STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
3100 Port of Benton Blvd • Richland, WA 99354 • (509) 372-7950

July 19, 2010

RECEIVED
JUL 21 2010
EDMC

Mr. Richard Albright, Director
Office of Air, Waste and Toxics
EPA Region 10
1200 Sixth Avenue. Suite 900
Seattle, Washington 98101-3140

Re: Department of Ecology (Ecology) Response to the Consolidated United States Environmental Protection Agency (EPA) Comments on "*Hanford Site Solid Waste Landfill Closure Plan*, DOE/RL-2008-54, Draft A, and *Nonradioactive Dangerous Waste Landfill Closure/Post-Closure Plan*, DOE/RL-90-17, Revision 1", EPA Letter dated January 21, 2010, to Ecology

Dear Mr. Albright:

This letter provides another opportunity to express our appreciation of the support and guidance from EPA in various Ecology-led projects at the Hanford Site cleanup and remediation.

This letter is also Ecology's official response to address EPA's concerns on the closure document for the Nonradioactive Dangerous Waste Landfill (NRDWL) which has now been merged with the Solid Waste Landfill (SWL). Ecology has shared with EPA's representatives, Dave Bartus and Robin Paul, major changes made to the draft closure plan for the NRDWL/SWL project. This closure plan will meet Washington Administrative Code (WAC) 173-303 regulatory and permit requirements and protect human health and the environment.

1. **Regulatory Pathway Issue**
   The regulatory requirements for NRDWL were better understood than the requirements for SWL. Ecology directed United States Department of Energy (USDOE) to follow the WAC 173-350-400 for the SWL requirements, as recommended by Ecology's Solid Waste Program. This explains why USDOE changed from WAC 173-407-400 to WAC 173-350-400 for SWL. However, NRDWL and SWL are subject to corrective action pursuant to WAC 173-303-64620, as a result of past releases. Ecology decided to permit SWL together with NRDWL in accordance with the requirements of WAC 173-303 using the deferral option available in WAC 173-350 regulations. Although EPA "believes that it is essential that the SWL continue to be subject to Tri-Party Agreement (TPA) past-practice requirements to ensure full satisfaction of CERCLA and Hazardous Waste Management Act requirements", Ecology has elected to use the dangerous waste requirements of NRDWL for the closure of SWL. Ecology chose to streamline the permitting process for closure of the two contiguous landfills using:
   - The same remedy— the installation of Ecology approved engineered Evapotranspiration (ET) cover.
   - The same groundwater monitoring requirements in Chapter 173-303 WAC.
   - More stringent requirements of WAC 173-303 for closure of SWL due to documented releases of dangerous waste constituents into the vadose zone and the groundwater.

TSD
D-61

EPA expressed concerns about the TPA change request contained in Section 5.2 of "*200-SW-I Nonradioactive Landfills Group Operable Unit and 200-SW-2 Radioactive Landfills Group Operable Unit Remedial Investigation/Feasibility Study Work Plan*," DOE/RL2004-60, Revision 0, dated September, 2008. Ecology encouraged EPA in an email (attached) from Ecology's TPA manager, John Price, on April 26, 2010, to discuss this issue in-house for further resolution.

2. **Historic Releases Issues**

EPA raised concerns regarding inadequacies of basis for closure decisions for the sites. EPA expressed a concern that there was seemingly a lack of action on the document "*The Corrective Action Plan for the Hanford Site Solid Waste Landfill*," DOE/RL-94-143. The current activities to close NRDWL and SWL are based on thorough evaluations of not only historical and current technical data, but also on review of various other documentation and communication between USDOE and Ecology. Ecology directed USDOE to use a DQO process and a conceptual model instead of further characterization work outlined in the document cited in your letter (DOE/RL-94-143). Various volumes of data have been collected from monitoring the site between 1987 and 2010. Ecology considers these data to be more than adequate to make permit decisions to close the units.

Soil gas monitoring will continue during closure and post-closure of the units as detailed in the revised Closure Plan. This should address EPA's concern.

3. **Cover Design Issues**

Ecology acknowledges EPA's concerns with the ET cover performance. In order to address these concerns, Ecology held several technical workshops to evaluate the proposed conceptual cover design. The outcomes of the workshops provided significant changes of the proposed cover design. The changes include the following:

- Using the same cover thickness for both NRDWL and SWL.
    - 30% increase in thickness of the ET cover for the NRDWL.
    - 63% increase in thickness of the ET cover for the SWL
- Discussion and improvement on drainage and armoring of the cover edges.
- Adding performance measures used for the Hanford Prototype Barrier to the Closure Plan.

Ecology agrees with EPA that the Hydrologic Evaluation of Landfill Performance (HELP) Model results should not be presented as "absolute results". Text of the Closure Plan has been revised to reflect this, even though state regulations require use of the HELP model per WAC 173-350. However, a more accurate model,"UNSAT-H", will be used for a final engineering design.

The issue of subsidence, bio-intrusion, and other related issues have also been discussed and addressed in the revised Closure Plan. The revised Closure Plan indicates that geo-technology will be used for site evaluation to identify regions of potential subsidence and how to mitigate them.

4. **Cover Performance Monitoring**

Performance monitoring parameters have been added to the Closure Plan to meet Ecology's and EPA's concerns.

5. **Groundwater Monitoring Program**

The revised Closure Plan includes information about available release data for contaminants from the units. The issue of documentation and discussion of past releases has been resolved to Ecology's satisfaction. Ecology also reviewed additional data obtained from far area monitoring wells further down-gradient of NRDWL/SWL (see attached). This evaluation was initiated because of both EPA's and Ecology's concerns about potential vertical and lateral migration of contaminants past the existing points of compliance. The evaluation of the data satisfied Ecology's concerns and the results were shared with Dave Bartus. Moreover, construction of three additional down-gradient monitoring wells has been added in the Closure Plan and the Groundwater Monitoring Plan (DOE/RL-2010-28). The location of these wells is further from the existing point of compliance to allow better monitoring of contaminants.

Ecology elected to restrict groundwater monitoring specifically to NRDWL/SWL rather than defer to the PO-1-OU groundwater monitoring plan that is still being discussed in the context of global Hanford Site groundwater issues. Ecology understands that when the PO-1-OU groundwater monitoring plan is finalized, NRDWL/SWL groundwater monitoring network will become part of the Hanford sitewide monitoring network.

EPA also raised concerns about lack of metal constituents data in the interim status groundwater monitoring program. Data on metal constituents exist in various Groundwater Monitoring Reports such as *"Hanford Site Groundwater Monitoring for Fiscal Year 2008."* DOE/RL-2008-66 Rev.0. March 2009 and *"Quarterly RCRA Groundwater Monitoring Report."* SGW-41323, Rev 0, June 2009. Ecology reviewed and evaluated these data. A table showing an example of groundwater data for metals has been included in the Closure Plan and in the Groundwater Monitoring Plan.

6. **Other Comments**

EPA's other comments have been addressed in the revised draft of the Closure Plan.

Thank you again for the assistance that EPA continues to provide to Ecology on the Hanford Site Permit work. If you have any questions, please contact Deborah Singleton at 509-372-7923.

Sincerely,

Ron Skinnarland
Waste Management Section Manager
Nuclear Waste Program

Js/ao
Enclosures (2)

cc: see next page

cc:

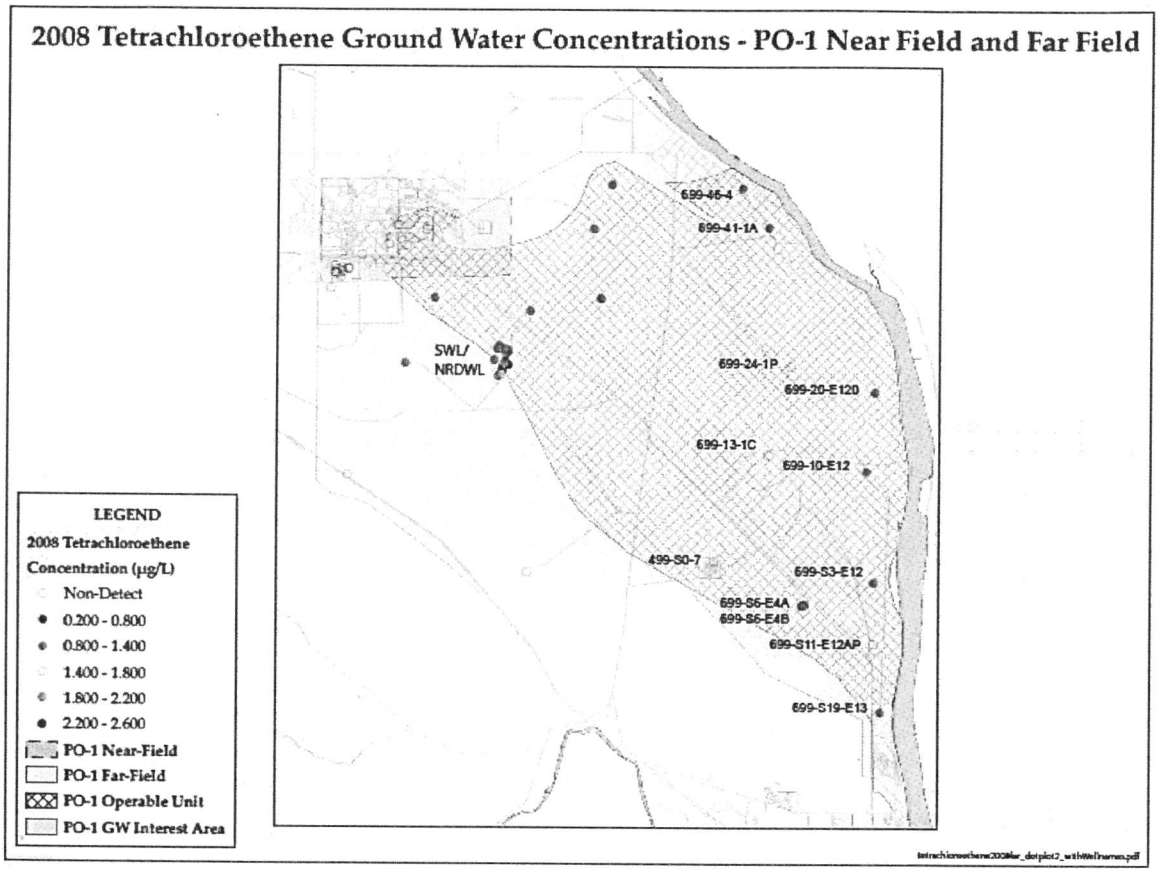
Dave Bartus, EPA
Dennis Faulk, EPA
Robin Paul, EPA
Kevin Leary, USDOE
Ronald Brunke, CHPRC
Stuart Harris, CTUIR
Gabriel Bohnee, NPT
Russell Jim, YN
Susan Leckband, HAB
Ken Niles, ODOE
Administrative Record
Environmental Portal

Enclosure 1

From: Price, John (ECY)
Sent: Monday, April 26, 2010 4:59 PM
To: 'cameron.craig@epa.gov'
Cc: Faulk.Dennis@epamail.epa.gov
Subject: Bartus email on: Solid Waste Landfill/Original Solid Waste Landfill/TPA questions

This seems like an internal EPA matter, if Dave Bartus has continuing concerns about pending changes to TPA Appendix C, even after the RA has signed off on the changes.
Can you or Dennis decide whether or not you need to resolve Dave's concern? If so, can you resolve this with him?
I think Ecology doesn't need to respond to Dave, and would suggest that to Ecology management and staff.

-----Original Message-----
From: Bartus.Dave@epamail.epa.gov [mailto:Bartus.Dave@epamail.epa.gov]
Sent: Monday, April 26, 2010 3:11 PM
To: Okemgbo, Asopuru (ECY)
Cc: Skinnarland, Ron (ECY); Price, John (ECY); Cameron.Craig@epamail.epa.gov; Boyd.Andrew@epamail.epa.gov
Subject: Solid Waste Landfill/Original Solid Waste Landfill/TPA questions

Enclosure 2

Far Area Wells Down-Gradient of NRDWL/SWL.