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Confederated Tribes and Bands
of the Yakama Nation ERWM

Established by the
Treaty of June 9, 1855

April 11, 2012

Dennis Faulk, Hanford Project Manager
U.S. Environmental Protection Agency
309 Bradley Blvd., Suite 115
Richland, WA 99352

Re:
[1] Review comments on the draft Remedial Investigation/Feasibility Study for the 100-KR-1, 100-KR-2 and 100-KR-4 Operable Units (DOE/RL-2010-97, Draft A) and Proposed Plan for the Remediation of the same Operable Units (DOE/RL-2011-82, Draft A). 0099842

[2] Review comments on the draft Remedial Investigation/Feasibility Study for the 300-FF-1, 300-FF-2, and 300-ff-5 Operable Units (DOE/RL-2010-99, Draft A) and Proposed Plan for the Remediation of the same Operable Units (DOE/RL-2011-47, Draft A) 0100568 & 0100555

[3] Review comments on the draft Remedial Investigation/Feasibility Study for the 200-UP-1 Groundwater Operable Units (DOE/RL-20009-122, Draft A) and Proposed Plan to Amend the 200-ZP-1Groundater Operable Unit (DOE/RL-2010-05, Draft A) 0090461 & 0090460

Dear Mr. Faulk:

The U.S. Environmental Protection Agency (EPA) anticipates issuing three Records of Decision (RODs) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) for the Hanford Site 100-K Reactor Area, 300 Area, and 200-UP-1 Operable Unit this year. The Confederated Tribes and Bands of the Yakama Nation appreciate the opportunity to review and provide comments on these documents.

The attached comments summarize our significant concerns. We have also attached a copy of our comments and communications which were provided to the EPA National Remedy Review Board Meeting March 27-29, 2012, on these same topics.

We look forward to discussing our concerns regarding current cleanup plans for Hanford with you further.

Sincerely,

Russell Jim
Yakama Nation ERWM Program Manager

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Cc:
Jane Hedges, Washington State Department of Ecology
Jonathan A Dowell, Assistant Manager for the Central Plateau, US Department of Energy
Ken Niles, Oregon Department of Energy
Stuart Harris, CTUIR
Gab Bohnee, Nez Perce
Amy Legare, Chairman, EPA National Remedy Review Board
Administrative Record

Attachments:

Attachment 1: YN Comments to the EPA National Remedy Review Board Meeting March 27-29, 2012, and Review comments on the (DOE/RL-2010-97, Draft A; DOE/RL-2011-82, Draft A;DOE/RL-2010-99, Draft ADOE/RL-2011-47, Draft A;DOE/RL-20009-122, Draft ADOE/RL-2010-05, Draft A.

Attachment 2: National Remedy Review Board Document: Legal Opinion; YN Treaty Rights at the Hanford Site.

Attachment 3: YN additional comments to the EPA National Remedy Review Board

Attachment 1:

March 26, 2011

Amy Legare, Chair
National Remedy Review Board (NRRB)
U.S. Environmental Protection Agency (EPA)
1200 Pennsylvania Avenue, NW
Mail Code 5204P
Washington, DC 20460

Dear Ms. Legare:

Thank you for the opportunity to submit comments on the current cleanup plans for the 100-K Reactor Area, 300 Area, and 200-UP-1 Operable Unit of the Hanford Site in anticipation of the three Records of Decision (RODs) expected to be issued this year under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

The Yakama Nation's compliance objectives for the cleanup and closure of the Hanford Site include the following:

1. Compliance with Yakama Nation Treaty Rights, including full access to cultural resources by the Yakama Nation and its members within its ceded land and aboriginal territory, including on the Hanford Site.
2. Protection of the health of Yakama Nation tribal members and the environment so that the Hanford Site and all its resources (including the Columbia River, its islands, other surface waters, geologic resources, groundwater, air, and biological resources such as plants, fish, and wildlife) are safe for all exposure scenarios and tribal uses.
3. Cleanup decisions that follow the CERCLA RI/FS process and requirements through finalization and approval of documents (including risk assessments and supporting secondary documents) prior to development of Proposed Plans for final RODs.
4. Cleanup decisions based on adequate site-specific characterization information, including the vadose zone and groundwater. There are areas of uncertainty within the groundwater modeling approach (STOMP-1D), and its application is inappropriate until the issues are resolved.
5. Cleanup actions that comply with all applicable or relevant and appropriate federal and state regulatory requirements.
6. Cleanup actions that are compatible with clean closure, including the high-level waste tanks. Cleanup actions that would preclude clean closure should not be implemented.
7. Cleanup actions that are complete, permanent, are based on proven technology for application at Hanford, and do not rely on long-term stewardship and institutional controls to address long-lived radionuclide and dangerous waste contamination at the Hanford site. Long-term stewardship and

institutional controls will not be effective for wastes that remain dangerous for hundreds or thousands of years.

8. Official recognition that Native Americans living near the Hanford site are the most vulnerable people to environmental contaminants, as underscored by EPA's Columbia River Fish Contaminant Survey.

Attached is a summary of technical issues related to the Hanford cleanup, which is limited to 10 pages as dictated by the letter dated February 13, 2012 from Dennis Faulk, EPA Region 10, to Harry Smiskin, Yakama Nation Chairman. Aside from the technical concerns presented in the attached issue paper, the Yakama Nation believes there are serious deficiencies in the Remedial Investigation/Feasibility Study (RI/FS) cleanup process that are documented by the EPA, Washington State Department of Ecology, and the Hanford Natural Resource Trustee Council.

Thank you for your consideration. I look forward to discussing the Yakama Nation's concerns and recommendations regarding Hanford cleanup with the NRRB.

Sincerely,

Russell Jim
Yakama Nation ERWM Program Manager

Attachment

cc: Vera Hernandez, Chair, Yakama Nation RHW Committee
Phillip Rigdon, Deputy Director, Yakama Nation Department of Natural Resources
Dennis McLerran, Regional Administrator, EPA Region 10
Ted Sturdevant, Director, Washington State Department of Ecology

Yakama Nation Technical Issues for Hanford Cleanup Decisions
EPA National Remedy Review Board Meeting
March 27-29, 2012

The U.S. Environmental Protection Agency (EPA) anticipates issuing three Records of Decision (RODs) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) for the Hanford Site 100-K Reactor Area, 300 Area, and 200-UP-1 Operable Unit this year. The Confederated Tribes and Bands of the Yakama Nation appreciates the opportunity to discuss concerns about Hanford cleanup with the EPA National Remedy Review Board, including this summary of technical issues and recommendations that are pertinent to the cleanup decisions being made for the three sites.

General Concerns

The Yakama Nation does not believe that current plans for Hanford cleanup are adequately protective of Tribal people or Treaty resources. Superfund cleanups must be protective of the environment and human health, including tribal people. The assessment of risk for the River Corridor (DOE, 2011a), for example, is incomplete and does not adequately assess either baseline risks or cumulative risks that a Yakama member would encounter on the Hanford Site, nor does it adequately assess potential risks to ecological receptors on which our people depend to sustain our health, livelihood, and culture. Critical issues related to the River Corridor, including the 100-K and 300 Areas, and Hanford in general are presented below:

1. **The proposed remedies do not fully comply with the Treaty of 1855 between the Yakama Nation and the United States of America.** The Treaty, which reserves specific rights and resources for the Yakama Nation, should be acknowledged as an ARAR or a "must comply" standard for cleanup decisions. This includes the right to practice in full subsistence activities in Yakama usual and accustomed use areas.
2. **The cleanup and restoration of the River Corridor 100 Areas within the Hanford Reach National Monument (HRNM) remains DOE's obligation.** Under the Antiquities Act of 1906, the Hanford Reach National Monument (HRNM) was created by Proclamation 7319 in 2000. The Proclamation lists the resources that are to be protected including: riparian, aquatic and upland shrub stepped habitats, native plant and animal species as well as archaeological, historic and sacred sites throughout the monument. While the majority of the HRNM is managed by USFWS, the river corridor lands underlying the Hanford reactors and operational areas are managed by DOE, the current land owner. The DOE-managed portions of the HRNM include the 100-K and 300 Areas addressed in the cleanup proposals. These lands contain high levels of contamination and significant cultural resources. It is recognized in the Proclamation that DOE has the responsibility to clean up hazardous substances and the restoration of natural resources. The Proclamation further states, "As Department of Energy and US Fish and Wildlife Service determine that lands within the monument managed by the Department of Energy become suitable for management by the US Fish and Wildlife Service, the US Fish and Wildlife Service will assume management by agreement with the Department of Energy." Clearly it

was the intent of the President that the HRNM land would be cleaned, restored and then managed by the USFWS. The entire HRNM would then be managed according to the mission of the USFWS guided by the HRNM Comprehensive Conservation Plan (CCP), which states a primary purpose of, "Protect and restore biological, cultural, geological and paleontological resources." Areas in the River Corridor 100 Areas are some of the most contaminated, and it remains the obligation of DOE to clean and restore these areas within the HRNM and areas that could affect the HRNM in consultation with the Department of Interior. Anything other than complete cleanup and restoration of the HRNM would be in direct conflict with the Antiquities Act, Proclamation 7319, and the HRNM CCP.

3. **It seems that DOE is short-cutting the CERCLA cleanup process at Hanford in order to meet TPA milestones and save money.** The proposed plans deal with radiological and chemical contaminants that potentially pose risks for very long periods of time. The proposals are to leave much of the toxic wastes at the site, with the potential for long-term impacts to the environment and human health. The EPA as a regulator should ensure that DOE follows the CERCLA process and adequately completes the risk assessments that support cleanup decisions for the Hanford Site.
4. **Cleanup decisions are based on insufficient characterization data.** DOE has not conducted adequate site characterization with sufficient sample coverage of geographic areas, potential sources, media types, and transport mechanisms to ensure data of sufficient quality before estimating risk and making cleanup decisions. To support coherent and protective cleanup decisions, Superfund calls for fully characterizing the nature and extent of contamination. For Hanford, this should include characterizing all waste sites (regardless of remedial stage), the areas in between these sites, and the vadose zone. More complete characterization of environmental conditions is required to allow a more spatially robust evaluation and to reduce the current level of uncertainty.
5. **There are areas of uncertainty within the groundwater modeling approach (STOMP-1D), and its application is inappropriate until all issues are resolved.** The graded approach to evaluating groundwater protection and STOMP-1D modeling has many uncertainties (e.g., what criteria will be used to assess the validity of the Preliminary Remediation Goals [PRGs] as they apply to site conditions). We believe *The Technical Guidance Document for "Tank Closure Environmental Impact Statement" Vadose Zone and Groundwater Revised Analyses* should be revised and corrected before it is used to define initial values for model parameterization (e.g., revising the incorrect Kd value of 0.6 used for uranium). Application of this model for making cleanup decisions is inappropriate until these issues are resolved.
6. **River Corridor cleanup does not consider potential contaminant migration from the Central Plateau.** Contamination in the Central Plateau is currently migrating to groundwater through the highly complex vadose zone. In the 200-UP-1 Remedial Action Objective (RAO) #3, DOE acknowledges the need to *protect the Columbia River and its ecological resources from degradation and unacceptable impact caused by contaminants migrating from 200-UP-1*. This contaminated groundwater from the Central Plateau is being transported to the River Corridor and has already reached the Columbia River; this will continue far into the future, as shown by DOE's own modeling. DOE should consider contaminant migration in groundwater over time

from the Central Plateau to the River Corridor and ultimately the Columbia River, including groundwater flow rates, plume mixing, and exposure pathways and incorporate this information into the decision documents for the River Corridor.

7. **Restricted land use and institutional controls (risk management actions) form a basis for the risk assessment.** DOE's own guidance acknowledges the EPA directive that institutional controls cannot be factored into a baseline risk assessment. By definition, baseline risks are risks that would exist if no remediation or institutional controls are applied at a site; this information then provides a foundation for determining the most appropriate remedial options. DOE should not assume restrictions and controls when assessing risk on which cleanup decisions are made.
8. **The total risks to tribal residents have not been assessed.** DOE fails to accurately and completely identify all sources of contamination, transport mechanisms through all environmental media, and potential risks to tribal members based on our traditional subsistence lifestyle. Inadequate data are used to characterize exposure from groundwater and fish ingestion, for example, both of which are critical exposure pathways. A cumulative risk assessment should be conducted for a Yakama tribal residential scenario, and the results should be applied to cleanup decisions.
9. **Linkages, access, and exposure to the Columbia River in conjunction with the River Corridor are not considered.** DOE's definition of the geographic scope of the River Corridor extends only to the near shore of the Columbia River and does not include the river itself. Arbitrarily segregating the riparian shoreline of a river from the river itself, which are connected hydraulically, does not make sense for assessing potential risk. It is most likely that a person living, using, or recreating at Hanford would encounter the river in addition to the riparian and upland habitats. DOE must conduct the clean up based upon use scenarios that include access to both the Columbia River from the River Corridor, and consider all exposure pathways related to river water, sediments, and aquatic organisms.
10. **Important sample locations, contaminants, and concentration data are excluded without adequate justification.** Characterization efforts and risk assessments that drive cleanup decisions have excluded data results, contaminants, waste sites, and non-operational areas without adequate justification and based upon generalizations (e.g., contaminants found in less one-third of waste sites are not retained as contaminants of concern). DOE should not exclude any contaminants or locations based upon generalized assumptions without adequate evaluation of the data and clear justification.
11. **Site data are compared to background (reference) samples that were also collected on the Hanford Site and potentially impacted by Hanford contaminants.** DOE considers samples collected either onsite or proximal to Hanford as background and reference samples; yet, these locations cannot confidently be deemed uninfluenced by releases from Hanford because of airborne contamination and/or movement through the environment and food web. These locations are not appropriate as background for comparison to site data. Appropriate locations should be selected that are not on the Hanford site and assuredly not influenced by Hanford contaminants.
12. **Only incremental risks above background levels were considered in assessing baseline risk.** All contaminant exposures at the site contribute to baseline risk and

should be included in a risk assessment. However, DOE is making risk management decisions prior to assessing risk by excluding certain "background" exposures. DOE should consider all contaminants contributing to risk at the site, including natural and background concentrations, as part of total baseline risk.

13. **CERCLA and MTCA limits are not always applied when assessing risk.** The radiation dose limit of 15 millirem per year (mrem/yr) equates to a lifetime cancer risk that is 3 times above the maximum allowable value (1 in 10,000) under the federal Superfund program (and even more when other EPA risk coefficients are considered in the conversion). Although Washington State's Model Toxics Control Act (MTCA) applies to all hazardous substances, DOE interprets MTCA to only regulate chemicals, excluding Hanford's extensive radionuclide contamination. Superfund and MTCA risk thresholds should be adopted for chemicals and radionuclides combined, and for radiation should equate to a more protective level of 5 mrem/yr or less radiation dose limit.
14. **Toxic wastes being excavated as part of cleanup are being disposed of on-site.** Disposal of the much of the contaminated wastes excavated from the Hanford facilities is at the mixed-low-level radioactive burial grounds in the Central Plateau known as Environmental Restoration Disposal Facility (ERDF). An issue is how some of these wastes currently or proposed for disposal meet the waste acceptance limits for ERDF. It is our understanding that some of the wastes from the River Corridor are diluted by mixing contaminated waste with less contaminated soils prior to disposal at ERDF. Another issue is the total inventory of transuranic elements in the ERDF, as the facility has a design life that is far shorter than the half-lives of transuranic elements. This poses a concern about the amount of transuranics that may be released into the soil from the facility in the future. An evaluation should be performed on the total waste inventory in the ERDF (to date), focusing on long-lived radionuclides. Such an evaluation should support a determination of future impacts and whether disposal at ERDF is exceeding risk criteria.

100-K Reactor Area

Overall, the Proposed Plan for cleanup of the 100-K Reactor Area and the associated Remedial Investigation / Feasibility Study (RI/FS) Report and Proposed Plan (DOE/RL-2011-82, Draft A and DOE/RL-2010-97, Draft A) do not comprise an adequate cleanup of the 100-K Area. DOE developed Preliminary Remediation Goals (PRGs) that are generally very high, and which would allow significant concentrations of contaminants to remain in place. These cleanup goals are based on land use scenarios identified for uses over a limited period of time in DOE's Comprehensive Land Use Plan Environmental Impact Statement (DOE, 1999), which assume that there are no complete exposure pathways to residual contamination in the deep vadose zone or groundwater plumes. The preferred alternative for treating contaminated groundwater in the 100-K Area focuses on hexavalent chromium and carbon-14. The proposal is to continue to operate an existing pump-and-treat system at the 100-K Area and augmenting it with additional bioremediation or air stripping technology. These technologies have not been demonstrated to be effective in treating the types of contamination present in the 100-K groundwater, nor in the 100-D Area. DOE theorized that the 100-D Area system did not

work because continuing sources of hexavalent chromium contamination in the vadose zone were introducing new contamination to groundwater; DOE assumed that no continuing sources exist in the 100-K Area. This assumption is not adequately justified with site data to be considered the base case for modeling purposes. Key comments related to the 100-K Area cleanup plan include:

1. **The nature and extent of contamination in the 100-K Reactor Area has not been adequately characterized and documented.** EPA and Ecology each submitted numerous comments expressing serious concern regarding DOE's methodology for characterizing contamination in the 100-K Reactor Area . The Yakama Nation agrees that DOE has not adequately, or realistically, evaluated the nature and extent of contamination at 100-K. For example, only 16 out of 165 waste sites were evaluated. Insufficient data exist to fully characterize the extent of soil and vadose zone contamination that has resulted from disposal of very large volumes of wastewater contaminated with hexavalent chromium and radionuclides. As stated in Ecology comments (page 3), the RI/FS "does not provide adequate information on how the vast extent of soil/deep vadose zone contamination created by billions of gallons of contaminated effluent discharges creating a mound of ~33 ft high and the overland flows covering a vast area around the K Reactors containing both mobile (e.g. chromium) and highly adsorptive contaminants like Sr-90 was characterized."
2. **Contaminants of potential concern (COPC) are being eliminated from consideration prematurely.** The decision to focus on only a selected list of contaminants (identified in Chapter 4 of the RI/FS) in soil and groundwater significantly reduces the cumulative risk estimated for the 100-K Area. Ecology and EPA comments also reflect the concern that several analytes were being removed from the DOE-approved list of COPCs either prematurely, or based on criteria that were not appropriate. For example, radionuclide contaminants associated with the KE fuel storage basin (such as cesium, plutonium, uranium, and technetium) were not identified as COPCs, and non-radionuclide contaminants associated with the area (such as tetrachloroethylene) were not always included. Also, screening of contaminants may have resulted in underestimating total risk since each contaminant contributes to the cumulative risk even if the individual contaminants do not exceed screening levels used.
3. **The modeling approach used by DOE to evaluate remedy performance contains serious flaws and unrealistic or unduly favorable assumptions.** EPA and Ecology each submitted comments identifying deficiencies in the modeling performed by DOE to support the Proposed Plan's preferred alternative for the 100-K Reactor Area. The Yakama Nation agrees that partition coefficients used in the model were frequently not appropriate, not correct, or not justified; partition coefficients were not consistent between sections of the RI/FS Report, and contaminants were sometimes identified as both highly mobile and relatively immobile; stating that contaminant partition coefficients are "constant in time and space" is known to be inaccurate; recharge rates used in the vadose transport modeling were not justified or were not appropriate; hydraulic transport parameters were not well justified or supported with field or lab data; assuming contamination to be uniform in the subsurface is not supported by site data; modeling did not meet Washington State requirements stated

in WAC 173-340-747 for deriving soil concentrations for groundwater protection; and modeling parameters were not consistent between programs (RESRAD, STOMP).

4. **Modeling to support PRG development was only performed for a limited time period.** Modeling used to help develop PRGs was only performed for a period of 3,000 years, which is not adequate considering the long half-lives of some Hanford radionuclide contaminants. The limitation on the calculated time interval was arbitrarily made to save time and "resource constraints." Because many contaminants did not reach peak concentrations within the modeled time period, many of the contaminants with higher partition coefficients had their peak concentrations "scaled" off of other contaminants. This approach introduces significant uncertainty into the calculation of the groundwater and surface water concentrations used to set PRGs.
5. **Groundwater and surface water modeling to support PRG development unrealistically assumes completely clean backfill.** DOE acknowledged that backfill sediments are "known to have been contacted by contaminated fluids" in some locations . Given the extensive history of contamination at the Hanford Site, this assumption should be supported with *in-situ* sampling of backfill. Otherwise, using the blanket assumption that all backfill is completely clean may constitute an arbitrary reduction in the contamination source term.
6. **Recharge and infiltration scenarios used in developing soil screening levels (SSLs) and PRGs for the River Corridor are not consistent.** SSLs were calculated using the irrigation recharge scenario, which is a conservative approach based on the greatest volume of water passing though the contaminated soil; however, it is unclear how the SSLs were applied. PRGs were actually applied in the 100-K RI/FS Report, and these were calculated using a "base case" (less) recharge scenario. The PRGs are significantly higher (less protective) than those calculated using the irrigation recharge scenario since much less water passes through the contaminated soil interval. EPA and Ecology each criticized the infiltration rates used to develop PRGs, referring to them as unrealistic. They also criticized DOE's assumption of mature shrub steppe habitat becoming quickly established (effectively reducing total infiltration) over remediated waste sites and in the 100-K Operational Area. Both agencies submitted additional comments suggesting that DOE has underestimated how much water will infiltrate from the surface through remediated waste sites and contaminated soil in the vadose zone, resulting in perpetuation of the groundwater plumes that exceed drinking water standards.
7. **DOE maintains that there are no complete exposure pathways to the deep vadose zone or groundwater**. The preferred alternative identified in the Proposed Plan meets remedial action objectives set by the DOE that are based on land uses identified in the Comprehensive Land Use Plan EIS, which include conservation and mining for government purposes (DOE, 1999). Based on these land use scenarios, DOE maintains that there are no complete exposure pathways to residual contamination in the 100-K Area or the River Corridor. EPA commented that the DOE's proposed land uses do not comply with the unrestricted use and casual use scenarios that were agreed upon by the Tri-Parties. It is also important to note that traditional cultural activities and other land uses that are not acknowledged by DOE would result in exposures that significantly exceed those the DOE has elected to

estimate. Also, DOE has not resolved the contradiction between its stated land use that includes mining and the presumption that no exposure pathways exist to contamination in the deep vadose zone or groundwater. Ecology notes in their comment (page 10) "that exposure to groundwater rads occurs through multiple pathways (not limited to drinking water) which should be evaluated against the NCP range."

8. **The use of institutional controls as part of proposed remedial alternatives does not comply with unrestricted access to the site or Yakama Nation Treaty Rights.** DOE's use of institutional controls as a means of preventing, *without fail*, exposure to residual contamination in the subsurface and groundwater remains both troubling and ultimately unproven. Regarding the use of institutional controls at DOE waste sites, the National Research Council pointed out: "While there is typically a tacit recognition that engineered barriers and waste stabilization approaches have limited periods of effectiveness, these technologies are frequently employed with inadequate understanding of, or attention to, the factors that are critical to their success. These include the need for well-conceived plans for performance monitoring that identify and correct potential failures and plans for maintenance and repair, including possible total system replacement." (NRC, 2000). This level of planning, both technical and financial, does not appear to have been included in the cleanup planning. Aside from a general statement that waste sites near the reactor structures would be covered with surface barriers, no detailed information is provided regarding the types of institutional controls that would be implemented, such as fencing, regulatory controls, surface barriers, and supporting funding.
9. **Assessment of potential risk to human health and cultural resources are not considered for Tribal members at 100-K.** Supplemental risk evaluations conducted as part of the 100-K RI/FS Report and Proposed Plan do not consider a Tribal Exposure Scenario, do not recognized the Hanford Site as "open and unclaimed," and do not include provisions to evaluate exposure to contamination through tribal subsistence and cultural activities. Even the non-Tribal Exposure Scenarios presented in the RI/FS Report are limited and unrealistic. As noted by Ecology, the resident Ranger, for example, is assumed to be "unaccompanied," implying no family (i.e., no child would be allowed at the residence), which is impractical for hiring purposes by the U.S. Fish and Wildlife Service. Additionally, there is very little discussion of cultural resources and the impacts remediation may have on these important tribal resources. The RI/FS Report notes that archaeological sites have been identified that are associated with villages, ceremonial sites, harvesting areas, sacred areas, and other traditional activities. However, there is no discussion of how remedial activities will impact these sites or what measures will be taken to ensure adequate protection of culturally sensitive locations.
10. **The preferred alternative does not treat several radionuclides known to exceed groundwater screening levels.** The preferred alternative for the 100-K Area only proposes to treat a single radionuclide (carbon-14) in groundwater. The remaining radionuclides in groundwater at the site are passed through the pump-and-treat system and re-injected into the unconfined aquifer, thus effectively spreading and diluting the constituents in groundwater to meet regulatory standards. While adequate dilution may ultimately reduce concentrations of strontium-90 and tritium to below drinking

water standards, this is a poor primary approach to employ in an area with the potential for significant additional subsurface contamination by these same radionuclides as yet unidentified.

11. **The preferred alternative relies on remedial technologies that are either unproven, or have been shown not to perform well.** The Proposed Plan indicates that "design testing will be required for biological treatment" that will be employed to treat groundwater in addition to the existing pump-and-treat system . The DOE goes on to acknowledge that "although biological treatment of hexavalent chromium has been proven, implementation at the Hanford Site would likely require at least laboratory scale treatability testing." A similar supporting statement for the proposed carbon-14 treatment states that "while air stripping is a routinely used treatment technology, using it for carbon-14 is not routine" and that deployment of such a system would also require laboratory scale testing before any (possible) treatment could be pursued. These statements acknowledge that evaluation of the remedial technologies that make up the preferred alternative have not been evaluated according to many of the CERCLA Evaluation Criteria, such as compliance with ARARs; long and short term effectiveness; reduction of toxicity, mobility, and volume; implementability, and cost. DOE also does not include in a discussion of handling the various difficulties and failures that have been previously encountered with the technologies identified in the preferred alternative, such as failures associated with the 100-N permeable reaction barrier and pump-and-treat system, *in-situ* apatite treatment of uranium in the 300 Area vadose zone and groundwater, and the ineffective pump-and-treat system at 100-D "because of continuing sources in the vadose zone or aquifer" (DOE, 2009). Data gaps in the nature and extent of contamination at the 100-K Area and the relatively high probability that ongoing sources to groundwater remain unidentified in the vadose zone indicate that pump-and-treat is an inappropriate technology, and likely ineffective for long-term groundwater cleanup.
12. **The selection of remedy in the Proposed Plan (PP) doesn't appear to be supported by a complete analysis of feasible alternatives.** We agree with EPA's comment (number 1) that the proposal "seems to fall short of the purpose and intent of a PP under the NCP and does not follow EPA guidance. The proposed plan must describe an analysis of the feasible alternatives and clearly state why the proposed remedy is the most appropriate for the operable unit, based on written EPA guidance and criteria."
13. **The reactor cores and the contaminated orchard lands should be addressed in the proposed remedy.** As stated in EPA (comment 4 on the RI/FS), "if this RI/FS and PP are for a final ROD, the reactor path and decision should be evaluated. ...The FS/PP needs to develop and evaluate alternatives for the waste sites near the reactor as some of them appear to be impacting groundwater. Deferring cleanup of these wastes until the reactor is removed is not acceptable."

<u>300 Area</u>

Overall, the Proposed Plan for cleanup of the 300 Area and the associated RI/FS Report (DOE/RL-2011-47, Draft A and DOE/RL-2010-99, Draft A) do not support an adequate

cleanup of the 300 Area. The preferred remedial alternative for the protection of groundwater relies on the application of polyphosphate solution to deeper zones of uranium contamination. Polyphosphate remediation has been previously attempted in the 300 Area and has proven to be both problematic and ineffective. In the event that the polyphosphate application does not reduce the mobility of uranium in the deep subsurface, the proposed alternative specifies that no additional treatment will be applied. Based on modeling, DOE believes that monitored natural attenuation of the groundwater plume will achieve regulatory compliance within 38 (but are publically acknowledging it could take up to100) years. The proposal is that the entire site be restricted with institutional controls to limit exposure to residual contamination. Key comments related to the 300 Area cleanup plan include:

1. **Additional characterization of the Operable Units is needed.** Eleven new wells were drilled as part of the characterization effort performed for the 300 Area RI/FS. However, characterization efforts were focused on only 5 identified waste sites (North Process Pond, South Process Pond, Process Trenches, 307 Disposal Trenches, and 307 Retention Basins). Of the 11 wells drilled, 7 were focused on further refining already-identified groundwater contamination. Multiple instances of previously unidentified contamination being discovered in the 300 Area indicate that full characterization of the nature and extent of contamination in the 300 Area is far from complete.[1] It is not possible to identify the remedial actions that will be necessary to completely remediate the site.
2. **Several COPCs have been inappropriately eliminated from consideration for remedial actions.** Groundwater contamination constituents in the 300 Area include gross alpha activity, nitrate, trichloroethene (TCE), cis-1,2-dichloroethene (DCE), and hexavalent chromium. All of these contaminants have been detected at concentrations that exceed groundwater regulatory standards. The Proposed Plan has eliminated all of these constituents from the final list of contaminants of concern based on criteria that they are associated with other sources, which is not logical. The rationale, for example, does not demonstrate that the contaminants are not toxic, do not constitute a risk to exposed receptors, or are not in violation of regulatory standards. Removal of contaminants of potential concern on the basis that the source of the contamination has not been located, or is not in the decision unit addressed by the Proposed Plan, is contrary to the purpose of the plan, which is to present options for cleaning up soil and groundwater.
3. **No PRGs to protect groundwater and surface water have been set for uranium in the vadose zone.** The PRGs in the Proposed Plan are used to "assess the effectiveness of the selected remedial alternatives to meet the remedial action objectives during the Feasibility Study process". By not providing a PRG value for uranium in the vadose zone, DOE has effectively eliminated any standard by which remediation activities can be judged. The inability to evaluate the remedial action's performance following implementation is not acceptable. Where PRGs were calculated, infiltration scenarios used in PRG development are not acceptable (similar to 100-K).

[1] For example, the discovery of cesium-137 and strontium-90 contamination below the 324 building and recent addition of the uranium plume from the 618-7 burial ground.

4. **The preferred alternative relies on an unproven technology.** The preferred alternative relies on polyphosphate uranium sequestration, which has not been demonstrated to be effective, has numerous technical problems, and has previously not worked in the 300 Area under similar circumstances. Several problems associated with this technology have been previously identified during field trials in the 300 Area, including problems placing the reactive solution in contact with contaminated aquifer sediments due to high groundwater velocities; dispersion of reactive agents in groundwater rendering them ineffective to treat contamination in aquifer sediments; incompatibility with 300 Area aquifer geochemistry; and insufficient fine grained material in the Hanford Formation to retain and initiate precipitation of uranyl-phosphate mineral phases. PNNL has stated that "the ability to maintain low uranium concentration in the 300 Area unconfined aquifer over long periods of time using phosphate treatment of the saturated zone [appears] to be limited" (Vermeul et al., 2009). It is critical that the treatment identified in the preferred alternative be demonstrated to work, or include provisions to verify treatment has occurred as planned.
5. **Evaluation of remedial alternatives against balancing criteria is not reasonable, credible, or acceptable.** The problems previously identified with the preferred alternative treatment to protect groundwater are generally dismissed by the Proposed Plan with the statement "previous tests performed in the vadose zone and [periodically rewetted zone] were promising, but did not positively demonstrate the viability of this technology for large area application". This statement implicitly confirms that the polyphosphate treatment identified has not been evaluated according to the applicable CERCLA balancing criteria, which require the selected treatment's *performance at the site* be compared against other alternative's performance at the site. The rating of remedial alternatives against balancing criteria that has been performed does not reflect an honest and unbiased evaluation. The final proposal should include a complete analysis of feasible alternatives.
6. **The preferred alternative incorporates treatments rated by DOE to perform poorly against balancing criteria.** The preferred alternative includes a provision to implement the treatments identified in Alternative 2 in case the identified polyphosphate treatment is unsuccessful. The remediation to protect groundwater specified in Alternative 2 *is to take no action*. The performance of Alternative 2 evaluated against the balancing criteria includes "poor" ratings in both reduction of toxicity, mobility, or volume and short-term effectiveness, and is rated to perform only "moderately" for long term performance. Finally, the reliance on monitored natural attenuation to remediate groundwater in the 300 Area is the same remedial action selected as that selected in the 1992 interim ROD for the 300-FF-5 Operable Unit, which has failed to perform as intended (EPA, 1996).
7. **Groundwater modeling performed in support of remedial alternative evaluation is deficient.** The preferred alternative includes a provision for no remedial action to be taken to remediate the deep vadose zone. This is considered acceptable by the DOE based on groundwater fate and transport modeling results calculated to support evaluation of the remedial actions. Several significant deficiencies have been identified in the model and in DOE's reporting of model results (DOE, 2011d). Deficiencies include: 1) model hydrogeologic parameters were set so that the

effective porosity of the Hanford Formation is lower than that in the Ringold Formation, which contradicts DOE's previous description, 2) modeled flow paths do not reflect actual flow paths taken by hyporheic water in response to changes in river stage, 3) the modeled outcome of the equilibrium sorption model achieves a steady-state concentration in a different time frame than the kinetic sorption model; furthermore the DOE does not address the results for the other 3 wells modeled, none of which follow the behavior of the first well.[2]

8. **Many additional simplifying assumptions have been incorporated into the model that introduce uncertainty.** Simplified model assumptions include: 1) significant simplification of local geology that does not account for local preferential flow paths, changes in hydraulic conductivity, changes in fine grained fraction, and other lithologic heterogeneity; 2) assumed hydrologic boundary conditions in the past and future; 3) simplified calculation of partition coefficients that may not reflect actual uranium behavior, simplified hydrologic regimes[3] in the Columbia River and restricted flow paths for hyporheic water and groundwater, simplified, and assumed initial distributions of uranium (e.g., assigning values derived from data at one of two depths, and extrapolating between data points); and 4) assumed sorption/desorption behavior of uranium under dynamic flow conditions. Furthermore, the modeled attenuation of the groundwater plume overlooks the problem that all the treated contamination remains in place, and may become remobilized in the future due to changes in environmental conditions that include groundwater chemistry, groundwater elevations, or other factors[4]. DOE does not address this problem in the discussion of *in situ* remediation, but it should be incorporated into the evaluation of CERCLA balancing criteria. The most definitive and prudent approach to permanently remediating the 300 Area vadose zone is to *remove the source material.*
9. **Exposure pathways to contaminated media have been documented to be complete.** Both the Proposed Plan and the RI/FS assert that there are "no complete exposure pathways for risk to human populations" based on the formally designated land use and existing institutional controls. However, this statement is contradicted by DOE's own description of the 300 Area as the "site of potential exposure of contaminants carried by groundwater include the riverbed substrate, and riverbank springs that appear during periods of low stage." The seeps are monitored by the DOE's Public Safety and Resource Protection Program.
10. **The selection of remedy seems to be focused on future industrial use of the lands and least cost rather than a complete analysis of feasible alternatives.**

200-UP-1 Operable Unit

The Yakama Nation has significant concerns regarding the Proposed Plan and associated RI/FS for cleanup of the 200-UP-1 Groundwater Operable Unit (DOE/RL-

[2] Well 399-1-17A does not drop below the federal maximum contaminant level for as long as 160 years from the present. Two other wells (399-1-7, 399-2-2), also had at least one model run that did not achieve compliance within the DOE's stated 38 years from present.

[3] The hydrologic regime used for the entire model domain consists of a 2-year data cycle repeated multiple times.

[4] Because the DOE has not proposed a verification program for the vadose treatment there is no way of knowing how resilient the treated strata are to changes in environmental variables.

2010-05, Draft A and DOE/RL-20009-122, Draft A) which is located beneath the 200 West Area in the Central Plateau. The groundwater contamination associated with the OU has resulted largely from operations and process liquid waste disposal practices associated with U Plant, S Plant (Reduction-Oxidation [REDOX] Plant), the 241-S-SX Single-Shell Tank Farms, and 241-U Tank Farm. Liquid wastes generated in the U Plant and S Plant were routinely discharged to the ground through engineered discharge structures and surface impoundments including cribs, French drains, reverse wells, ditches, and ponds. A number of the tanks in the S, SX and U Tank Farms have leaked and are suspected or known contributors to vadose zone contamination. The Yakama Nation concerns with the cleanup proposal for the 200-UP-1 OU are supported by agency comments (EPA, 2011a and Ecology, 2011a) and include, but are not limited to, the following:

1. **Key receptor groups and exposure pathways were not evaluated.** Potential risks to many important human receptors groups, such as those represented in the Tribal scenarios, were not properly assessed to make cleanup decisions. Groundwater irrigation and certain consumption pathways were not evaluated, and adequate rational was not provided. For example, child and adult external exposure to radionuclides in groundwater (steam and condensate), as well as dermal contact, should be evaluated. In addition, a proper ecological risk assessment was not performed. For example, terrestrial biota and other ecological receptors will likely be impacted if groundwater contaminants migrate to the Columbia River or contaminants are transported to the surface via irrigation. Ecology requested these potential receptors and pathways be addressed.
2. **Calculations of future groundwater concentrations were estimated assuming a pre-selected remedy.** Estimating future groundwater concentrations should include modeling of a larger list of contaminants, and should evaluate more than the pre-selected pump-and-treat remedy.
3. **DOE did not address certain zones of groundwater contamination or sources remaining in the 200 West Area vadose zone for purposes of mitigating future impacts.** As Ecology noted in their comments, there is not a plan as to how these remaining sources, which will continue to contaminate the groundwater, will be remediated. Far-field well area contamination (Chromium in the south & Nitrate to the North) will not have a complete remedy. How will the remedy for groundwater meet the goal without addressing future impacts from sources in the vadose zone?
4. **Contaminant concentrations were not evaluated against the most restrictive ARARs or were compared against incorrect risk values.**
5. **The cleanup does not address all of the contaminants of concern.** Screening for COPCs should have considered the contaminants in the source units, used appropriate screening levels, relied on adequate sample sizes, and retained contaminants that pose more than 1% of the risk. For example, that 21 contaminants were eliminated based on less than 10 samples is considered unacceptable. Ecology acknowledged these shortcomings in their comments. For example, as EPA also commented that hexavalent chromium and tetrachloroethene should be added to the COC list as concentrations are greater than the state groundwater cleanup level.

6. **The percentage of risk contribution or hazard index values for all COPCs were not provided.** DOE needs to retain all contaminants that contributed greater than 1% of the risk or hazard. Additionally, the 95% Upper Confidence Level (UCL) should be reported, as additional contaminants may be added on the basis of the 95% UCL as a line of evidence for selecting COPCs (refer to EPA comments).
7. **DOE did not estimate risk from potential exposure to all COPCs.** DOE stated that "a risk evaluation is not conducted for final COPCs that are radionuclides." This results in an incomplete assessment. DOE needs to apply all data to accurate risk equations, providing all of the parameters such as slope factors, reference doses, and consumptions rates. DOE should not use MTCA Equation 720-2 for radionuclides. There were also discrepancies in the application of Drinking Water Standards (DWS) or Maximum Concentration Levels (MCLs) to identify exceedances or non-exceedances using MTCA Method B.
8. **The remedy for the groundwater must be comprehensive in order to meet drinking water standards (DWS) and to protect future impacts to the Columbia River.** However, the proposed cleanup fails to commit resources [e.g. funding] to develop a treatment technology for I-129 (see EPA comment) and provides no timeframe for the remediation of I-129 in the groundwater (see Ecology comment). Performance standards that the pump-and-treat system should reach prior to termination of the treatment are not specified (for technetium-99 and uranium, for example), and details on the contaminant treatment methods are not provided (see Ecology comments). Monitored natural attenuation (MNA) has not been demonstrated as a remedy for nitrate (Ecology comment), not enough information is provided to support the proposed remedial action for nitrate (EPA comment), for which the cleanup level should be the DWS 10,000 ug/L (see EPA comments).

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Attachment 2:

National Remedy Review Board Document: Legal Opinion; YN Treaty Rights at the Hanford Site.

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OF
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February 13, 2012

Marlene Zichlinsky, Attorney
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Dear Ms. Zichlinsky:

It has come to my attention that you telephonically attended the January 19 meeting of the Hanford Natural Resources Trustee Council (HNRTC), and that you provided your legal opinion regarding whether the Yakama Nation still retains treaty reserved rights to hunt and gather foods on lands owned by the U.S. Department of Energy (DOE) at the Hanford Site. According to others who were at the meeting you told the Council that, when the United States withdrew public lands for Hanford, any treaty rights to those lands were extinguished. This opinion was apparently given in the context of whether any natural resources injured by releases of hazardous substances include those which are utilized by the Yakama Nation pursuant to hunting and gathering rights reserved in the Treaty of 1855. Any such resources lost to the tribe would be compensable in damages under § 107(f) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). I would like to take the opportunity to provide the Yakama Nation's legal position on this issue for the record so that there is no doubt where we stand.

As you know, only Congress may abrogate rights reserved in Indian treaties, and only with clear and explicit language, either within the statute itself or in its legislative history. *United States* v. *Dion*, 476 U.S. 734, 739-740 (1986). In *Dion*, the U.S. Supreme Court ruled that the standard for abrogation is "clear evidence that Congress actually considered the conflict between its intended action on the one hand and Indian treaty rights on the other, and chose to resolve that conflict by abrogating the treaty."

Id. at 740; see also *Minnesota v. Mille Lacs Band of Chippewa Indians*, 526 U.S. 172 (1999) (no "clear evidence" of abrogation in state enabling act). The Court examined the express language of the Bald and Golden Eagle Protection Act (BGEPA), as well as its legislative history, and determined that Congress "believed that it was abrogating the rights of Indians to take eagles." *Id.* at 743. Critical to the analysis in *Dion* was the fact that the legislative history contained extensive discussions of Indian hunting of eagles and their importance to tribes.

In contrast with the BGEPA, there is absolutely no evidence in any of the federal statutes authorizing the establishment of the Hanford Site that Congress ever intended to abrogate the treaty hunting or gathering rights of the Yakama Nation. Federal acquisition of the land which now comprises Hanford was originally authorized by Title II of the Second War Powers Act of 1942, Pub. L. 77-507 (56 Stat. 176) (Mar. 27, 1942). Nothing in the plain language of that statute evinces any intent to abrogate Indian hunting rights, and they are not discussed in the legislative history. 56 Stat. at 177; see also S. Rep. No. 77-989 and H.R. Rep. 77-1735.

Since this original acquisition, none of the statutes providing the government authority to administer the Hanford Site have ever acknowledged Yakama treaty rights despite explicit language regarding compensation for land acquisitions. The Second War Powers Act expired on March 31, 1947. 50 U.S.C. Appx. § 645. By that time Hanford had been transferred from the Manhattan Project to the Atomic Energy Commission (AEC), which received its powers from the Atomic Energy Act of 1946 (AEA). *See* Pub. L. 79-585, c. 724, § 9(a)(3) (60 Stat. 755, 765) (Aug. 1, 1946) (formerly codified at 42 U.S.C. § 1809). Again, there is nothing in the AEA even recognizing treaty hunting rights, much less intent to abrogate them through eminent domain. *Id.*, § 13 (60 Stat. at 772) (formerly codified at 42 U.S.C. § 1813). This authority was superseded by the Atomic Energy Act of 1954, which also says nothing about Indian treaty rights, either on its face or in its legislative history. Pub. L. 83-703 (68 Stat. 919); *see* 42 U.S.C. §§ 2221-2224; S. Rep. No. 83-1699 and Conf. Reps. Nos. 83-2639 and 83-2666.

None of the statutes establishing the current DOE mention treaty rights either, and thus they have not abrogated such rights. The Energy Reorganization Act of 1974, which set up the Energy Research and Development Agency, says nothing about Indian hunting. Pub. L. 93-438 (88 Stat. 1233) (Oct. 11, 1974), codified at 42 U.S.C. § 5801 *et. seq.* Its legislative history is completely devoid of Indian treaty considerations as well. *See* S. Rep. 93-707, H.R. Rep. 93-980, Conf. Reps. Nos. 93-1252 and 93-1445. The statute which transferred Hanford to the new Department of Energy fails likewise. Pub. L. 95-91, Title III, § 301(a) (Aug. 4, 1977) (91 Stat. 577), codified at 42 U.S.C. § 7151. As a result, Congress has never weighed the policies behind these statutes against Indian treaty hunting rights, and has thus never "resolved the conflict" between the two by abrogating those rights.

Although you pointed out in your comments to the HNRTC that Yakama hunting rights are "defeasible," this is true only if government lands are put into private ownership.

The minutes of the Walla Walla Treaty Council, where the Yakamas' treaty was signed, indicate that the Indians understood in 1855 that they were reserving the right to hunt on lands "not occupied by white settlers." *State of Washington v. Chambers,* 506 P.2d 311, 315 (1973) (Yakama treaty hunting rights are "restricted only in those areas staked out by the white man as his own place to settle"); see also *Confederated Tribes of the Umatilla Indian Reservation v. Maison,* 262 F.Supp. 871, 873 (D.Or. 1966). Case law interpreting Stevens treaty hunting rights has been consistent that the term "open and unclaimed lands" means "publicly-owned lands, which are not obviously occupied and which are put to a use not incompatible with hunting." *State of Washington v. Buchanan,* 978 P.2d 1070, 1082 (1999) (giving summary of Stevens treaty case law).

Under this standard, over 90% of the land within the Hanford Site clearly qualifies as "open and unclaimed" for the purpose of Yakama treaty hunting and gathering. There can be no dispute that Hanford is publicly owned by the Department of Energy. Although the United States may argue that all of Hanford is "occupied" by DOE because a small fraction of the land is still being used for the agency's cleanup mission with limited public access, this position has no merit. First, the site has had no "white settlers" occupying its lands since they were taken by the War Department. Second, with the exception of the very small industrial areas where plutonium production and waste storage occurred (and where releases of hazardous substances originate), the lands of the Hanford Site have been basically unused by the U.S. government for seven decades. Finally, there is no evidence in the Yakama treaty minutes that the Indian leaders who signed it understood that a federal agency could have authority to permanently exclude tribal members from a huge area of public land as a buffer zone for temporary government purposes. Indian treaties are to be interpreted as the Indians would have understood them at the time. See *Mille Lacs,* 526 U.S. at 196.

Although published U.S. District Court decisions regarding treaty hunting in national parks have ruled that federal lands withdrawn for a specific use inconsistent with hunting are not "open and unclaimed," these cases certainly are not controlling legal authority for hunting rights at Hanford. See *United States v. Hicks,* 587 F.Supp. 1162, 1165 (W.D.Wash. 1984); see also *United States v. Peterson,* 121 F.Supp.2d 1309 (D.Mont. 2000). In *Hicks,* the court ruled that enactment of legislation in 1942 banning all hunting in Olympic National Park "terminated" the Quinaults' hunting rights there because the park's use had become "incompatible with hunting." *Hicks,* 587 F.Supp. at 1167. In *Peterson* the court held the same for Blackfeet rights in the legislation establishing Glacier National Park. *Peterson,* 121 F.Supp.2d at 1320. These cases essentially followed *Dion,* concluding that Congress' intent to prohibit hunting was incompatible with the exercise of the treaty right, which was "clear evidence" of abrogation.

The same cannot be said for the Second War Powers Act, which provided temporary authorization in 1942 to "acquire by condemnation" any real property "that shall be deemed necessary for military, naval, or other war purposes." Pub. L. 77-507, 56 Stat. at 177. Indeed, the very purpose of the statute was "to further expedite the prosecution of the war," and any lands acquired could only be "occupied, used and improved for the

purposes of this Act." *Id.*, 56 Stat. at 176-177. The war for which this law was enacted has been over since 1945, and the authorizing statute expired two years later. Since the Atomic Energy Acts only authorized the AEC to own "facilities for the production of fissionable material," it is arguable that the AEC and DOE have had little congressional authority since 1947 to retain any extensive land holdings beyond those immediately needed for nuclear fuel production. See Pub. L. 79-585, 60 Stat. at 759, 774 (atomic production "facilities" means "any equipment or device capable of such production"). Of course, by the time CERCLA was enacted in 1980 the Hanford Site's original purpose was nearing an end. In 1987 all plutonium production ceased; DOE then turned to remediation of the resulting environmental hazards - the current Hanford "mission." The primary statutes governing present activities are federal and state environmental and cultural resource protection laws being enforced through the Tri-Party Agreement. Although some energy and technology research is also being conducted, it is also restricted to a very small footprint in the industrial areas.

In other words, unlike a national park, the vast majority of Hanford has always consisted of inessential surplus lands. It is important to note that a portion of them originally consisted of checkerboard Public Domain parcels, which were owned and administered by the General Land Office (later the Bureau of Land Management (BLM)) or the Bureau of Reclamation (BOR). When the Hanford Engineer Works was established in 1943 these sections were withdrawn from the Public Domain, and they have remained under DOE ownership. According to the EIS that was developed for the Hanford Comprehensive Land-Use Plan, DOE expects to return these lands to their original land management agencies:

> When DOE relinquishes its withdrawals on lands that were historically Federal, those lands withdrawn only by DOE would revert to the Public Domain and management by BLM. Those lands withdrawn by the overlapping DOE and BOR withdrawals would remain withdrawn and managed by the BOR. The BOR's use of the withdrawn Public Domain lands after the relinquishment of DOE's overlapping withdrawal must be consistent with the purposes for which they were originally withdrawn from BLM by BOR. If they are not, the BOR would be expected to relinquish or renegotiate its withdrawal notice under the Federal Land Policy and Management Act of 1976 and the lands could be returned to the Public Domain for BLM management.

See *Final Hanford Comprehensive Land-Use Plan Environmental Impact Statement (HCP EIS)*, U.S. Department of Energy (September 1999), at S-56.

As a result, within the next few decades over 90% of current DOE managed land at Hanford may end up back in the Public Domain under exclusive BLM stewardship. The Spokane District of the BLM is currently in the process of revising its Resource Management Plan (RMP), which governs the use, protection, and enhancement of resources on BLM administered lands in Eastern Washington pursuant to FLPMA. A preliminary document released by the Spokane District last year specifically recognizes Yakama treaty rights to hunt and gather foods and medicines on all BLM lands, and

acknowledges the agency's trust obligation to consult with the Yakama Nation regarding the affect of BLM actions on treaty reserved rights. See *Eastern Washington and San Juan Resource Management Plan: Analysis of the Management Situation,* U.S. Department of the Interior, Bureau of Land Management (March 2011), at 198-202.

The Land-Use ROD that was finalized by DOE in 1999 contemplates a return within the next fifty years of most of Hanford to some form of open public use, including wildlife conservation, recreation, and treaty fishing. See *Record of Decision: Hanford Comprehensive Land-Use Plan Environmental Impact Statement,* U.S. Department of Energy, 64 Fed. Reg. 61,615 (November 12, 1999). Only small areas within the current waste management zones would be restricted from public use for exclusive DOE purposes. *Id.* at 61,623. Therefore, the vast majority of Hanford Site lands will probably be under the management of agencies within the Interior Department for multiple uses, including Indian treaty resource harvest.

This is already true for the Hanford Reach National Monument (HRNM), where the U.S. Fish and Wildlife Service currently permits hunting by the public in the Wahluke Slope/Saddle Mountain Wildlife Refuge, and has designated such hunting as a compatible use within the Arid Lands Ecology Reserve. See *Hanford Reach National Monument Final Comprehensive Conservation Plan and EIS,* U.S. Fish and Wildlife Service, (August 2008); 16 U.S.C. § 668dd(a)(3)(B)-(D); 16 U.S.C. § 668dd(a)(4)(K). Indeed, an audit report issued over a decade ago found that DOE no longer needs to retain ownership of the HRNM for any purpose. See *Audit Report: Administrative Control of the Hanford Reach National Monument,* U.S. Dept. of Energy, Office of Inspector General (July 2001) at 3-7. The Washington Department of Fish and Wildlife currently recognizes Yakama treaty rights to hunt within the HRNM, and acknowledges the tribe's corresponding off-reservation co-management and law enforcement role. See *Draft Elk Population Control Hunt Plan for the Arid Lands Ecology Reserve,* U.S. Fish and Wildlife Service (December 1, 2011).

Even assuming *arguendo* that Congress intended to extinguish treaty hunting rights, there is no evidence that the Yakama Nation was ever compensated for any taking of those rights. Treaty rights to hunt and fish are compensable under the Fifth Amendment to the U.S. Constitution. See *Menominee Tribe v. United States,* 391 U.S. 404, 413 (1968); *Peterson,* 121 F.Supp.2d at 1318, n. 12. Congress has specifically recognized this principle by authorizing federal agencies to provide just compensation to Indian tribes for any loss of such rights caused by federal projects. See *Whitefoot v. United States,* 293 F.2d 658, 660 (Ct.Cl. 1961). Although the Manhattan Project was granted authority in 1942 to condemn lands for the war effort, including plutonium production at Hanford, title to a property interest passes to the United States only when the owner receives compensation. *United States v. Dow,* 357 U.S. 17, 21 (1958). Failure by the government to provide compensation results in acquisition of only a "temporary use and occupation" of the property interest taken, not full ownership. *Id.* Because the Yakama Nation never received compensation for any usufructory property rights reserved on Hanford lands, such rights were never fully extinguished even if Congress had intended to do so.

Given the continuing nature of these rights, the Hanford natural resource damage assessment (NRDA) is an opportunity for the Yakama Nation to receive at least some compensatory remedy for any treaty reserved resources (including their "supporting ecosystems") lost through injury from hazardous releases from waste sites since 1980. The fact that tribal members have been officially prohibited by DOE from exercising treaty rights in the upland areas in the last thirty years is of no consequence. In the absence of any statutory authority abrogating treaty rights, a federal agency cannot arbitrarily keep tribal members from entering surplus federal lands to exercise treaty protected rights for the sake of government convenience. This is especially true given both the liberal canons of treaty construction and the trust responsibility of all federal agencies to protect tribal resources. In any case, governmental denial of public access to natural resources has never been a bar to any trustee seeking damages and restoration pursuant to an NRDA.

I hope that we can seek an occasion to discuss these issues further so that your client can take appropriate action within the HNRTC. You can contact me at (509) 575-1500 or (509) 949-7942.

Yours truly,

Tom Zeilman

cc: Harry Smiskin, Chair, Yakama Tribal Council
Vera Hernandez, Chair, YN R/HW Committee
Virgil Lewis, Sr., Chair, FWL&O Committee
Phil Rigdon, DNR
Russell Jim, ER/WM
Leroy Adams, Jr., WRMP
Lynn Peterson, DOI Office of the Solicitor
Patrick Spurgin, Attorney
Julio Carranza, OLC
Hanford NRTC senior trustees

Attachment 3:

YN additional comments to the EPA National Remedy Review Board

Confederated Tribes and Bands
of the Yakama Nation

Established by the
Treaty of June 9, 1855

April 9, 2012

Dennis Faulk, Hanford Project Manager
U. S. Environmental Protection Agency
309 Bradley Blvd., Suite 115
Richland, WA, 99352

Re: ER/WM Cultural Resource concerns on the draft Remedial Investigation/Feasibility Study (RI/FS)

Dear Mr. Faulk,

Yakama Nation Environmental Restoration/Waste Management (YN ER/EM) would like to submit our concerns with regards to cultural resources in the 100-K area. As stated during the Environmental Protection Agency (EPA) National Remedy Review Board meeting, March 27-29, 2012, the RI/FS and associated plan does not identify how the Department of Energy will comply with the National Historic Preservation Act, Native American Grave Protection and Repatriation Act, Archaeological and Historic Preservation Act, Archaeological Resources Protection Act, Executive order 13175, American Antiquities Act, and Proclamation 7319.

After expressing these concerns at the Remedy Review Board meeting, Board members requested YN ER/WM staff to detail out the concerns and submit them formally. The attached concerns are being submitted per this request. Please accept them as an addendum to YN ER/WM's original 10 page comment submitted to yourself and Remedy Review Board members. A copy of these concerns has been submitted to Amy Legare, Chairwoman, EPA National Remedy Review Board for distribution to Remedy Review Board members, also per Board member request.

If you have any questions or concerns please contact myself or a member of YN ER/WM cultural resource staff, Rose Ferri or Dana Miller at 509-452-2502. We look forward to continued consultation to resolve these sensitive cultural issues.

Sincerely,

Russell Jim
Yakama Nation-ER/WM Projects Manager

Vera Hernandez, RHWC
Sam Jim Sr., RHWC
Philip Rigdon, YN DNR
Rob Whitlam, DAHP
Kate Valdez, YN THPO

Warren Spencer, RHWC
Raymond Smartlowit, RHWC
Amy Legare, EPA, Review Board Chairwoman
Administrative Record
Dan Opalski, EPA, Region 10

Post Office Box 151, Fort Road, Toppenish, WA 98948 (509) 865-5121

100-K and 300 Area RIFS EPA Advisory Remedy Review Board Statement

RE: Follow up comments concerning cultural resources

The 100-K and 300 Areas RI/FS have not addressed cultural resources. Although the cultural resource section acknowledges the abundance of cultural sites and culturally significant areas throughout the Hanford site, the remedy does not address how cultural resources will be protected or how effects to cultural resources will be addressed, as mandated by the NHPA and implementing CFRs. The RI/FS states "Tribal Nations leaders review the locations and potential impacts to these resources before site activities begin." However DOE has not been compliant with the NHPA and implementing CFRs since 2003. Approximately 1,200 projects (roughly 90% of all projects) were implemented since 2003 without a full Section 106 review and without any Tribal consultation. To date YN does not know the location and the nature of most of these projects.

Currently there are ongoing discussions with regards to the discovery of contaminated artifact, funerary objects and /or human remains. This topic was originally brought to DOEs attention in the late 1980s. To date there is still no plan as to how these resources will be cared for. Under the NHPA it is DOE's responsibility to properly care for these cultural materials. Tribal discussions with DOE revealed there is a lack of data to determine the level, type and depth of contamination in culturally sensitive areas, known archaeological sites and burial areas. Although DOE has invited Tribal input on a plan of action, until more characterization and testing is completed it is impossible to move forward with a treatment plan, or remedy selection, as it is unknown if cultural material will need to be removed, or can be left in place based on the level of contamination.

The final RODs are expected to be written by September 30, 2012, yet DOE has yet to meet with Affected Tribes to develop a sampling plan for the culturally sensitive areas, known archaeological sites and burial grounds. Once a sampling plan is developed samples will need to be collected and analyzed. The site specific results will need to be reported to Tribal Policy Makers, at which time each site will need to be reviewed. In consultation with DOE, EPA, and WA Ecology the Tribal Policy makers will need to decide what can be left in place and what will have to be removed based on levels of contamination. A plan detailing removal methods and proper curation/reburial of cultural materials must be developed and included in the ROD. The removal of cultural material will add time and expense, which has not been addressed in the alternative remedy selection and cost analysis process. To leave cultural material in place may affect clean up levels as well.

Final RODs need to account for the additional time, expense, clean up levels, and/or mitigation measures to comply with National Historic Preservation Act, Native American Grave Protection and Repatriation Act, Archaeological and Historic Preservation Act, Archaeological Resources Protection Act and Executive order 13175. With regards to HRNM land DOE will also need to ensure compliance with American Antiquities Act and Proclamation 7319. Compliance with laws and regulations needs to be written into the ROD, not merely written into an implementation/work plan post ROD..

It is unclear if DOE has consulted with Department of Interior on remedy and clean up levels as directed in Proclamation 7319 for the HRNM and adjacent lands that could affect the Monument lands. Any outcome of this consultation may affect clean up levels on the River corridor, which in turn may affect remedy selection for the 100-K and 300 Area proposed plans.