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DEPARTMENT of  
NATURAL RESOURCES

Administration



CONFEDERATED TRIBES  
of the  
*Umatilla Indian Reservation*

P.O. Box 638

PENDLETON, OREGON 97801

Area code 503 Phone 276-~~3447~~  
0105 FAX 276-~~3347~~  
0540

5 June 1995

John Wagoner, Manager  
U.S. Department of Energy  
P.O. Box 550  
Richland, Washington 99352



Subject: **URGENT CALL FOR EXPANDED PUMP-AND-TREAT PROGRAMS TO ADDRESS PERSISTENT AND UNCONTROLLED DISCHARGE OF CONTAMINATED HANFORD GROUNDWATER INTO THE COLUMBIA RIVER**

Dear Mr. Wagoner:

The Columbia River is the cultural lifeblood of the Pacific Northwest. For many material and spiritual reasons, this is just as true for modern society today as it has been for traditional American Indian tribal societies for many thousands of years. But today the Columbia River suffers needless and preventable abuse.

For the past half century, nuclear weapons production activities at Hanford have caused widespread environmental pollution of unparalleled nature, extent, and magnitude. Such unconscionable pollution has measurably damaged and degraded wide ranging natural resources of the Columbia River ecosystem and the Columbia River itself. Although the U.S. Department of Energy's (DOE) mission changed from production to environmental remediation and restoration more than six years ago, little substantive and measurable progress toward "cleaning up" this mess has been made, despite the expenditure of billions of public dollars. Meanwhile, unacceptably high levels of Hanford-origin contaminants continue on a daily basis to damage or threaten treaty-protected trust resources and rights of the Confederated Tribes of the Umatilla Indian Reservation (CTUIR).

Many diverse interests have repeatedly and consistently expressed to DOE that their primary and overriding concern is to *PROTECT THE COLUMBIA RIVER*. Such interests include not only all affected American Indian tribes--including the CTUIR, but also regulators, natural resource trustees, states, and diverse environmental and public interest groups. This message has been loud and clear.

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But DOE instead consciously chooses to allow dangerous chemical and radiologic contaminants to routinely discharge into the Columbia River at many locations every day. This sorry situation is largely preventable or controllable with field-proven technologies that are widely accepted outside of Hanford. DOE, however, is frustratingly paralyzed by an institutional commitment to inaction. The time for endless DOE stalling and excuses has ended.

Thomas Grumbly recently bragged before several U.S. Senate Committees that DOE has pumped and treated 2.4 billion gallons of groundwater and at least 1.6 billion gallons of surface water since 1989.<sup>1</sup> He does not mention that, of this impressive total, less than 10 million gallons--*a small fraction of one percent*--was treated at Hanford, almost entirely in 1994 and 1995 'treatability tests.' Why is it that other DOE sites across the nation--faced with far less severe and widespread problems than Hanford--appear so readily able to take advantage of this well established and demonstrably successful remedial strategy?

In the non-Hanford world, pump-and-treat programs are field proven for wide ranging chemical and radiologic contaminants and hydrogeologic environments at NPL and many other contaminated sites. Thoughtfully designed pump-and-treat systems constitute among the simplest, most effective, and widely employed remedial strategies to measurably reduce contaminant volume, extent, toxicity, and mobility. *In fact, such systems are so widely accepted and effective that standard EPA guidance identifies pump-and-treat as the presumptive (default) remedy for contaminated groundwater.* Moreover, such proactive and protective programs also have been shown to effectively control contaminant spread, commingling, future discharges, and cumulative ecosystem and human health impacts, all of which greatly reduce true remediation costs over the long term. Thus groundwater pump-and-treat programs constitute not only *highly effective remedial techniques* but serve equally well as *effective and proactive pollution prevention strategies*--a novel concept to many at DOE-RL.

*DOE must begin immediately and aggressively protecting the Columbia River*, as DOE has long promised and as diverse interests have long demanded. Enough is known about major contaminant plumes now impacting the Columbia River to fully justify widespread groundwater pump-and-treat programs at Hanford. Moreover, in spite of far less than optimal operating conditions, DOE's own treatability tests, conducted under Hanford-specific conditions, have been remarkably successful, by any measure. Regulators have repeatedly called upon DOE to aggressively implement such programs more widely. There is absolutely no excuse for any further delays and any further inaction.

Currently fragmented and piecemeal remedial approaches at individual Hanford waste sites must be integrated under a holistic and comprehensive sitewide program. This program must clearly

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<sup>1</sup> Thomas Grumbly, DOE Assistant Secretary for Environmental Management, in Statement before U.S. Senate Committee on Armed Services, April 25, 1995, p. 10; and in Statement before U.S. Senate Committee on Environment and Public Works, Subcommittee on Superfund, Waste Control, and Risk Assessment, May 9, 1995, p. 3.

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define an overarching vision outlining how the individual pieces fit into the big-picture goal of *remediating and protecting Hanford site groundwater and the Columbia River both now and in the future*. This will require much more than just words. It will require ACTIONS. DOE must:

- 1) Comprehensively and systematically eliminate, minimize, control, or contain *all major river-margin contaminant plumes* that now routinely discharge into the Columbia River along the entire Hanford Reach, or threaten to in the future. This goal must be pursued *aggressively* using realistically-scaled groundwater pump-and-treatment programs.
- 2) Use aggressive groundwater pump-and-treat and hydrologic control programs to control the further spread and commingling of all major *plateau-origin contaminant plumes* that will eventually impact the river.
- 3) Develop and, most importantly, IMPLEMENT a truly holistic and comprehensive sitewide groundwater protection management plan to govern the integration of all sitewide groundwater remediation and protection efforts (see attachment). Although many essential elements of such a plan are already in place, the current "plan" is routinely ignored because it lacks both the teeth necessary for meaningful implementation and enforcement and the visible, aggressive support of DOE Site and Deputy Managers. A sustained level of dedicated high-level oversight will be essential in controlling the excessive discretion now exercised by individual program managers and contractors to selectively implement or ignore critical elements as they so choose.
- 4) Place an immediate moratorium on the funding of never-ending additional "studies" of marginal value. Use these significant funds directly for aggressive, in-the-field remedial programs, such as full-scale groundwater pump-and-treat. Enough is now known to focus immediate remedial efforts on critical river-margin plumes while simultaneously gathering additional--and more relevant--information during full-scale pump-and-treat operations.
- 5) Thoroughly reassess, consolidate, and comprehensively integrate all groundwater monitoring programs sitewide. End duplicative and excessive monitoring by multiple contractors and programs. This could be achieved through creative negotiations with regulators that will comprehensively satisfy the spirit of regulatory compliance requirements without sacrificing legitimate data objectives. Eliminate petty competition and turf wars between contractors for program, staff, and budget control of high-profit monitoring programs. Use the huge amounts of dollars now wasted on excessive monitoring for aggressive, in-the-field remedial programs, such as full-scale groundwater pump-and-treat.
- 6) Reorganize all groundwater treatment and monitoring programs from now diverse DOE offices, programs, and purposes under a single sitewide umbrella group. This single sitewide groundwater protection oversight program would be managed by a single "groundwater czar," such as the Site Deputy Manager. This individual must have the full authority, responsibility, and accountability--not to mention the strong personal commitment and backbone--necessary to exercise meaningful control and to ensure

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compliance of each and every Hanford program impacting groundwater conditions across the site, regardless of individual program resistance, power struggles, and foot-dragging.

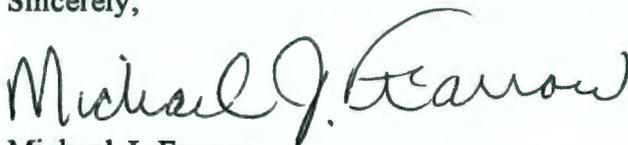
- 7) Establish a realistic incentive program for both DOE and its contractors that systematically rewards measurable, cost-controlled progress toward clean-up (e.g., payments linked to volume of groundwater treated, volume of contaminants removed, sustained decreases in river margin seep/spring contaminant concentrations, or measurable improvements in Columbia River water/habitat quality). The program also must provide equally strong disincentives and funding cutbacks for continued stalling, further costly studies of marginal value, preventable contaminant increases, and unnecessary water quality/natural resource degradation.

Diverse Hanford interests, the press, and Congress have soundly criticized DOE for spending so much yet accomplishing so little. Aggressive, comprehensive, remediation and pollution prevention efforts--such as full-scale groundwater pump-and-treat programs--are essential, integral elements of a holistic and sitewide groundwater protection strategy for the Hanford site. Only such a comprehensive strategy will accomplish what most interests consider "clean-up," protect tribal treaty-reserved resources and rights, and minimize direct, indirect, or cumulative impacts to Columbia River and subsistence-dependent tribal communities, now and in the future.

Current pilot-scale groundwater pump-and-treat programs at Hanford greatly surpass effectiveness expectations, in spite of less than optimal operating conditions. Despite DOE's dire political need to demonstrate "clean-up" progress, little *action*-directed expansion of these unabashed success stories is being seriously considered, let alone aggressively implemented. Further delays will only exponentially increase true costs, remedial complexity, and adverse health impacts, while simultaneously increasing the severity of damages and urgency of risks to affected communities, such as American Indian tribes.

Ultimately, aggressive field treatment programs can only enhance plummeting DOE credibility in the eyes of tribes, regulators, Congress, and the public. Like few other actions, such good-faith commitments to fulfill legal and moral federal government obligations and to simultaneously restore the health of the Columbia River ecosystem will immeasurably benefit both DOE's credibility and the environment. It is a true win-win situation: for both DOE and for those of us who deeply cherish the Columbia River.

Sincerely,

  
Michael J. Farrow

Director  
CTUIR Department of Natural Resources

RL Commitment Control

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Richland Operations Office

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cc: CTUIR Board of Trustees  
CTUIR Special Sciences and Resources Program Staff  
Senator Mark Hatfield, Oregon  
Senator Patty Murray, Washington  
Senator Slade Gorton, Washington  
Hazel O'Leary, Secretary of Energy  
Thomas Grumbly, Assistant Secretary of Energy for Environmental Management  
Jerry Meninick, Yakama Indian Nation  
Charles Hayes, Nez Perce Tribe  
Ron Izatt, DOE-RL, Deputy Manager  
Linda McClain, DOE-RL, Assistant Manager for Environmental Restoration  
Kevin Clarke, DOE-RL, Indian Nations Program Manager  
Dan Silver, Washington Department of Ecology  
Chuck Clarke, EPA, Region X Administrator  
Mary Lou Blazek, Oregon Department of Energy

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## ATTACHMENT: ESSENTIAL ELEMENTS OF A COMPREHENSIVE HANFORD SITEWIDE GROUNDWATER PROTECTION STRATEGY

### Purpose

- The purpose of a groundwater protection strategy is to prevent the degradation of natural groundwater and surface water quality and quantity.
- This purpose is best accomplished through proactive pollution prevention. This provides the best protection to both human and ecological health now and for future generations.
  - Waste Minimization (reduced dependence of transported hazardous materials)
  - Recycling (excavated soils, demolition concrete/metal)
  - Alternative Production Technologies (less resource consumptive, less waste producing)
  - Source Control (ongoing discharges, existing waste sites, vadose-zone)
  - Pump-and-Treat Programs (prevent further spread, commingling, discharges of existing contamination)
- Is the goal to protect the resource itself or human use(s) of the resource? This not-insignificant consideration may influence the development of protective strategies and residual contamination levels. Tribal philosophy emphasizes maintaining natural integrity and viability of entire ecosystems and all of their components.
- *A groundwater protection program must constitute an implementable plan that contains proactive preventative, remedial, and protective actions that meaningfully contribute to achieving long-term protection (i.e., non-degradation) of water quality and quantity.*

### Strategies and General Philosophies

- Once contamination has occurred, the best strategy is to prevent further degradation of either water quality or quantity. Such pollution minimization must have the ultimate and desirable goal of restoring injured conditions as best as possible to normal, pre-contamination conditions. This can be accomplished in various ways, depending upon technological, political, economic, institutional, and cultural limitations and desires. For example, any of the following (non-exhaustive) strategies may be employed, and are listed in approximate order of effectiveness for achieving the goal of minimal degradation of natural conditions.
  - Removal (excavation, pump-and-treat)
  - In-Situ Isolation (physical, chemical, hydrologic)
  - Containment/Control (physical, hydrologic, cryogenic)
  - Fix in Place (chemical, physical)
  - Surface Cover/Barriers
  - Natural Attenuation -- The No-Action Alternative (with the emphasis on NO action)

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- Activities that permit degradation of now uninjured areas, or that permit further injury of areas already injured, must not be permitted.
  - Prevent further contaminant spread
  - Focus on long-lived, mobile, environmentally persistent contaminants
  - Focus on discharges, either current or at *any* time in the future, of contaminants that will pose a hazard to human or ecological health
  - Focus on the condition, health, and integrity of the resource itself (groundwater is only surface water that has not reached the surface yet--it's only a matter of time)
  - Assess impacts of permitted discharges for both ongoing activities and treated effluents--are they protective??
  
- Statutory, regulatory, and treaty-based drivers must be outlined and their role in a groundwater protection program must be defined. Interrelationships, interdependence, complicating factors, and conflicts must be explicitly identified and their resolution discussed.
  
- Time is an essential element that must comprise *the* basis of any truly "protective" long-term groundwater protection plan. For example, direct, indirect, and cumulative impacts must be explicitly addressed for both the short- and long-term. The human, ecological, and cultural health impacts of doing nothing, either now or in the future, must be explicitly discussed in relation to groundwater protection.
  
- A truly sitewide and comprehensive plan must consider the entire site, and address *all* activities--past, current, and future--that have the potential to impact groundwater quality or quantity, including those offsite (i.e., upgradient) areas that can affect onsite conditions (e.g., expanded irrigation).
  
- Characterization is a supporting strategy to understand how severe and urgent current and future threats are through measuring current contaminant extent and levels, understanding hydrogeologic conditions, and developing effective remedial *actions* to prevent further and long-term degradation. It is not an end in and of itself.
  
- Monitoring is a supporting strategy to measure how well the proactive elements of the Plan are succeeding, not an end in and of itself. Programmatically separate and duplicative monitoring efforts must be consolidated and eliminated.
  
- Interim/permanent waste management on the Central Plateau must be explicitly addressed.
  
- Develop and IMPLEMENT a proactive plan directed at achieving these goals
  - Preventative, remedial, and protective ACTIONS must be the basis of any meaningful/realistic groundwater protection program
  - Precisely measuring how things are growing worse is simply not enough
  - *Only* through action can both costs be controlled and human and ecological health be protected, now and in the future--Isn't this the basic point and purpose??
  - The oversight group must outline and initiate actions to achieve these goals