0090700

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Richland Operations Office
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10-AMCP-0252

SEP 24 2010

Ms. J. A. Hedges, Program Manager
Nuclear Waste Program
State of Washington
Department of Ecology
3100 Port of Benton
Richland, Washington 99354

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SEP 29 2010
EDMC

Dear Ms. Hedges:

100-NR-2 GROUNDWATER OPERABLE UNIT PHYTOEXTRACTION TREATABILITY TEST PLAN, DOE/RL-2010-70, DRAFT A

This letter transmits the 100-NR-2 Groundwater Operable Unit Phytoextraction Treatability Test Plan, DOE/RL-2010-70, Draft A, to the State of Washington Department of Ecology (Ecology) for your review and approval. This work is proposed to be performed under the existing Interim Remedial Action Record of Decision for the 100-NR-1 and 100-NR-2 Operable Units (EPA/ROD/R10-99/112) to fulfill the interim remedial action objective of evaluating treatment technologies. The objective of this technology is to enhance the performance of the sequestration barrier in meeting the M-016-110-T03 Target Date objective of achieving the default ambient water quality standard in the hyporheic zone and river column by December 2016.

Section 7.3.6 of the Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) provides that the lead regulatory agency shall determine on a case-by-case basis whether a treatability investigation work plan is a primary or secondary document. Treatability investigation reports are defined as secondary documents. Given the magnitude and scope of the proposed work, it is presumed that the State of Washington Department of Ecology will determine this document to be a primary document. Section 9.2 of the Tri-Party Agreement provides a 45 day review period for primary documents. However, an early draft was reviewed by Ecology staff and comments were considered in the preparation of this Draft A. If approved in a timely manner, the preliminary field preparation work can be performed this fall/winter during low river conditions, and tree planting activities can occur in early spring prior to high river conditions.

The design for this test is based on the encouraging performance of the technology at a non-radioactive test site at 100-K Area. The overall goal of this remediation strategy is to use phytoextraction to remove the sediment-bound Strontium-90 and groundwater-mobile Strontium-90 with minimal disturbance of the bank structure, so that the river and downstream environs will be protected. To achieve the goal, it must be demonstrated that:

attached to: 0090701 100-NR-2 M-016-110-T03

- A managed stand of willows can be established on the river's shore;
- The plants growing down into the cobble and riprap reach the contaminated sediment near the saturated zone; and
- When combined with the production of sufficient biomass on a yearly basis, the plant would achieve a removal of Strontium-90 from the shoreline at rates greater than 10 to 15 milliCuries/year

To meet these demands, the objectives of this treatability test are to:

1. Successfully cultivate and manage coyote willows at the shoreline of 100-N, while demonstrating the Strontium-90 phytoextraction capability of the willows from both the sediment and transient groundwater;
2. Demonstrate that the plants will efficiently remove sufficient contaminant within a given period to meet anticipated regulatory and Tri-Party Agreement requirements; and
3. Demonstrate that the technology could be safely implemented along the entire 100-N Operable Unit shoreline in a culturally sensitive and economic manner

The phytoextraction test will take up to three years to demonstrate that sufficient biomass containing significant amounts of Strontium-90 will be captured by this technology. The plan includes three decision points where, based on performance of the technology, the test can be modified or terminated. The 100-NR-2 Operable Unit Remedial Investigation and Feasibility Study (RI/FS) Report and Proposed Plan are due December 2011 per Target Date M-015-62-T01 and Tri-Party Agreement Milestone M-015. These documents will incorporate early information from the test as it is available. It is noted, however, the tests are currently planned past these dates to fully evaluate the rate of biomass production and Strontium-90 removal.

If you have any questions, please contact me, or your staff may contact Briant Charboneau, of my staff, on (509) 373-6137.

Sincerely,

Richard A. Holten, Acting Assistant Manager
for the Central Plateau

AMCP:KMT

Attachment

cc: See Page 3

cc w/attach:
G. Bohnee, NPT
L. Buck, Wanapum
D. A. Faulk, EPA
S. Harris, CTUIR
R. Jim, YN
S. L. Leckband, HAB
N. M. Menard, Ecology
K. Niles, ODOE
J. B. Price, Ecology
D. Rowland, YN (4) Plus 2 CDs
Administrative Record
Environmental Portal

cc w/o attach:
D. G. Black, CHPRC
N. A. Bowles, CHPRC
J. V. Borghese, CHPRC
R. E. Piippo, MSA
J. G. Vance, MSA