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January 28, 2019 19-NWP-016

William F. Hamel, Assistant Manager for the River Plateau
Richland Operations Office
United States Department of Energy
PO Box 550, MSIN: H5-20
Richland, Washington 99352

Re: Sensitivity Analysis on Recharge Rates for the *200-EA-1 Operable Unit Waste Site RCRA Facility Investigation/Corrective Measures Study and Remedial Investigation/Feasibility Study Work Plan* (200-EA-1 Work Plan), Draft A, DOE/RL-2016-58

References: See page 2

Dear William F. Hamel:

The Department of Ecology (Ecology) submitted comments on the above referenced work plan to the United States Department of Energy – Richland Operations Office (USDOE-RL) on August 17, 2018 (Reference 1). All of Ecology's comments have been resolved except comments addressing the following two issues. Ecology's request for USDOE-RL to:

1. Use Method 1668A for the analysis of aroclor congeners to determine the toxic equivalents on a limited number of the 114 waste sites in the 200-EA-1 Operable Unit (OU). Addressed in letter 19-NWP-015 (Reference 2).
2. Perform a sensitivity analysis on the recharge rates for the "Immature Shrub Steppe" and the "Mature Shrub Steppe" phases. Address below.

The enclosed diagram from the 200-EA-1 Work Plan (Figure 3-10) lists the recharge rates in millimeter (mm)/year for four different plant community phases. The recharge rate for "Mature Shrub Steppe" is set at 4 mm/year, the same rate as the "pre-Hanford" community phase. Ecology questions the validity of this value since there has been major destruction of the plant communities and soil horizons in the 200 Area over the past 70 years. Though replanting may be initially successful, invasive species such as cheatgrass are known to compete with native shrub communities after fires, which are likely to occur over hundreds of years.

Therefore, Ecology is requesting that USDOE-RL conduct a sensitivity analysis using the proposed Subsurface Transport Over Multiple Phases (STOMP) model to demonstrate the potential impacts of 200-EA-1 OU waste site contamination to groundwater with varying recharge rates for the "Immature Shrub Steppe" and "Mature Shrub Steppe" phases. The STOMP *Sparse Vegetation Evapotranspiration Model for the Water-Air-Energy Operational Mode* (Reference 3) includes an inverse mode to simplify parameter sensitivity analysis. It is unclear why USDOE-RL is avoiding the standard approach that has been used previously at Hanford.

The *Feasibility Study for the Plutonium/Organic-Rich Process Condensate/Process Waste Group Operable Unit: Includes the 200-PW-1, 200-PW-3, and 200-PW-6 Operable Units* (200-PW-1, 3, 6 FS) (Reference 4) performed a sensitivity study for three cribs with a limited number of contaminants. Ecology is proposing to use the same recharge rates used in the 200-PW-1, 3, 6 FS sensitivity analysis with the contaminants identified in the 200-EA-1 Work Plan. Based on the results of the sensitivity analysis, Ecology and USDOE-RL can then discuss appropriate cleanup levels for the 200-EA-1 OU Work Plan

Ecology is willing to participate in either the dispute resolution process developed as a part of the Kaizen event that was conducted in 2017, or the formal dispute resolution process as described in Article VIII of the *Hanford Federal Facility Agreement and Consent Order*.

At this point, Ecology will not approve the work plan until it includes the sensitivity analysis on recharge rates.

If you have any questions, please contact me at nina.menard@ecy.wa.gov or (509) 372-7941, or Kim Welsch, Environmental Specialist, at kim.welsch@ecy.wa.gov or (509) 372-7882.

Sincerely,

Nina M. Menard

Nina M. Menard
Environmental Restoration Project Manager
Nuclear Waste Program

nm/aa
Enclosure

References:

1. Letter 18-NWP-139, dated August 17, 2018, "Department of Ecology's (Ecology) Response to the 200-EA-1 Operable Unit Waste Site RCRA Facility Investigation/Corrective Measures Study and Remedial Investigation/Feasibility Study Work Plan, DOE/RL-2016-58, Draft A, for a Final Review Comment Record (RCR) Period"
2. Letter 19-NWP-015, dated January 28, 2019, "Polychlorinated Biphenyl (PCB) Method Analysis Selection for the 200-EA-1 Operable Unit Waste Site RCRA Facility Investigation/Corrective Measures Study and Remedial Investigation/Feasibility Study Work Plan, Draft A, (DOE/RL-2016-58)"
3. Document PNNL-15465, dated September 2005, "STOMP: Subsurface Transport Over Multiple Phases, Version 1.0 Addendum: Sparse Vegetation Evapotranspiration Model for the Water-Air-Energy Operational Mode"
4. Document DOE/RL-2007-27, dated May 2011, "Feasibility Study for the Plutonium/Organic-Rich Process Condensate/Process Waste Group Operable Unit: Includes the 200-PW-1, 200-PW-3, and 200-PW-6 Operable Units"

cc: See page 3

cc electronic w/enc:
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Jim Hansen, USDOE
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Ben Vannah, USDOE
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Cheryl Whalen, Ecology
Environmental Portal
Hanford Facility Operating Record
CHPRC Correspondence Control
MSA Correspondence Control
USDOE-RL Correspondence Control

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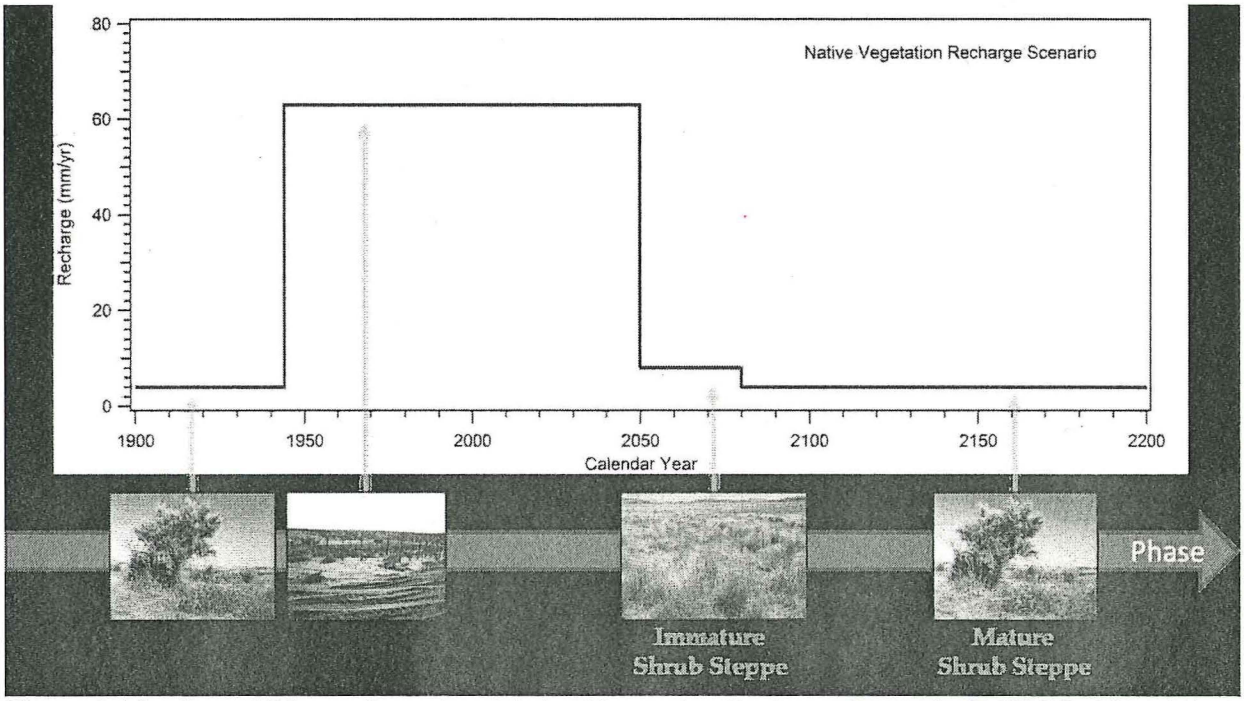

Figure 3-10. Central Plateau Inter Area Native Vegetation Recharge Scenario (DOE/RL-2016-58)