

		groundwater plumes) and future (e.g., soil leaching) contaminant sources. 3) Groundwater ingestion must be included as a pathway in risk assessments. 4) Annual dose from the airborne pathways is not to exceed 10 mrem/y for the maximally exposed individual at the site boundary, based on National Emission Standards for Hazardous Air Pollutants (NESHAPS) (40 CFR 61). 5) USDOE Biota Dose Assessment Committee (BDAC) methods should address site biota. Biota Concentration Guidelines (BCGs) represent the general screening phase and apply to soil, sediment, and water. Pathways to sediment and water should be protected to avoid exceeding BCGs at the river. BCGs correspond to 0.1 rad/d for terrestrial and riparian animals and 1 rad/d for terrestrial plants and aquatic animals. <u>Other scenarios to support remedy decisions:</u> • According to 40 CFR 300.515(f), the State may opt for an enhanced remedy, different than the remedy chosen using the CERCLA 9 criteria, if the State is willing to pay the additional cost. In order to evaluate enhanced remedies, the State needs an unrestricted use risk assessment for each remedial alternative to evaluate protectiveness. The State may choose a more protective alternative even if it is not the preferred alternative based on the CERCLA 9 criteria. • WAC 173-340 indicates that "traditional industrial use" requires that access by the general public be restricted; an unrestricted scenario may apply for the period after active institutional controls. • WAC 173-340-708(3)(d) states that Ecology can "use alternate reasonable maximum exposure scenarios to help assess the protectiveness to			

		human health of a cleanup action alternative that incorporates remediation levels and uses engineered controls and/or institutional controls to limit exposure to the contamination remaining on the site." WAC 173-340-708(3)(d)(ii) states that other scenarios can be used for evaluating protectiveness of remedies. • Ecology may require evaluation of additional pathways for non-radionuclides. WAC 173-340-720(1)(d) states that "The department may require more stringent cleanup levels than specified in this section where necessary to protect other beneficial uses or otherwise protect human health and the environment." For example, inhalation of ground water during showering is an important pathway for Cr (VI) because it is carcinogenic by this pathway and it is expected to be a risk driver at Hanford. Other important pathways for Hanford contaminants include food ingestion pathways such as ingestion of garden produce (including fruit). For information purposes and remedial decision making, a scenario including inhalation of vapors or aerosols during showering with groundwater, and ingestion of garden produce grown on the site using groundwater, should be evaluated. • The Core Zone may shrink in the future. Areas near the current edge of the Core Zone may end up outside of the Core Zone if the zone shrinks. • CERCLA allows consideration of additional scenarios for remedial decision making. A. **Unrestricted Use** (restrictions on use of the site or natural resources affected by hazardous substance releases are not required to protect human health and the environment); both child and adult versions should be evaluated. For non-radiological contaminants and uranium:			

		• Soil direct contact concentrations are derived using WAC 173-340-740. • Soil concentrations must be protective of groundwater and are derived using WAC 173-340-747 Method B; any use of subsection (5), (7), (8) or (9) methods requires Ecology approval. • Soil concentrations must be protective of surface water and are derived using WAC 173-340-730 (not including subsections (2) and (4)) in combination with WAC 173-340-747 Method B. • Groundwater concentrations are derived according to WAC 173-340-720, Method B. • Groundwater ingestion must be included as a pathway in risk assessments. • Site risk for individual carcinogens is not to exceed 1E-06. • Total site risk for carcinogens, for all contaminants, all pathways and all media, is not to exceed 1E-05. • Site hazard quotient for individual hazardous contaminants is not to exceed 1. • Site hazard index is not to exceed 1. • Air protection values must be derived according to WAC 173-340-750. • Soil concentrations must be protective of terrestrial ecological receptors (i.e., plants, soil biota, and wildlife) and are obtained as specified in WAC 173-340-7490 and using Table 749-3. **B. Unrestricted Use** – For radiological contaminants (both child and adult versions should be evaluated): 1) 15 mrem/y dose limit (total effective dose from all pathways) applies to all human receptors (consistent with CERCLA risk range of 10^{-4} to 10^{-6} per OSWER 9200.4-18). The 15 mrem/y dose limit is the target dose limit for the reasonably-anticipated future land use.			

		2) Groundwater concentrations are not to exceed MCLs for radionuclides from all current (e.g., groundwater plumes) and future (e.g., soil leaching) contaminant sources. 3) Groundwater ingestion must be included as a pathway in risk assessments. 4) Annual dose from the airborne pathways is not to exceed 10 mrem/y for the maximally exposed individual at the site boundary, based on National Emission Standards for Hazardous Air Pollutants (NESHAPS) (40 CFR 61). 5) USDOE Biota Dose Assessment Committee (BDAC) methods should address site biota. Biota Concentration Guidelines (BCGs) represent the general screening phase and apply to soil, sediment, and water. Pathways to sediment and water should be protected to avoid exceeding BCGs at the river. BCGs correspond to 0.1 rad/d for terrestrial and riparian animals and 1 rad/d for terrestrial plants and aquatic animals. **C. Scenario including additional pathways** – include all contaminants (non-radiological and radiological) and present a scenario that considers showering, inhalation during showering, and ingestion pathways for consumption of residential produce and livestock, and game (including fish from the Columbia River), in addition to all of the Unrestricted Use pathways; both child and adult versions should be evaluated. **D. Native American Scenario** – include all contaminants (non-radiological and radiological); the scenarios should be evaluated as specified by the tribes. **E. Intruder** - evaluate potential exposures to intruders			

		with acute exposure (ex. driller, trencher, miner) to all contaminants (non-radiological and radiological). Include a scenario for post intrusion residents (children and adults) who raise produce (a garden) and have chronic residential exposure (including groundwater ingestion and groundwater use in the garden) to all contaminants (non-radiological and radiological).			