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June 11, 2003

Michael S. Collins
HSW EIS Document Manager
U.S. Department of Energy, Richland Operations
P.O. Box 550 (A7-50)
Richland, WA 99352

Re: Revised Draft Hanford Solid Waste Environmental Impact Statement (HSWEIS)

Dear Mr. Collins:

statement 1 Any Federal action that disproportionately impacts minority population is discrimination and an environmental justice issue. The decisions reflected in the Department of Energy's revised Draft Hanford Solid Waste Environmental Impact Statement (HSWEIS) presents many difficult challenges for the Confederate Tribes of the Umatilla Indian Reservation (CTUIR). The implementation of this decision will have the most far reaching implications of any of the decisions about clean up on the ground at the Hanford site than have been made to this point in history. Like all proposed nuclear waste repositories the HSWEIS is in many ways the culmination of the decisions to create nuclear energy. This decision is of like magnitude in that it will result in serious long term impacts to the environment and future generations and will impact the Columbia River. Although this draft does provide more important information than the last draft of the HSWEIS the facilities described in this decision document do not reflect a complete analysis or the best options for storage of nuclear waste at the Hanford Nuclear Reservation.

statement Certainly it is recognized that the Department of Energy is trying to address a very complex series of issues within a framework of the National Environmental Policy Act and many other associated legislative mandates that have never been tested for the length of time this decision will encompass. However, the current administrative drive to accelerate clean up is creating an environment where many important decisions are being rushed. The CTUIR remained unconvinced that it is possible to reach a final accelerated clean up by 2035 as it is currently presented however the CTUIR believe accelerated milestone implementation is possible that can have immense cost savings benefits for a very expensive clean up project. The decision making process however should not be hurried to a point where it results in damages being greater than savings.

statement Very significant natural resources such as groundwater, the ecosystem, the Columbia River and its abundance of fisheries such as Salmon are at risk. A very wide range of waste from only waste produced at Hanford to an "upward bounds" is proposed to be stored at the Hanford site. Developing a strategy for nuclear waste disposal that is both protective of natural resources and people that allows stewardship that provides protection and future management is imperative however more refined information is needed to reach that ability. DOE should not rush into decisions that irretrievably commit natural resources without

the all appropriate information concerning details like quantities of material, characteristics of ground water flow and other similar considerations.

statement

From the CTUIR's observation accelerated goals are rushing decisions in the present that will affect the end results. As such it is invariably important to make sure a complete analysis can be accomplished and a system in place to monitor the results of our actions. For a decision that has such long term impacts the Department of Energy should not be forced or force itself to comply with minimal and limited time frames. The decision making process for the HSWEIS should have a temporal parity equivalent to the length of time the waste is intrinsically hazardous. The CTUIR appreciate and realize that the Department of Energy has been working on this for sometime, however, DOE should realize it might take a decade or longer to develop all the information necessary to make a decision for a final action of this extent.

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There are certainly other actions that could provide momentum toward resolving the inadequacies of this document. DOE should meet its commitment to quantify and address the cumulative impact of all radioactive and chemical waste at the Hanford site and should not limit this analysis to such a narrow scope without this consideration. Issues at Hanford are ultimately cumulative and additive in nature and piecemeal analysis as conducted on all projects at the Hanford Site is inappropriate. Another consideration is to conserve resources by characterizing and reducing the total amounts of nuclear and chemical wastes and to spread the burden of responsibility equitably across the system and not simply using storage at remote locations as the solution. This also requires accelerating planning and building the appropriate facilities to treat the waste and responding to many of the concerns and questions of other federal agencies, the States of Oregon and Washington, and Tribes.

statement

Nuclear and chemical waste will be stored at the Hanford site. From this analysis it is unclear how much more radioactive waste DOE intends to put at the Hanford site in addition to this decision. The CTUIR has made its opinions on that decision well known. It is unacceptable and undesirable that any radioactive and chemical waste be stored within the homeland of the CTUIR, however it is recognized that this is a national decision that requires a national sacrifice and national equity. It is therefore our responsibility to assist the United States to make the bests decisions possible. This HSWEIS in its current draft form as written ultimately results in damages to Cultural and Natural Resources and falls short of the CTUIR's need to protect the Columbia River catchment and the membership of the CTUIR.

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As such it is highly recommended that the schedule on completion of a final draft and record of decision on this action be reconsidered and that the Department of Energy develop additional drafts or sections of drafts until the entire analysis is acceptable to all parties involved. Additional detailed discussions concerning the Hanford Revised Draft Hanford Site Solid Waste Program Environmental Impact Statement are attached. The CTUIR reserve the right to provide additional analysis and comments on this decision. Thank you for your dedication to this challenging endeavor and considerations in resolving these matters.

Respectfully,

Richard C. Gay
CTUIR Acting Executive Director

CC:

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Confederated Tribes of the Umatilla Indian Reservation
Environmental Science and Technology Program
Comments Revised Draft Hanford Solid Waste EIS
June 11, 2003

General Comments and National Issues

4 First of all, although the CTUIR are grateful for the 15 day extension we received to review this report, it is sorrowfully inadequate for the volume of documentation required to be reviewed to fully represent the CTUIR's perspective. To review this document requires reviewing many other supporting documents. The long term ramifications of this project suggest that such conservative time frames are inadequate. The following comments have been represented under subheadings however many issues are interrelated.

statement

This decision is not like the Performance Management Plan as deciding to move forward faster to save resources or the Environmental Remediation Facility that stores Hanford produced nuclear and chemical waste from near the Columbia River, the HSWEIS will create the United States direct legacy of what the Department of Energy deemed appropriate treatment of hazardous chemical and radioactive waste from all over the United States to final disposal in south eastern Washington.

For the members of the CTUIR with direct ties to this land this decision represents one of the most serious encroachments on the long term use of traditional places, natural and cultural resources. No matter what length of time is used to predict and model the ultimate out come that is certain that the decisions represented in this Environmental Impact Statement will impact the Columbia River.

5 Many important decisions already made require solid waste disposal at the Hanford site. There are uncertainties and controversial issues that are described but largely unaddressed such as actual and projected waste volumes currently on site as well as from off site sources, waste treatment facilities and total project waste and final disposition, fate and transport of contaminants, traffic estimates, human and ecological risk and economics amongst many others remain unresolved. DOE has even sought to change the original definitions of waste classifications and the final disposition of certain materials after making commitments to vitrify much of the waste into the longest lasting media currently available.

6 A large section of the people that commented on the draft Hanford Solid Waste EIS wanted DOE to demonstrate the ability to quantify and address the waste on the Hanford Site before accepting off site materials. Instead a sliding scale of upward and lower bounds of estimated waste to be received by Hanford is presented. It is extremely unclear that if after over a decade that DOE has real solid estimate in the amount both in physical volume and radioactivity and location of all its sources of waste. The large sliding scale of projected waste volumes is disconcerting and potentially very alarming. It is clear that a fixed volume for storage should be established then more detailed analysis can be refined and completed.

35 For these reasons we believe the estimate of 10% death rate for our future generations living at Hanford is an underestimate. However, even if we were to assume that the 10% death rate were accurate, it is still extremely unacceptable. One must ask themselves if they would be willing to assume this risk for their families. I think the answer for each of us would be a resounding NO! Such a decision by DOE represents the worst kind of environmental injustice imaginable as they are knowingly and willingly establishing conditions that will kill a major portion of a minority people.

36 To our nation the death of 10% of our future generation represents to us not just the death of our people, but also the disruption in our ability to pass on our culture. These deaths are principally associated from exposure to uranium. Many of the other radionuclides were not included in this EIS. It is our belief that this may even be an understatement of the number of fatalities that would result from the disposal of the MLLW and the LLW at Hanford. In addition, we believe that the time-scale may be in error. The migration of radionuclides into the ground water has consistently occurred much sooner than DOE has predicted or modeled, we believe that the peak in the dosage may also occur sooner than DOE has led us to believe. Institutional Controls would be inadequate to protect our people from these hazards. This area is the traditional homeland of the Tribes of this area. Our Tribes would like to reoccupy these lands when DOE has left. They must be protected from these hazards for all time.

7 Contrary to discussions in this revised Draft HSWEIS this is an Environmental Justice Issue. To simply analyze the costs of the impacts to low income residents surrounding the Hanford site to determine there are no environmental justice issues without assessment of the national implications is inappropriate for a national decision. To analyze this project as a local issue without discussion and recognition of the national implications too narrowly limits the actual scope of this project. The management of U.S. nuclear waste is a national issue; nuclear waste isn't being stored in some of most stable rock formations of the East Coast. Nuclear waste will be transported across many locations to be stored at facilities next to large quantities and qualities of federally owned and managed natural resources and within the homelands of the CTUIR and on resources in which the Tribes rely. The decision to place waste at Hanford will have a long term environmental impact on the membership of the CTUIR.

37 There is very little discussion on the capacities of the remainder of the waste complex and a comparison and projection of waste, final treatment and disposition and location to be stored. It is very difficult to understand this decision without knowledge of the total volume of waste nation wide how much existing capacity is at the Waste Isolation Pilot Plant in New Mexico, Yucca Mountain and the Nevada Test Site and what the limits may be. Decisions at those facilities will ultimately translate into waste either staying at Hanford or coming to Hanford. What is the projected volume of commercial high level waste as opposed to federally owned? What is the capacity at Yucca Mountain? Will WIPP be able to receive all of Hanford TRU waste including remote handled and oversized containers?

8 Clearly some high level waste such as the melters from the Vitrification facility and ground water will remain on the Hanford site. The characterization of Hanford as a low level and mixed waste repository is misleading. A detailed understanding of the complete volume of waste at Hanford and nationally is necessary, it is inappropriate to conduct this analysis as a single narrowly defined project. This decision requested again is to allow for the storage of a yet quantified amount of Mixed Low Level radioactive waste and Low Level radioactive waste. DOE-RL has already received TRU waste form other sources without the capacity to treat and dispose of waste. The fact that some hazardous waste is currently being treated off site by commercial entities without the discussion of the volume of that waste is also an issue.

38 Existing High level waste creates additional problems with this analysis. The document states no technology known or anticipated can remove 100% of contents of Hanford's HLW tanks. It is for this reason that the CTUIR would like a complete removal of the buried HLW tanks and the contaminated soil under them. This is only way to assure the waste will not continue to leak and contaminate the ground water in the future. The tanks should be cut into sections and converted into a form more stable for the environment. The final product should also be stored in lined and monitored facilities.

39 The EIS suggests impacts to workers from cleaning up the site may be greater than the impacts to the general public from not cleaning the site up. This is an excuse to leave high levels of waste in place. We recommend other techniques, such as the use of robotics, be demonstrated for larger applications such as soil removal and tank removal to protect the workers and remove the waste.

It is further suggested that the risk of accidental release from cleaning up waste is greater than leaving it in place. This is not an argument often successfully used by industries that have to clean up a hazardous waste sites after their production operations have created it in the first place. The long-term impacts from the waste left in place is not known well enough that DOE can use the argument that it will not pose much of a danger to the future generations.

9 In the EIS discussion long-term stewardship activities are intended to continue isolating hazards from people and the environment. Long term stewardship of nuclear waste is another large uncertainty that is untested and unknown. This is not a management strategy currently working at Hanford DOE. The tanks were never originally designed to leak and contaminate the ground water. The uranium spikes being seen in the ground water are not intentional. What guarantee will be available that funding is permanently and perpetually available for long-term stewardship? And what contingency funding is available if a leak is discovered from some of these isolated waste sites?

40 Coordination amongst the whole nuclear weapons clean up complex is needed to truly reduce costs and savings of resources. The Summary states that DOE supports the cleanup and early closure of other DOE sites across the country. Hanford is connected to and dependent on other sites. Hanford has "long received LLW, MLLW, and TRU waste from offsite sources. What available funding is provided to Hanford to aid them in the

40 early closure of these other sites by accepting this offsite waste? Hanford is not the only facility designated to accept MLLW and LLW. The Nevada Test Site has also been designated to accept this waste. There should be an evaluation to compare which site has the least environmental impact and the least public health impact.

10 Under the current plan Hanford will send its high-level waste (HLW) and spent nuclear fuel (SNF) to a national geologic repository at Yucca Mountain. What if this repository is filled with commercial and waste from other producers? Does Hanford have contingency plans on where this waste will be deposited? There is not a definite time on when this waste could or would be shipped to Yucca Mountain.

41 TRU waste is being reduced as DOE is now sending or preparing to send TRU waste to the Waste Isolation Pilot Plant in New Mexico. Actually, DOE can currently only send their Contact Handled (CH) waste to the WIPP in NM. It can not yet accept the Remotely Handled (RH) waste. Since Hanford will be classifying RH-TRU waste from Ohio and California, the ability of WIPP to accept this RH waste will be a limiting factor in how quickly the RH can be shipped from Hanford. It could be in a long-term storage mode at Hanford. DOE is planning on shipping all legacy CH-TRU waste to WIPP by September 2015. WIPP is not certified to accept RH-TRU waste yet. This waste will have to be stored at Hanford for an indefinite period of time.

42 The Performance Management Plan targets cleanup to 2035 or sooner, but the technical baseline which forecasts waste volumes doesn't accommodate these accelerated initiatives yet. This next level of detail will not be available until January 2004. This EIS seems to be early. DOE needs to get a better ideal of waste volumes to be able to target cleanup and management. Otherwise, these are just guesses.

Human Health

11 The variability in human dose with regard to individual behavior and exposure affects the uncertainty even more than the inventory, release, or environmental transport. It is for these uncertainties that the environment must be protected to safeguard the populations living in this area in the future. This is why the Native American Subsistence Scenario (NASS) is important to be used in this EIS. Water quality was evaluated via an annual dose from a worker drinking 2 liters per day of the ground water. As addressed in the NASS, this amount may seem low. Drinking 3 liters per day may be more representative of a Native American or resident gardener for this area.

12 Several graphs are quite alarming and the CTUIR would like a response. On figure 3.18, page 3.51 and figure 3.14 page 3.49 there is an extreme danger to a resident gardener (or Native American) with a sauna/sweat lodge over 10,000 years. This EIS is just evaluating new MLLW and LLW brought in for disposal at Hanford. It is not looking at all the other waste currently buried or disposed of on site. This new waste will result in an exposure of up to 3000 mrem per year and a 1 in 10 fatality of Native Americans and others living on this site who wishes to practice their Native American way of life. The death of 10 percent of our population is not acceptable. This will result in not only the

12 death of our people, but also the disruption in our ability to pass on our culture. These deaths are principally associated from exposure to uranium.

43 Many of the other radionuclides were not included in this EIS. It is our belief that this may even be an understatement of the number of fatalities that would result from the disposal of the MLLW and the LLW at Hanford. In addition, we believe that the time-scale may be in error. The migration of radionuclides into the ground water has consistently occurred much sooner than DOE has predicted or modeled, we believe that the peak in the dosage may also occur sooner than DOE has led us to believe. Institutional Controls would be inadequate to protect our people from these hazards. This area is the traditional homeland of the Tribes of this area. Our Tribes would like to reoccupy these lands when DOE has left. They must be protected from these hazards for all time.

d u p l i c a t e

13 In addition, the levels that DOE sets for protecting human health are questionable. They use a level of 25 millirems, yet EPA's formal finding was that 25 millirem is not protective of human health and the environment at CERCLA Sites. 15 millirems per year is the agreed upon exposure limit.

44 In Table S.3, that for the Native American or resident gardener who has a sweat lodge or sauna, the chance of getting cancer from the upper bound waste scenario is 1 in 10. This is not an acceptable risk to the Native Americans. Even the other communities have a 1 in 50 or 1 in 200 chance. These are still unacceptable risk numbers. For fatalities greater than 10,000, the analysis only looked at the areas in the Tri-Cities, WA and in Portland, OR. In addition, the risk is understated since the analysis was for a hypothetical well located 1 km from the boundary of the burial site. This understates the potential contamination. For regulatory purposes, the danger should be calculated at the burial grounds boundary.

Groundwater

14 Options for ground water needs to be fully considered in the siting and design of these waste facilities nuclear landfills. These need to prevent waste from entering the system for the length of intrinsic risk that the waste presents. This analysis is in part incomplete without a better analysis if subsurface hydrologic characteristics to determine the best location for these disposal cells. Instead the current analysis in the HSWEIS justifies a weaker less protective design because of in part already existing ground water contamination and uncertainties associated with climatic assumptions. This is troubling in that DOE has only relatively recently began open discussions of options for ground water remediation.

15 Page 5.252 states that "In addition, after a few hundred years following disposal, the vadose zone surrounding disposal areas and groundwater beneath the Hanford Site to which contaminants travel would be irretrievably committed." Yet Table 5.146 does not list an irreversible and irretrievable ground water resource commitment. This is also contradictory to another quote in this EIS from Hanford (page 5.244): "By the time the waste constituents from the action alternatives are predicted to reach groundwater

(hundreds of years), the waste constituents would not superimpose on existing plumes, and would not exceed the benchmark dose, because the existing groundwater contaminant plumes will have migrated out of the unconfined aquifer by then." Although this last quote is inaccurate since the source of the current plumes is at least partially from
15 contaminates in the vadose zone, DOE is stating that the ground water would have been in a "clean" state and they are knowingly contributing pollution to the ground water that will leave it in a hazardous condition. This is also unacceptable. DOE can not make such broad statements that will "commit" and leave the whole of the ground water beneath Hanford forever contaminated by their actions, nor can they make a claim for irreversible and irretrievable conditions for existing releases. In addition, since new plumes have recently or will be discovered, DOE can not say with certainty when current plumes would have moved out of the area.

DOE's Initiative 6 in the Performance Management Plan is for ground water cleanup and
45 protection. Unfortunately, this initiative will leave contamination in the ground water and in the vadose zone which will be available to continue to contaminate the ground water under the DOE site.

DOE's ground water flow directions do not match some of the historical ground water flow directions. It is possible that there are different flow directions depending on the time scale used in the analysis. The regional flow has traditionally been to the south east.
46 It is possible that this has changed with time as the mounding has dissipated, but it must still be evaluated as a contingency depending on the use of the land surface in the future. The ground water flow paths may still be in a state of flux since there is uncertainty in flow directions. In addition, the danger or radionuclide concentrations are much higher for a Native American practicing their traditional way of life.

By the time the waste constituents from the action alternatives are predicted to reach groundwater (hundreds of years), the waste constituents would not superimpose on existing plumes, and would not exceed the benchmark dose, because the existing groundwater contaminant plumes will have migrated out of the unconfined aquifer by then. Is DOE implying that the ground water will have been cleaned up to pristine conditions before more contaminants will have entered the system to recontaminate the
16 ground water. Why is it predicted to take 100's of years for new contaminants to reach the ground water but current contamination in the vadose zone and ground water would have migrated out of the area by then. There is no discussion of cumulative groundwater issues or of multiple plume issues. It was also predicted that the current contamination would never have reached the ground water in the first place. There are many more types of radionuclides that have contributions to the contamination to the ground water under the Hanford site only a few were analyzed in this EIS to determine their "combined" effects.

A hypothetical Native American or resident gardener with a sweat lodge or sauna, has, within a 10,000 year period, a chance of a cancer fatality of 1 in 10. This is primarily due
47 to uranium in the ground water. There currently is uranium in the ground water under the

47 200 area and there has been a recent increase in the uranium plume in the 300 area. In addition, scenarios should be evaluated for other radionuclides. A 1 in 10 fatality from cancer is unacceptable and shocking that this would be allowed.

17 Mobile radionuclides leached from waste into the environment could eventually be transported through the vadose zone to the groundwater. Although not used as a source of drinking water today, nor expected to be in the foreseeable future, groundwater was analyzed as a source of drinking water. It appears DOE is already trying to write of the use of the ground water as a drinking water source. The Native American Tribes in the area have consistently expressed their desire to reoccupy the lands of the Hanford Reservation when DOE opens it up. A blanket state that the ground water is unlikely to be used is irresponsible. In addition, DOE's analysis was done at 1 km from the burial site and at the Columbia River.

18 DOE has understated the earthquake potential in this area. Recent NEHRP studies in the Yakima fold belt, including Toppenish, Ahtanum, and Rattlesnake Ridge have shown earthquakes in this area with a magnitude of at least 7.3. These fold belts are still considered active since some of these events occurred within the past 10,000 years. Are faults addressed in the current SAC model?

19 DOE is assuming the basalt aquifer is impermeable. Hydraulically, this is incorrect. The Columbia River basalt group has shown to have both vertical and horizontal permeability. As an example, pumping out of the basalt aquifers in the Yakima Valley have resulted in an increase in the downward gradient of the shallow aquifers where there use to be recharge from the basalt. The hydraulic conductivity may at times be low, but with the basalt aquifer covering such a large area, this could be significant. In addition, some of the hydraulic gradients observed around Hanford can only be explained by discharge out of the basalt aquifers. DOE has also ignored lateral transport of waters throughout the burial grounds. The water could move laterally beneath the caps and infiltrate these burial grounds.

Air Quality

This is a long term project that will also have impacts to the air shed. Several aspects of air quality should have been included. Transportation issues, Dust issues affect the air shed. Haze (Visibility) and PM-2.5 should also be examined in the HSW EI.

20 Cumulative air quality impact should also be examined. The HSW project will be adding emissions to an air shed that already has numerous point and area sources that are affecting air quality. The environmental impact of area sources and mobile sources of air emissions does not appear to have been addressed in the EIS. Area and mobile sources of air emissions may add significant levels of criteria pollutants to those air emission sources that have been considered.

The EIS fails to recognize, consider and assess the Pollution Prevention Act and DOE's policy on renewable energy with respect to air quality impacts from utilizing alternatives for diesel fuel.

Terrestrial Ecology

21 It was quite apparent that for an Environmental Impact Statement, there was lacking an ecological evaluation. This should be a major component that includes endangered and threatened species. Performing cultural surveys prior to construction is not mitigation Most of the list of mitigated resources is not "mitigation" based on completion or implementation of projects but represent project management elements that mitigate project challenges. The impact of this project on cultural resources is devastating and irreversible.

The issues of risk associated with human health are alarming however very little is truly understood about the long term impacts of radioactive pollution on ecological resources. Aside from a paucity of ecological data that is limited to the geographic scope of the proposed facility ecological risk issues are another glaring uncertainty in the analysis.

Modeling

48 Because the Hanford Site cleanup is a technically complex and long-term program, with associated uncertainties both in terms of final cleanup end states and modeling techniques, cumulative impact analysis will necessarily contain those same uncertainties. There is obviously uncertainty in the modeling techniques. The final cleanup end states should be obvious. CTUIR would hope the end state of cleanup of the Hanford Site would be for the protection of the ground water and surface water resources so they may be used to the fullest possible potential and to fully protect the people living in the area for all time in the future. It is obvious that DOE would like to do as little as possible to clean this site.

22 Another set of uncertainties occurs in our use of the various models and modeling techniques. The SAC is expressed in the EIS as an example of a good, but still emerging tool. Although all models have some uncertainty associated with them, the SAC is not a well tested tool. Other techniques such as using Modflow to model the ground water flow may be a better technique. This method is widely accepted in the industry, and has been peer-reviewed quite often. The SAC model has failed to accurately represent known ground water contamination in many locations.

49 The long-lived mobile radionuclides selected with which to make these estimates were technetium-99 and uranium isotopes using the SAC. Other long-lived radionuclides occur in sufficient quantity in various Hanford sources to also be of interest (such as iodine-129). However, the SAC program had not completed the inventory and classification of waste forms in time to integrate these other radionuclides into the present analysis. This analysis does not include the contribution to cumulative impacts of all radionuclides because of the uncertainties in the inventory and modeling approach. For example, if all sources of iodine-129 were to be considered, the cumulative impacts to the groundwater could be greater by a factor of 3.

23 Other radionuclides could similarly have an impact. However, they were not included in the analysis. For example, even though tritium is short lived, it does have an effect on

23 living tissue. But this is but one of many that was not included in this EIS analysis. Thus it seems this EIS may be flawed and should be withdrawn.

Transportation and "interim storage"

24 The transportation component is still poorly lacking in evaluating the risks to transporting shipments in inclement weather. This was discussed with DOE when they visited the CTUIR offices. DOE used 1990 census data rather than the available 2000 census data. The EIS does not evaluate secondary routes that may have to be used due to overweight shipments or detours as bridges are replaced and roads closed due to routine maintenance.

50 DOE claims that 300 million hazardous material shipments occur in the United States each year. It is not accurate to compare shipments of compressed air and gasoline since they don't pose the same long-term hazard as a radioactive accident would.

51 Local, State, tribal and federal governments and carriers all have responsibility for preparing for and responding to transportation emergencies. It is good to see the tribes acknowledge as being able to respond. However, when it comes to a radioactive spill, only the federal agencies would have the skills and equipment necessary to contain it. This is further exacerbated by an aging highway system including many bridge issues in Oregon and the State of Oregon's budget constraints. DOE amended the ROD for the TRU waste to allow for "temporary storage", characterization and certification from "small generator" sites at Hanford and at Savannah River sites. Again, what is the definition of "temporary storage"?

52 Transport of TRU to WIPP might result in 18 additional accidents. Is this figure still valid in light of the recent three incidences that occurred when waste was being transferred down to WIPP?

53 Although an analysis of nationwide transportation of wastes to Hanford from other DOE sites was not performed, the transportation impacts associated with those wastes in the states of Oregon and Washington were added to the revised draft. This EIS seems inadequate without knowing what kind, or how much waste is going to be transported to Hanford.

Waste Volumes

54 The largest uncertainties for the HSW EIS surround the actual volumes of waste that DOE must treat, store, and dispose of and their associated levels of activity. This uncertainty is very critical to be able to get an accurate estimation of the potential impacts to the environment. Without this, the EIS is only guessing and doing a poor job at that. What goes into these sites has a large influence on altering the ground water chemistry and the mobility of the waste types.

25 Waste site inventories, both in terms of chemical and radioactive contaminates, are not precisely known for many of the solid and liquid waste sites present on the Central Plateau. Although the overall quantities of radionuclides generated at the Hanford Site are relatively well known, the actual amount in specific waste sites is uncertain. This

25 uncertainty is very important. Various waste types could get into the ground water from sources, routes, and methods unknown to Hanford DOE. Thus the levels and rates of contamination could be faster or slower depending on many conditions such as geology, chemistry, precipitation, ground water gradient, location, etc.

55 The ESTP staff is uncertain about the nature and extent of some sources and types of contamination. The inventory of iodine-129 is uncertain by up to a factor or 2, and thus, so are the associated cumulative effects. Yet it is also stated that the cumulative impacts to the groundwater from the iodine-129 could be greater than the impacts presented in this EIS by a factor of up to 3. It again appears to be some discrepancies in these broad assumptions.

56 The EIS discussion attests that four billion liters of ground water has been treated to remove substantial amounts of Chromium, Carbon Tetrachloride, Nitrate, Uranium, Technetium-99, and Strontium-90. "Substantial" is a relative term. There are still substantial quantities of these contaminants in the vadose zone that have not been removed and currently, DOE does not have plans to remove these contaminants. DOE is claiming removal for some of the wastes that are degrading naturally.

Nuclear Waste and Waste Treatment Issues

57 After the HLW is separated and vitrified from the tank waste, what is left is classified as Immobilized Low Activity Waste (ILAW). What process is used to immobilize this waste? Grouting is not a recommended process for immobilizing waste. The grouting (or "cast stone") will eventually break down and this waste will once again be mobilized into the environment. This EIS states it will use vitrification, however, the ORP are discussing other alternatives for the ILAW tank waste. The CTUIR believes the waste should be stored in containers or in a form that will last at least as long as the waste it is containing remains dangerous. If it is not, then DOE is just delaying the eventual contamination of the ground water for a future generation to deal with. The High Level Waste (HLW) will be stored for the interim at Hanford. Is the 2010 an accurate figure for when this waste will be shipped out? Could the storage period be longer?

26 Figure S.4 and 1.4 breaks down the waste arriving and leaving Hanford. From this figure, it appears that over three times more of MLLW is arriving at Hanford than is already here. Also, more LLW will be arriving at Hanford than is already here. Only through the processing of tank waste, capsules (K basin), and spent nuclear fuel is there any reduction at Hanford. This figure does not account for what has been lost or trapped in the vadose zone and ground water at Hanford. Nor as stated later (Summary, Page S.13) does it include waste from older burial ground, waste disposed of in ERDF, decommissioned Naval reactor compartments, or commercial waste in the U.S. Ecology facility. Since all of this waste will be arriving at Hanford, they are responsible for treating and disposing of it. This is coming out of Hanford's budget that could instead be spent on cleaning up their current ground water contamination. Hanford DOE should not have their budget limited by accepting, treating, and monitoring this offsite waste.

58 All TRU eventually shipped to WIPP. When and what assurances? TRU waste buried in 618-10 and 11 burial grounds eventually shipped to WIIP. DOE has put off the cleanup of this site. DOE claimed they did not have the technology available to clean up these "hot" sites. What is the time-table for this? This delay has resulted in new ground water contamination spreading towards the Columbia River.

59 According to the EIS, DOE will accept "some" LLW and MLLW from sites that do not have disposal capability. "Some" appears to be more volume than is currently at the Hanford site according to figure S.4. DOE does not know precisely how much waste Hanford will receive from offsite. This is somewhat disturbing. DOE has evaluated a range of waste quantities but they do not know precisely how much they have, let alone what they could receive. Is there an accounting problem with known volumes? What about deeper, contaminated vadose zone volumes? What contribution could this add?

27 The actual waste is to be stored at Hanford is narrowly described. The "Hanford Only" waste volumes do not include waste disposed of in older burial grounds, environmental restoration waste disposed of in the Environmental Restoration Disposal Facility, decommissioned Naval reactor compartments, or commercial waste disposed of in the US Ecology facility. But these all potentially have impacts to the ground water and eventually the Columbia River. Major potential contamination to the ecology and ground water supply is being ignored. The Tank Waste is ignored, pre-1970 waste is ignored, Carbon Tetrachloride is not addressed, yet the EIS states that (page 3.52) that cumulative impacts from "all wastes intentionally disposed of on the Hanford site since the beginning of operations and waste forecast to be disposed of through cleanup completion." If these other waste types are ignored and the current EIS indicates an impact to the ground water, then it is alarming what could be the impact if these other sources are included.

60 Does Figure S.6 include the potential impacts of "long-term" storage of RH-TRU wastes? Could the TRU in this figure be higher if these are taken into account? TRU waste was not considered a separate waste type until 1970. After 1970, it was stored in Low Level Burial Grounds and in trenches or caissons. This is classified as "suspect TRU" since at least part of it is TRU waste. Is this waste then not included in the TRU waste inventory? These waste types are inseparable from the impacts of the wastes analyzed in this HSW EIS.

Facility Engineering and Treatment Capacity

61 Key facilities necessary to treat waste have not been built and interim storage is a crucial management option often reflected in this decision document. Some of the most important topics have been incorporated into sections on controversial issues or uncertainties.

62 To store this waste without preplanning contingency to retrieve and retreat stored in the future when knew technologies do arise seems short sighted and too focused on a small savings to a problem that will have a much costlier impact later in time. To have made a commitment to address ground water in the Performance Management Plan without

62 giving that decision an opportunity to develop a more detailed strategy for ground water remediation in the 200 Areas to influence siting of this solid waste facility also seems a premature decision.

63 DOE's preferred alternative is the disposal of LLW, MLLW, and ILAW in a single, lined facility at the Central Plateau. If all of these wastes are in one trench, this may interfere with retrieval operations. It would be difficult to retrieve one type of waste and not disturb the others once the site is buried. It would also be difficult to determine where leakage or compromised containers are located. Could leakage or a degraded container located next to others have an influence on adjacent waste types? The CTUIR believes the "lined" trench is a good option but this disposal in a lined, retrievable process should be accelerated.

28 The proposed facilities are inadequately designed to prevent release into the soil and ground water and are not designed for contingencies to allow for identification, retrieval, and removal. Without these attributes incorporated into the design of all alternatives this action essentially identifies that certain resources at the Hanford site are sacrificed as irretrievable and the effects of the decision are irreversible.

29 Hanford DOE has limited capacity to treat MLLW at Hanford. Will the contractors be able to treat the MLLW and LLW that will be arriving at Hanford since they can only treat a limited quantity? If not, how will this MLLW be stored at Hanford before treatment to assure its stability? Or will it be treated before arriving at Hanford?

64 DOE would need additional capabilities to treat MLLW, RH-MLLW, RH-TRU, and non-standard items since they cannot be accepted by commercial facilities. When would these facilities be built? It appears that waste of many different kinds would be stored at Hanford in unstable forms before they could be processed. This increases the hazard to the environment.

65 According to the discussion Remote Handled TRU waste will be stored at Hanford until processing and certification capabilities are developed. DOE anticipates that WIPP will have its remote-handled acceptance criteria and infrastructure in place to begin receiving such waste in approximately the 2005 timeframe. This is an uncertainty. Is there a chance that this could be delayed? Or could this be extended if WIPP could not accept RH TRU waste?

30 Category 3 LLW requires grouting waste in the trench or placing it in high-integrity containers. What is the half life of this category 3 waste? Grout does not have a half life that is likely to last several thousand years. If this waste is harmful enough to require grouting, then vitrification should also be considered.

66 DOE is considering moving exclusively to burial of LLW and MLLW in lined disposal facilities with leachate collection systems. CTUIR strongly recommends lined disposal facilities with leachate collection systems as well as extensive monitoring wells around and under the trenches or burial grounds. This can help to detect any leaks or degrading

66 of waste containers before the waste has a chance to move into the ground water system. The current EIS analyzed impacts to the ground water from a hypothetical well located 1 km from the burial site. The analysis should be done for a well located at the edge of the burial grounds. If the trenches will have a low-permeability liner and a system for collecting leachate does the design assume that water will be getting into the burial grounds, through the waste to be able to be collected? How is this system to be maintained for as long as the waste remains hazardous?

31 In most of the alternatives, a cap would be placed over waste sites consisting of soil, sand, gravel, and asphalt to reduce water infiltration, and human and animal intrusion. A cap made of these materials would do little to limit intrusion by humans. In addition, the life of these caps would be no greater than a few hundred years. The half life of some contaminates is much longer than this. There have already been occurrences of animal intrusion in areas with caps over waste sites. Landfills have used caps made of artificial materials. This is not considered at these sites. These artificial materials would very visually show when the ground is starting to erode and exposing the capping material.

67 DOE considers that many engineered structures and administrative or institutional controls have remained in place for several hundreds of years, in Europe for example, that this is considered a very conservative assumption. But if you look at examples in this country of places such as the Love Canal, you can see that off times, these waste sites are forgotten or lost. Even Hanford is replete with examples of lost burial sites with no records of what or where materials have been buried.

68 The long-term performance of our in-place waste site remedies and closure techniques is largely unproven. This is also a large area of uncertainty. For example, if the caps over the waste sites break down sooner than they predicted, then the waste will flow into the ground water quicker and at high radioactivity levels than they predicted using the SAC. It is well known that the caps over the waste sites will not last as long as the waste under them remains intrinsically dangerous. The waste stored at Hanford should be stored in containers or stabilized in a form with a lifespan as least as long as the waste form remains intrinsically dangerous. Otherwise, it is just a delay in the inevitable release of new contaminates. As an alternative, the waste could be kept in frequently monitored, easily retrievable locations.

32 The disposal of solid waste would add only a small contribution to projected doses for people in the highly unlikely event that they were to drink from groundwater. However, the "unlikely" use of saunas and sweat lodges would result in doses at about 8,000 years hence that "might" be of concern. Mitigation plans include land-use covenants and active and passive institutional controls for as long as needed in the future. This just reflects DOE's lack of concern for the Native Americans and the Native American lifestyle. It is DOE's assumption that a sweat lodge is unlikely.

The Native Americans have lived in this area many thousands of years and they intend to continue to live in this area long after DOE has left this site. It is shocking that DOE would consider the death from radionuclides of 10 percent of the population living in this

area and practicing their native lifestyle, insignificant enough that it "might" be of concern. It is to be certain of a concern. This loss of 10 percent of the population has even wider consequences including the ability to pass on knowledge and traditions to the Tribe. Can DOE assure these institutional controls for over 8000 years into the future? Do they have any record of similar control that they can use as an example?

33 We are not able to resolve many of these issues because they reflect either differing points of view or uncertainties in predicting the future. DOE can not predict the future. Nor can they make statements like the ground water will not be used in the future. Nor that institutional control will adequately protect the people who choose to live in this area in the future.

L-0056

This document was submitted twice.
See E-0043 for the original e-mail that was submitted.

L-0057

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6-9-03

Michael Collins, U.S.D.E.
Richland WA.

Dear Mr. Collins,

As a former high school biology teacher I find it irresponsible for
1 my governmental agencies to use my taxes to bury hazardous chemicals & radioactive wastes - in unlined trenches - near a major waterway.
2 Please stop import of such materials and using such poorly considered methods. The cumulative risks are too
3 great for the future of our states and economy. The mistakes of the past
4 need to be attended too as well,
5 we don't need further soil and ground water contamination (over)

6 Please develop a timeline for the alternatives to line and monitor the burial trenches. Thank you for your time,

Concerned senior citizen —

Lola K. Caldwell