STATE OF MISSOURI Bob Holden, Governor • Stephen M. Mahfood, Director
DEPARTMENT OF NATURAL RESOURCES
OFFICE OF THE DIRECTOR
P.O. Box 176 Jefferson City, MO 65102-0176

September 27, 2001

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SEP 2 8 2001
HAZARDOUS WASTE PROGRAM
MO. DEPT. OF NATURAL RESOURCES

Ms. Pamela Thompson, Project Manager
United States Department of Energy
Weldon Spring Remedial Action Project
7295 Highway 94 South
Weldon Spring, MO 63304

RE: Weldon Spring Site Stewardship Document for Operations and Maintenance
DOE Document Number DOE/OR/21548-771, Rev. 1, July 2001

Dear Ms Thompson:

Thank you for providing a draft of the stewardship plans that addresses a few of our previously noted concerns. However, it does fall short of a complete plan. I cannot overemphasize the importance of agreeing on a manual to address the stewardship issues at Weldon Spring. The Department of Energy (DOE) chose to construct a waste disposal cell, designed to last hundreds or thousands of years, that does not outlast the potential contamination lifetime of the waste. The DOE also chose to leave contamination in the Southeast Drainage and other impacted areas. With these decisions the DOE accepted the responsibility to adequately protect human health and the environment beyond the completion of the disposal cell construction. The waste will remain. You and I, and all those currently involved with this project, will not. The Stewardship plan and supporting documents are key components to establishing the future path towards fulfilling this undaunted commitment.

As we have discussed previously on numerous occasions, development of this plan must be done through an open and collaborative process. Meaningful discussions must ensue with the Missourians affected, local governments, the Department of Natural Resources and other stakeholders. We have attempted to discuss stewardship issues with site staff and have been ignored. If our two agencies cannot have productive discussions, how can I ensure that the concerns of others in the state are also heard?

The proposed stewardship plan fails to establish a clear explanation of the DOE's commitments and actions. The DOE has also not adequately addressed key components, along with the necessary details: current knowledge and documentation, used to decide the course of action; plans for action; future funding and institutional controls.

RECYCLED PAPER

Deficient documents
Staff determined previously that the *Long Term Monitoring and Maintenance Plan* and the *Institutional Controls Plan* were deficient in several areas. The stewardship plan refers at length to these documents. Until the monitoring, maintenance and institutional control plans are adequate, I cannot endorse a stewardship plan dependent on those documents.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) requires an "Operations and Maintenance Plan" detailing how the site will be preserved in a protective state before a remedy is complete. The stewardship plan does not include this plan. The formal CERCLA primary document review process cannot begin until it is added.

Ineffective plan for action
The Stewardship Plan outlines broad scopes of action, but does not include specific details of what is to follow. Who is responsible for what and when it will be done must be provided. DOE developed extensive guidance documents that were not used to produce the stewardship plan. To ensure for the future safety and protection of our citizens and resources a true plan must be in place, not just an outline. Other states will think long and hard when looking to Weldon Spring to gauge whether the strategy of allowing on-site capping of waste is prudent. DOE's promises and commitments to ensure post-closure protection of human health and the environment through a Stewardship Plan appear to be empty.

Insufficient consideration of funding
There is no secure mechanism to provide funding for stewardship activities. Further, the plan proposes an inadequate funding level, less than $4,000 annually, for state and local oversight. Without adequate funding, the plan will sit on the shelf, nullifying any real commitment to stewardship. DOE has provided adequate funding for other states, I will not settle for anything less for Missourians.

Inadequate institutional controls
The decision documents for the Chemical Plant site, Quarry Residuals Operable Unit and the Southeast Drainage Area identified needed institutional controls. When institutional controls are a part of the selected remedy they are required, not just considered, as stated in the plan. Institutional controls are also required for those areas impacted by contaminated groundwater. Additionally, some kind of property control or owner notice is required for any areas containing residual contaminants that have not been remediated to appropriate residential risk levels.

The DOE has undertaken extensive remediation at Weldon Spring. Development and approval of a stewardship plan at this time may seem to be of secondary importance compared to the completion of the remediation. But, remediation is a short-term commitment. Stewardship is the long-term commitment to dealing with the contamination.

Please address these issues. As always, my staff and I are willing to work with you to develop a complete and meaningful stewardship plan. More detailed comments on this submittal are

enclosed for you to review and address in development of an acceptable plan. I am committed to Missourians to ensure that the site is protected for future generations. If you have any questions, comments, or wish to set up future meetings for discussion, please contact Mr. Robert Geller of my staff at (573) 751-3907.

Sincerely,

DEPARTMENT OF NATURAL RESOURCES

Stephen Mahfood
Director

Enclosure

c: Mr. Mike Duvall, St. Charles County Division of Environmental Services
Mr. Dan Wall, U. S. Environmental Protection Agency
Weldon Spring Citizens Commission

Comments on Revision 1 of the Weldon Spring Site Stewardship Document for Operations and Maintenance September 2001

General Comments:
Department of Energy (DOE) proposes to complete a "a final revision, if needed" by the end of the calendar year. Unfortunately, Revision 1 makes extensive reference to the *Long-Term Monitoring and Maintenance Plan* and the *Institutional Controls Plan.* These two documents will not be revised until some later date. The current versions of the two referenced documents were previously reviewed by department staff and found to be significantly deficient. The extensive Revision 1 dependence on the content of these two plans makes it impossible for the department to conduct a thorough and accurate review of Revision 1. It is appropriate to finalize Revision 1 until acceptable versions of the other documents exist. This current set of comments from the department should be considered preliminary and incomplete, although comments are included that refer to the initial drafts of the *Long-Term Monitoring and Maintenance Plan* and the *Institutional Controls Plan.*

DOE's preparation and timing of the various stewardship document revisions seems to be driven more by having a document to discuss at the annual stewardship workshop, sponsored by the DOE Grand Junction Office (GJO), rather than a comprehensive plan detailing how future safety will be ensured. The current document reads like an outline of a plan rather than an actual plan to be implemented. If anything, a significant function of Revision 1 seems to be an attempt to limit the scope of the stewardship concept at the Weldon Spring Remedial Action Project (WSSRAP), rather than provide a robust effective plan for action. The department does not intend to give it any more credence than that. It would be inadvisable for DOE to underestimate our resolve to assure the citizens of Missouri that a true plan is in place (not just an outline or hope of a plan) to maintain the future safety and security of the WSSRAP site. Our resolve includes requiring DOE to provide an adequate funding mechanism to fully implement all aspects of tasks and oversight necessary to ensure future safety at the site.

Revision 1 contains several notations where at some future time DOE intends to "consider" Institutional Controls (ICs) for those areas not cleaned up to appropriate residential risk levels. The decision documents for the Chemical Plant, the Quarry, and the Southeast Drainage (SED) identifies institutional controls as a part of, or potential part of, the selected remedy. Institutional controls, as a part of a selected remedy, are required, not simply something to be considered. The remedy for those areas will not be complete until effective institutional controls have been identified and put in place. DOE has known institutional controls would be a part of the selected remedy in some areas for years; and we frankly find it irresponsible they have not yet identified or implemented the specific mechanisms to be used. Finally, it is our position that institutional controls are required, rather than to be "considered", for any areas (on or off the actual Chemical Plant or Quarry properties) impacted by underlying contaminated groundwater, and must be addressed in the Groundwater Operable Unit.

DOE Has Not Provided an Appropriate Post-Closure Plan for Comment
The DOE has committed to providing long-term stewardship documents in the Record of Decisions (ROD) which makes it a primary document with enforceable provisions. The most

fundamental threshold problem is that the three documents to which DOE refers to, as its draft long-term stewardship planning documents, are not detailed enough to be "primary" Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) documents. Environmental Protection Agency (EPA) pointed out this same problem in January, but DOE appears to have ignored the issue. DOE's draft documents appear to be background or supplemental documents, rather than the primary CERCLA document. Consequently, the state of Missouri is left to wonder how the Weldon Spring site will be managed with less than one year before DOE's schedule for beginning post-closure care. DOE has not yet drafted, and submitted for comment, the primary long-term stewardship documents. As supplemental documents the three documents are inadequate for a number of reasons, of which the state of Missouri has indicated in previous comments.

First, "stewardship" documents are not effectively written for any known or expected audience or user, largely because they lack sufficient detail to be useful. For example, DOE has failed to write them in a way they can be used by a future steward in undertaking the post-closure care tasks, and in addressing potential future circumstances and contingencies. A good test of the usefulness of the planning documents would be to provide them to a reasonable environmental professional who is generally familiar with the activities required for post-closure care of a waste disposal site, but who is not familiar with the particular details of the Weldon Spring site. It is unlikely such a person or team could use the DOE proposed documents to undertake effective post-closure care of the site. Instead of addressing this primary expected audience, DOE's documents have been drafted using a type of "insider talk" that would be impenetrable to all but the current management and technical team.

The three primary documents for the future of the Weldon Spring Site appear to have been written to fulfill a contemporary bureaucratic requirement rather than to serve the needs of site stewards, who will need a practical resource in the future. The documents read like what they likely are: a contractor (Morrison-Knudsen) writing to its client (DOE), rather than to the future steward or land user who would need to pick it up and use it to guide their actions.

The title provides the first hint the stewardship "document" was compiled without a clear purpose or context. This vague word choice ("document") reveals a lack of focus from the outset that make the expected terms, such as Operations Manual, or even Long-Term Stewardship Plan, not applicable. The document is too vague to be useful as an operating manual or plan. In some places it reads like a plan-for-a-plan.

The fundamental questions that appear to have been overlooked, before the staff began work in writing the "documents," include:

- Who is the intended audience?, and
- How is this "document" intended to be used?

Clearly, the documents are not detailed enough to be used as a manual for performing Long-Term Stewardship (LTS). It is not global enough to serve as a strategic discussion document. Second, the document seems confused internally about its purpose, and so it is difficult to comment on a document that itself seems not to know what it aspires to be. For example, this is apparent in Section 1.4.2 "Long-Term Effectiveness" indicates "the Stewardship Document

. . . is intended to . . ." But in the very next sentence it refers to "the plan," as if they were interchangeable. Is it a "document" or a "plan?" Let's be very clear; they are not interchangeable. A plan is a plan, and the "document" is not. In a particularly focused contradiction, the same paragraph denotes "the plan provides the framework for implementing operations, monitoring . . ." Is a framework considered adequate for providing a "plan?" What is needed is not merely a "framework," but a rather specific and detailed plan for implementing those activities intended to maintain safety at the WSSRAP. Time is too short to spend too much time on an elaborate "framework document," when a plan is needed to hand over to the site's steward(s). If this document is self-described as providing a framework, rather than a plan, then a separate LTS plan is needed.

DOE's Draft Plan Fails to Consider Applicable and Relevant Guidance and Resources. The three draft Weldon Spring Site stewardship documents repeatedly cite a report from 1998, by a volunteer stakeholder committee in Tennessee as the reference, as its guidance for a variety of crucial issues. For example, the July 2001, "stewardship document" (Section 1.4) refers to this stakeholder document for identifying "three fundamental attributes of stewardship [that] are essential to the successful implementation of this plan: responsibility, long-term effectiveness, and adaptability." This stakeholder report is useful but a wholly inadequate basis on which to develop a long-term stewardship plan.

Although DOE's Weldon Spring staff cannot be expected to be familiar with every detail of long-term stewardship planning nationally, and to cite and use all available resources, it is reasonable to expect they could have cited and used more than a sole Oak Ridge stakeholder document. The narrow use of the Oak Ridge stakeholder document is particularly troublesome as there is little relationship between the Oak Ridge site, which expects continuing non-EM missions, and the Weldon Spring site, a closure site. In restricting its vision to this stakeholder document, DOE ignores dozens of DOE guidance documents, reports, studies, articles, and books that DOE should consider and use in compiling its stewardship plan for Weldon Spring.

There are several categories in the numerous documents DOE's Weldon Spring staff should have cited and used as guidance in preparing its draft plan.

DOE Guidance

DOE guidance documents are the most obvious guidance DOE should be using. For example:

- US DOE-Office of Environmental Policy and Guidance, *Planning and Implementing RCRA/CERCLA Closure and Post-Closure Care When Wastes Remain Onsite* (DOE/EH-413-9910).

- U.S. DOE-Office of Environmental Policy and Guidance (EH) DOE-EH. August 2000. *Institutional Controls in RCRA & CERCLA Response Actions at Department of Energy Facilities*, DOE/EH-413-0004, August 2000.

- DOE/EM, *Long-term Stewardship Implementation Plan Guidance*, January 2001.

- DOE/EH, *Draft Interim Policy for the Department of Energy's Use of Institutional Controls*, January 2001.

Each of these DOE guidance documents direct users to prepare a more rigorous and detailed stewardship and institutional control plan than DOE has drafted for the WSSRAP. Nowhere in DOE's draft Weldon Spring stewardship documents are these guidance documents cited.

Other DOE Long-term Stewardship Documents, Reports and Studies

DOE has also published numerous documents which would have provided useful guidance for Weldon Spring:

- DOE, *From Cleanup To Stewardship: A Companion Report to 'Paths to Closure' and Background Information to Support the Scoping Process Required for the 1999 PEIS Settlement Study*, DOE/EM-0466, October 1998.

- DOE Office of Long-Term Stewardship (EM-51) October 2000. Long-term Stewardship Study--Draft. 167 pp. ("Notice of Availability" published October 31, 2000, 65 Fed. Reg. 64934.

Although neither of these DOE documents provided definitive guidance, there are numerous areas where their use would have significantly improved the Weldon Spring draft documents. For example, both documents offer broader definitions of long-term stewardship, and the scope of those responsibilities, than were addressed by the Weldon Spring draft documents, or provided by the Oak Ridge stakeholder report. It is our understanding that both of these documents required extensive DOE review and concurrence processes, before they were published (including the October 2000 draft study), so it is unclear why DOE chose to use guidance from the Oak Ridge stakeholder document instead.

Other Federal Agency Guidance

In addition to DOE's internal guidance and other publications, other federal agencies have issued post-closure care guidance that would have assisted DOE in drafting more effective stewardship planning documents. For example,

- U.S. EPA OSWER. *Institutional Controls: A Site Manager's Guide to Identifying, Evaluating and Selecting Institutional Controls at Superfund and RCRA Corrective Action Cleanups*, EPA-540-F-00-005. September 2000.

- U.S. Army Corps of Engineers, *Policy on Institutional Controls*, December 2000.

Because DOE self executes cleanup under CERCLA, both of these guidance documents are applicable, relevant and appropriate.

Independent DOE-sponsored Publications

Since the DOE-sponsored independent publication of the Oak Ridge stakeholder document to which the Weldon Spring draft refers for guidance, the DOE has published a plethora of additional reports and studies. Many of the reports and studies refer to the early Oak Ridge

stakeholder report, but they often go further in examining specific issues that would have been more useful to DOE in assembling its draft than the single Oak Ridge Stakeholder report. For example,

- Environmental Law Institute and Energy Communities Alliance. *The Role of Local Governments in Long-Term Stewardship at DOE Facilities*, March 2001.

This document would help DOE better understand the critical need to better involve St. Charles County in the stewardship planning process.

- National Academy of Public Administration. *Deciding for the Future: Balancing Risks, Costs, and Benefits Fairly Across Generations.* 49 pp. ISBN: 1 57744 050 1, June 1997.

A panel of government policy experts, including the late, former DOE Assistant Secretary of Energy for Environmental Management, Al Alm, compiled this report. It would help DOE develop "principles" for long-term stewardship, rather than relying solely on an isolated stakeholder document.

- Rocky Flats Stewardship Working Group. *Hand-in-Hand: Stewardship and Cleanup. Report from Rocky Flats Stewardship Working Group to the Rocky Flats Coalition of Local Governments and the Rocky Flats Citizens Advisory Board,* March 2001.

- Rocky Flats Stewardship Dialogue Planning Group. *Beyond Closure: Stewardship at Rocky Flats.* 53 pp. Convened by the Rocky Flats Local Impacts Initiative, April 1999.

These documents again reveal the stakeholder document chosen by DOE was not the only stakeholder document addressing stewardship, and that more recent options were available to DOE's Weldon Spring staff. A broad-based group involving state and local government officials, as well as stakeholders, compiled these reports. They address a wide range of post-closure care issues, which need to be addressed for effective protection of human health and the environment. They include a simple-to-use "Stewardship Toolbox" and significant discussion of land use /institutional controls and local government involvement, which were almost wholly omitted from any rigorous consideration in the draft DOE Weldon Spring document. If DOE was intent on rejecting it own guidance, reports, and those of other federal agencies, and use only stakeholder documents, it is not clear why DOE selected the older stakeholder document from Oak Ridge, Tennessee, instead of more recent stakeholder documents from Rocky Flats. The Rocky Flats document is arguably more directly applicable because both Weldon Spring and Rocky Flats are closure sites, whereas Oak Ridge is expected to have continuing nuclear weapons and research missions.

- Probst, Katherine N., and Michael H. McGovern. *Long-term Stewardship and the Nuclear Weapons Complex: the Challenge Ahead.* ISBN 0-915707-97-7, Resources For the Future, June 1998.

- Bauer, Carl, and Katherine N. Probst. *Long-term Stewardship at Contaminated Sites: Trust Funds as Mechanisms for Financing and Oversight. Discussion Paper 00-54*, December 2000.

- International Atomic Energy Agency (IAEA). *Maintenance of records for radioactive waste disposal.* IAEA-TECDOC-1097, July 1999.

- State and Tribal Government Working Group, Stewardship Committee, *Closure for the Seventh Generation*, February 1999.

- National Academies National Research Council, Board on Radioactive Waste Management, Committee on the Remediation of Buried and Tank Waste, Long-*Term Institutional Management of the U.S. Department of Energy Legacy Waste Sites*, August 2000.

Perhaps the most useful of these DOE-sponsored independent reports and studies, which the DOE Weldon Spring staff should have referenced in developing its draft, would have been the National Research Council of the National Academies. This report received national acclaim as a candid assessment of the capabilities and issues for the federal government in ensuring post-closure care at DOE facilities. It also provided the same type of elements and principles of post-closure long-term stewardship that the DOE Weldon Spring staff derived from the Oak Ridge stakeholder report. In addition, it included a critical warning about the "atrophy of vigilance" and the need for "defense in depth" and "redundancy," which seem to have been ignored by the DOE Weldon Spring staff.

We believe these DOE-sponsored independent reports and studies should not be relegated to gathering dust on a bookshelf. We expect DOE did not intend for its money spent on these efforts to be discounted or ignored by their own field staff. These are the same staff who actually compile the operational plans for LTS. DOE management appears to agree with our assessment of the value of using these analyses. In a letter to the National Academies of Science (NAS) regarding the report, DOE's Assistant Secretary for Environmental Management wrote, "[w]e expect that it will provide a useful blueprint for our work." The WSSRAP LTS planning does not even cite or acknowledge the NAS study, much less use it as a blueprint.

There are a number of ideas, issues, and frameworks that could and should be used as the Weldon Spring staff begins a serious effort to develop its post-closure care documents.

For example, the NAS report includes "Specific DOE Findings," which should be explicitly incorporated into the Weldon Spring documents as a context for planning. These findings include:

1. Almost all sites will require future oversight (the WSSRAP is not isolated and cannot expect unique attention),
2. Engineered barriers have limited lives and DOE is not planning adequately for failure,
3. Institutional controls will fail,
4. Conduct institutional controls performance assessments,

5. Remediation efforts do not always account for long-term institutional controls and management needs,
6. Present remediation should aim to facilitate possible re-remediation,
7. Models used in remediation decisions are inadequate,
8. Basic research is needed to improve long-term remediation effectiveness, and
9. Assessment of long-term impacts of private sector reindustrialization is needed.

The NAS report also includes "General Design Principles for Institutional Approach to Long-term Stewardship," which should be explicitly incorporated into the Weldon Spring planning:
1. Defense in depth - Layering and Redundancy,
2. Complementarity and Consistency,
3. Foresight,
4. Accountability: Ability to be Monitored and Enforced,
5. Transparency/Visibility,
6. Feasibility,
7. Stability through Time,
8. Iteration: Revisiting Site Disposition Decisions, and
9. Follow-through and Flexibility

Finally, the NAS report's "Specific Recommendations" should also be incorporated in Weldon Spring staff's planning:
1. Plan for Uncertainty;
2. Plan for Fallibility;
3. Develop Appropriate Incentive Structures (traditional government management approaches may not suffice for these very long-term activities);
4. Undertake scientific, technical, and social research and development; and
5. Plan to maximize follow-through on and adaptive long-term approaches (e.g. reindustrialization activities are not consistent with good LTS practices and so must be monitored carefully).

DOE's Draft Institutional Control Plans Lacks a Factual Foundation

This IC plan falls far short of providing confidence that the land use will be controlled effectively in the near future, much less the much longer period of time required. In fact, the IC Plan appears to be so lacking in factual support that it cannot be considered a serious effort worthy of extensive review. The plan uncritically lists a variety of mechanisms that are incorrectly asserted to be useful and effective as ICs. The purported controls have been found to be ineffective over long periods of time by every analyst who has examined the issue.

For example, the IC plan indicates proprietary controls will be used for half of the areas requiring ICs. Unfortunately, the problem with proprietary controls, such as easements or deed restrictions has the landowner as the responsible party for implementing the controls. The landowner usually has no incentive to ensure the controls succeed, because development restrictions can hurt the property's development potential and/or its resale value. This type of perverse incentive must be accounted for in constructing ICs and reinforces the need for redundancy. Already DOE has sought unsuccessfully to use such proprietary controls in Oak Ridge, Tennessee. In an attempt to reduce cleanup costs, DOE solicited private companies to

lease space in the "East Tennessee Technology Park" (formerly the K-25 site, formerly the Oak Ridge Gaseous Diffusion Plant). A National Academy of Sciences review of the plan found worker health and safety protections were inadequate. In their zeal to lease the space, DOE minimized the cleanup requirements (e.g., decontamination of walls was only required to a height of eight feet, allowing residual contaminated material to fall on top of workers below).

Similarly, DOE sought rapid transfer of the Hanford Reach area to the Fish and Wildlife Service (F&WS) in 1997, before the area had been completely surveyed to ensure all contaminated areas had been adequately identified to the satisfaction of the F&WS. The DOE was seeking public and bureaucratic credit for "cleanup," by reducing its land holdings and creating a new "National Monument." It was also hoping to reduce its surveillance and maintenance costs. All of these worthwhile goals were put on a collision course with long-term health and safety protection by DOE's asserted use of proprietary controls. These lacked any objective and independent verification mechanisms or sufficient redundancy to ensure post-cleanup duties did not "fall though the cracks."

DOE's Weldon Spring staff should begin its process of developing a useful IC plan with some background reading of some recent literature on the issue of institutional controls to familiarize themselves with the basics of the issues and challenges in developing effective controls. The DOE Weldon Spring staff may wish to begin with the guidance, studies, and reports that DOE itself published, sponsored, or participated in developing (e.g., EPA documents):

- U.S. DOE-Office of Environmental Policy and Guidance (EH) DOE-EH. August 2000. *Institutional Controls in RCRA & CERCLA Response Actions at Department of Energy Facilities,* DOE/EH-413-0004, August 2000.

- U.S. EPA OSWER. *Institutional Controls: A Site Manager's Guide to Identifying, Evaluating and Selecting Institutional Controls at Superfund and RCRA Corrective Action Cleanups,* EPA-540-F-00-005. September 2000.

- DOE/EH, *Draft Interim Policy for the Department of Energy's Use of Institutional Controls,* January 2001.

- Hanford Advisory Board, *Advice letter #63, Subject: Institutional Controls*, February 7, 1997.

- Environmental Law Institute. *Protecting Public Health at Superfund Sites: Can Institutional Controls Meet the Challenge?* ISBN #0-911937-85-4, 1999.

- Applegate, John and Stephen Dycus. November 1998. "Institutional Controls or Emperor's Clothes? Long-Term Stewardship of the Nuclear Weapons Complex". *Environmental Law Reporter News & Analysis* 28(11) ELR 10631-10652.

- U.S. Army Corps of Engineers, *Policy on Institutional Controls,* December 2000.

- Department of Energy, Carlsbad Area Offices, *Effectiveness of Passive Institutional Controls in Reducing Inadvertent Human Intrusion into the Waste Isolation Pilot Plant for Use in Performance Assessments*, November 14, 1996.

- Department of Energy, Sandia National Laboratories, *Expert Judgement on Markers to Deter Inadvertent Human Intrusion into the Waste Isolation Pilot Plant*, 1994.

- Probst, Katherine, Resources for the Future, *Linking Land Use and Superfund Cleanups: Uncharted Territory*, 1999.

- Jones, Barbour, and Layton, Lawrence Livermore National Laboratory, *Institutional and Structural Controls for Limiting Human Exposures to Toxic Substances at Contaminated Sites: A Preliminary Evaluation*, December 1993, ULRL-JC-115655.

- Pendergrass, John, *Use of Institutional Controls as Part of a Superfund Remedy: Lessons from Other Programs*, Environmental Law Report News & Analysis, 26 ELR 10109-10123, March 1996.

DOE should also develop a process for involving local governments and stakeholders (including real property developers) in its IC Plan process. We believe this could be a useful component of a broader workshop or symposium sponsored by DOE.

DOE Should Address Other Contingencies and "External" Factors

There is broad agreement that the paramount issue for an effective LTS plan is protection of human health and the environment. This protection is accomplished by ensuring the waste and contamination is kept away from people and sensitive environments ("receptors") as much as is reasonably achievable. The potential for jeopardy to human health and the environment is identical, whether the waste moves to the "receptors" or the receptors move to the waste and contamination.

Unfortunately, the DOE's draft stewardship plan appears to focus solely on the stability of the wastes, blind to the equally important factors which could allow people to move inadvertently toward the waste (i.e., building houses, daycare centers, playgrounds, sandboxes, digging foundation and utility trenches). Under DOE's myopic LTS planning view (see e.g., Table 1-2, page 8 – "DOE Stewardship Decisions Points"), the world will remain stable around the waste - no houses or highways will be built, no fiber optic cables will be laid into utility trenches, and no playing fields will be graded. The apparent paradigm being used is for a stable environment in which the site hazard will gradually decrease, and the goal of the LTS plan is to measure that decrease and potential migration. This is a totally unrealistic worldview that omits the more challenging half of the risk analysis equation, which involves consideration of institutional and social issues. Certainly, it would be easier to draft a plan that simply estimates and measures technical factors such as erosion, and uses Darcy's Law to calculate ground water movement. Unfortunately, such a plan would be neither useful, nor effective, nor interesting.

DOE's one-dimensional view of a multi-dimensional problem is contrary to years of statements by DOE that it was necessary to use the best science and technology, and to consider a variety of

factors in planning for stewardship. It appears DOE's statements are vacuous when translated by its field offices. The inadequacy of DOE's plan should send a clear message out far and wide to whoever might consider allowing DOE to declare a site "closed," in return for a promise it will ensure an effective long-term stewardship program. Based on the evidence presented by the draft Weldon Spring plan, any state considering a DOE proposal to leave waste on-site should think long and hard about accepting DOE's assurances the site will not present any risk to human health and the environment. Additional scrutiny should be placed on DOE's promise to provide an effective long-term stewardship program and to invest in continuing investments in science and technology. Unfortunately DOE's inadequate LTS planning, with no science and technology investments, forces states into the position, on behalf of their citizens, of demanding DOE perform more extensive cleanups, with less residual waste or contamination. Regrettably, this rational response to DOE's ineffective LTS planning could increase costs and stifle useful science and technology investments. However, DOE's LTS planning promises appear to be empty, based on the draft Weldon Spring plan. Any state that continues to accept DOE promises about future long-term stewardship protection, could find that for generations of citizens, they have inherited nothing but an ill wind.

The DOE's draft stewardship documents also fail to consider reasonable contingencies. Immutable laws of physics indicate the Weldon Spring waste will last for billions of years. It is not reasonable that DOE could foresee contingencies for this period or even a tenth or a hundredth of this expected life of the wastes. However, DOE's documents fail to consider events that could easily be only five years down the road. Events could occur between review periods, which would have to be monitored, detected, and addressed outside of the five-year review period.

The draft DOE stewardship document (page 7) indicates the stewardship document have been designed to provide the flexibility for the program to adapt to changing physical conditions. There is no indication, however, of which elements of the remedy were designed to adapt to changing physical conditions. At the Fernald site, by contrast, DOE has conducted extensive research on ensuring the sensor devices were replaceable and robust.

Moreover, there is the broader question whether DOE's draft documents themselves have been designed to adapt to changing institutional conditions. For example, there is no consideration given to a number of reasonable events, such as:

- Legal dissolution of DOE,
- Change in state funding (proposed to be cut in DOE FY 2002 budget request),
- Shift in county (one of the fastest growing counties in the U.S.), and
- Shift in population and land use (predictable given the appeal of location near Francis Howell High school).

Finally, the draft plan does not appear to be integrated with the normal three-year budget planning timeline cycle, used by the federal government, between the budget development process and the budget execution process.

DOE Must Clarify its Post-closure Decision Making Proposal

In a letter to the State and Tribal Governmental Working Group (STGWG), responding to their report "Closure for the Seventh Generation," DOE said,

> "We believe that if, after a site has been remediated to levels appropriate for the specified land use, communities decide they desire further cleanup to allow for less restrictive land uses, then the cost of such additional cleanup should not be borne by the Department of Energy." [1]

This policy is particularly disturbing in light of the WSSRAP LTS framework, which indicates no consideration of DOE response to "non-physical" events, such as changes in land use. Potential changes in land use for the Weldon Spring site must be considered seriously, given the development dynamics in the St. Charles-St. Louis area. Residential development is accelerating rapidly into St. Charles County. It is not only conceivable, but also predictable that the land use for the Weldon Spring area could change in the foreseeable future. Although it is unlikely that the changes would require exhumation and removal of the disposal cell, other residual contamination could require removal (e.g., vicinity properties, and streambed hot spots). Also, land use controls and ground water restrictions could require changes to address changed land use circumstances.

Even though much of the property surrounding the Weldon Spring site is presently owned or controlled by the state or federal government (Army property, Conservation) major changes in ownership and use could be envisioned as St. Charles County expands. Clearly, the conversion of the former Ordnance Work property to the University of Missouri Research Park is an example.

If DOE fails to change this seemingly rigid policy regarding abrogating responsibility for dealing with future land use changes, then it forces states and local governments to seek the most extensive cleanup possible during the first ROD. Otherwise states and local governments could be left holding the bag for any future cleanup needs. There are numerous alternatives and more reasonable scenarios. It is understandable DOE wishes to avoid an open-ended checking account to pay for whatever cleanup may be desired by the whim of subsequent land use changes. However, DOE could work with the state and local governments to consider a process whereby proposed land use changes is subjected to an evaluation process. A process that examines the need for the land use change, the health and safety requirements, alternatives to land use changes for contaminated areas (e.g., other potential development locations), and possibly some type of cost-sharing formula and dispute resolution process is needed. What is not acceptable, however, is DOE submitting a proposed LTS plan, as they have in the case of the WSSRAP, and ignoring the consequences of future land use changes, and remaining silent locally on an implicit national policy that could have calamitous consequences for states and local governments.

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[1] Letter from James M. Owendoff (DOE) to Armand Minthorn (Umatilla Tribes) and Tom Winston (Ohio EPA), Co-chairs of State and Tribal Government Working Group. May 24, 1999.
(See http://lts.apps.em.doe.gov/center/reports/pdf/doc203.pdf at page 5 of 9).

Specific Comments on Revision 1

1.2-2 Recycled uranium, which was also processed at the Chemical Plant, should be listed.

1.3-1 Did the values selected for cleanup criteria take into account the additive effect of different contaminants present at the same location? If not, why not? Has the combined residual risk been considered in sampled locations containing multiple contaminants? Please consider and respond to this comment, as it applies to all areas where contamination was investigated and/or remediated.

1.3-2 For those subsurface areas not remediated to surface criteria, what mechanism will prevent erosion or excavation and subsequent exposure of materials contaminated at higher concentrations? It seems a simple matter to expose a layer of soil only six inches below the ground surface.

1.3-8 We previously commented "At least two uncharacterized areas of groundwater contamination exist as part of the Chemical Plant site. Groundwater contamination in perimeter areas, such as the 5300 and 6300 drainage, should be included in the listing." Reference is made in this paragraph to the fact that springs in these drainage areas are sampled; however, the fact that they "are sampled" has little bearing on long-term stewardship. Also, the areas are not identified as requiring IC. All areas underlain by residual groundwater contamination require protection by appropriate institutional controls.

1.3-10 References the *Institutional Controls Plan.*

1.4-1 It is true that various stewards and stakeholders may provide important functions in the stewardship process. The DOE seems to be willing to impose a responsibility on stewards and stakeholders, but have so far been unwilling to provide funding to carry out the "expected . . . responsibility." The DOE has ultimate responsibility for ensuring health and the environment is protected from historic and current federal government decisions and actions, which created the potential threat. This includes providing adequate funding for the identified actions or responsibilities assigned to or envisioned by other stewards.

1.4.3-1 References the *Long-Term Monitoring and Maintenance Plan.*

1.4.3-2 References the CERCLA five-year review process. We have commented previously that this process has proven unreliable in application to previously closed sites. We expect the five-year reviews conducted at WSSRAP to be more comprehensive and certain than the CERCLA process has proven to be. To that end, DOE should identify a specific and detailed review process that can be conducted concurrently with CERCLA, but is not dependent on the process. The department intends to be a participant through the entire five-year review and evaluation and fully intends to be funded in the effort by DOE.

1.4.3-3 We disagree with any modification of the final stewardship documents unless direct stakeholder review and input is sought and considered before the proposed change. We fail to understand how changing the frequency of groundwater monitoring is not a fundamental change in the groundwater monitoring "activity." For instance, is a change from one sample per quarter to one sample per century significant?

1.5-3 Institutional controls were also identified as needed in the SED.

2.1-3 The last sentence in this paragraph, dealing with funding, discounts the effectiveness of the entire stewardship concept, as it is currently envisioned for the WSSRAP. That is "The scope of these activities may be dependent on available funding for each fiscal year." A secure source of funding must be established for implementation of routine components of the final stewardship plan.

2.2 Table 2.1 identifies numerous "stewards" and responsibilities. Has DOE developed or attempted to develop formal agreements with any of these "stewards" to ensure they intend to accept their "responsibilities." Please detail these efforts and any responses from the potential "stewards." Various local, state, federal regulations, and DOE orders are referenced. Please provide a detailed and specific listing of each regulation and order considered applicable during the stewardship period.

2.3 References the *Long- Term Monitoring and Maintenance Plan.*
The remainder of this section is too general (deferring to the referenced LTM) to warrant further comment at this time. However, we want to register strong disagreement with reliance on the CERCLA five-year review process where the regulated party, DOE, conducts the review, interprets the data, and prepares a report for regulatory agency review. We intend to be a full participant in a five-year review process which includes state involvement as the review is being conducted and expect DOE to fund that participation. We also reject the concept that the GJO is the appropriate agency to reduce sampling frequency or revise the "long-term monitoring plan/IC Plan." with no prior input from other stewards.

2.4 References the *Institutional Controls Plan.*
The description of the concept of an IC Plan presented in this section is too general to warrant comment at this time.

2.5 References the *Institutional Controls Plan.*
This issue related to information management has been commented on previously and DOE has apparently chosen to ignore our position. The public library archive has not been properly checked or maintained during the actual presence of DOE personnel at the WSSRAP. We have no reason to expect any improvement when the responsible DOE office is a thousand miles away. The Information Center also seems an unlikely repository for an available, ordered paper record of

relevant documents, as it will be unmanned and receive even less scrutiny during operation than a Public Library. We reiterate our expectation that DOE will develop an easily accessible hyper-linked electronic database, of all pertinent stewardship documents, with those historic documents included by reference. The five-year review period can effectively be used to evaluate the currency of the electronic format and update it, if necessary. DOE maintains it has implemented a state-of-the-art remediation at the WSSRAP. The documents comprising the information system ensuring future site security should be no less advanced.

2.5.2 The WSSRAP contaminants will remain hazardous for millions of years. Why then would DOE consider destroying documents after only ten years?

3. We reiterate our comment that DOE should develop a proactive public participation process including well-advertised annual meetings to enhance and maintain interest and knowledge about the site.

Appendix A We appreciate the inclusion of this appendix and agree the estimate presented appears to be appropriate for the listed items. However, the estimate is directly related to the *Long-Term Monitoring and Maintenance Plan* and the *Institutional Controls Plan*. Sample frequency, monitoring of vicinity properties, inspection scope, and other components in this cost estimate are not adequately addressed in Revision 0 of these two documents. We have previously noted deficiencies in these documents and, to the extent the cost estimates are based on the original drafts of these plans, we would also expect the estimates to be low. We also note four thousand dollars per year is a grossly insufficient amount to budget for necessary oversight and involvement of "Other Participants," which Section 2.3 identifies as "DOE consultants and state and local agencies." We propose to work directly with DOE to develop an appropriate cost estimate for state oversight during the stewardship period.

Response to DOE Response to Comments on Revision 0 of the Weldon Spring Site Stewardship Document for Operations and Maintenance

DOE has not responded to general comments made on Revision 0, which we consider important and worthy of answer.

The plan proposes to view the "stewardship" issue from the perspective of 30 or 200 years, depending on which regulation is referenced. Materials at the site will remain radioactive for many thousands of years. A responsible approach would seem to require DOE to take a longer view of stewardship than that indicated in these documents. In addition, the plan seems to consider stewardship as something that will be implemented by someone with significant knowledge of historic and current site configuration, design details, remedial activities, and residual contaminants, i.e., someone who has been involved with the WSSRAP for many years. It is more reasonable to present this issue from the perspective of and with the detail required by, the probable future user who will have responsibility for implementing long-term care of the site after remediation is completed. This user will not have the extensive background knowledge and detailed understanding or information that seems to be assumed in the current plan.

The plan must be adaptable to operate effectively through the future. To effect this, significant review of the plan and site conditions are tied to the CERCLA five-year review process. The department does not believe this is the most effective method to maintain currency of the plan or security of the site. In practice, the CERCLA review process has not been consistently enforced by EPA, and is therefore not reliable for this purpose. A specific, detailed, and rigorous review process should be identified in the plan that may be conducted concurrent with the CERCLA process but is not dependent on it. The department recommends a comprehensive review after two years of post-closure operation and again three years later (after five years of post-closure operation). A five-year interval may be appropriate thereafter. The plan should indicate the review shall be conducted whether or not a CERCLA review is completed.

1.3-3 Revision 1 does incorporate verbiage regarding current monitoring of springs in the 5300 & 6300 drainage areas; however, the aerial extent of property underlain by contaminated groundwater has not been delineated. This must be accomplished before a determination of all property requiring institutional controls can be finalized.

1.3-8 Again, institutional controls are a requirement, not a matter to be "evaluated."

1.4.3-3 Is DOE prepared to provide a technical basis to assure the department that the Disposal Cell will never fail and that residual contaminants will not be released to the groundwater? If not, then we will require appropriate, ongoing groundwater monitoring. If it is believed that "protective goals" have been achieved in the Groundwater Operable Unit then monitoring for a suitable verification period after that determination must be included and oversight agency agreement on the cessation of monitoring is required.

2.3 Reference the *Long-Term Monitoring and Maintenance Plan.*
We acknowledge DOE's bulleted items as examples only. They are not to be interpreted as verbiage intended to place limits on or define the actual types, details, or frequencies of operations to be conducted. We defer further comment until an acceptable LTM Plan is submitted for review.

2.3-1-5 We anticipate specific details on how this will be evaluated and achieved in the next LTM Plan revision.

2.3-1-6 The department did not agree that this overall approach was appropriate.

2.3-7 Again, we do not agree that the regulated entity representative, in this case DOE-GJO, should be responsible for decisions of this type without oversight agency concurrence.

2.3.5 For the record, we note our continuing objection to DOE's reluctance to provide a secure method for funding stewardship activities necessary to maintain and document future safety at a site made hazardous by federal government activities.

2.3.9 We reject the continuing reliance and reference to the limits placed on this process by CERCLA. The WSSRAP represents a potential threat that will remain hazardous for millions of years. Far beyond any possible timeframe envisioned by the drafters of CERCLA, a statute primarily aimed at chemically contaminated sites where the hazards would be expected to degrade over time. Radioactive wastes will not. We intend to be a full participant in a five-year review process, which includes state involvement as the review is being conducted, and expect DOE to fund that participation.

2.4.-1-4 We do not agree, by simply stating the property is owned by the federal government (or state government for that matter), this is sufficient to ensure on-going safety. The approach envisioned by this assumption has failed at other government-owned facilities; and we see no action by DOE, which would prevent failure at the WSSRAP.

2.4-1-4 Unenforceable advisories and warnings seem to be of little value. We hope DOE is not under the delusion that the state will accept these as stand-alone appropriate and sufficient institutional controls for the WSSRAP.

2.4-2 It is our position that appropriate institutional controls must be identified and in place before the stewardship documents can be recognized as complete and final documents.

2.4-3 We defer acceptance of DOE's response to this comment until review of the revised Long-Term Monitoring & Maintenance Plan.

2.5 Refer to the Revision 1 comment on this section stated above. We are unwilling to wait on some national system to resolve current stewardship questions at WSSRAP. If DOE plans to rely on this future system to ensure easy access to documents critical to implementation of the stewardship Plan, we expect a staffed library at the site in the interim to maintain an orderly, accessible record and to assist those needing ready use of the referenced documents.

2.5.1-1 DOE apparently misunderstood our comment. We are asking for an index of site documents that includes a detailed summary (perhaps the document abstract or introductory section) as a part of the index.

2.5.2-2 See response to 2.5.1-1.

2.5.3-1 Refer to the Revision 1 comment on this section stated above.

3. Refer to the Revision 1 comment on this section stated above.