Chemical Plant Groundwater Operable Unit Public Meeting
Question Submission Form

August 13, 2003
Weldon Spring Site, St. Charles, MO – Interpretive Center

You may use this form to submit questions or comments to be addressed during the Public Question and Comment Period of this meeting. Oral questions will also be accepted at that time. Please return completed forms to the question box by the meeting room entrance or submit to Wendy Drnec or Wendee Ryan.

I have prepared comments that include several specific questions related to the FS for Chemical Plant GWOU. ALT. 3

Q1- How much is cost of factors choosing Containment a factor in choice

Q2- What about additional active treatments (Fort Lewis WA) - why cannot they be used. Fort Lewis says baseline TCE in 40 years.

Q3- Is MDNRs oversight role being compromised by shortage of long-term funding from DOE?

Name (optional): Dan McKeel MD 8-13-03

In addition to Oral + Written comments.

Comments on the "*Proposed Plan for Remedial Action for the Groundwater Operable Unit at the Chemical Plant Area of the Weldon Spring Site, Weldon Spring, Missouri*" dated August 2003

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Public Meeting August 13, 2003
Weldon Spring Interpretive Center

by

DANIEL W. MCKEEL, JR., M.D.

(Option to amend and extend these remarks during the August 4 - September 3 comment period based on the discussion at the 8/13 meeting)

See 3 questions on Blue Card

Contact Information:
Daniel W. McKeel, Jr., M.D.
5587-C Waterman Blvd.
St. Louis, MO 63112
Phone: (314) 367-8888
Fax: (314) 367-7663
E-mail: dan@wubios.wustl.edu
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ORAL COMMENTS
Daniel W. McKeel, Jr., M.D.
August 13, 2003

1. Like the original August 9, 2003 LTSM document, this PP is too brief and lacks many essential details. It, too, appears to be very premature and incomplete. In particular, the sections on pages 14-15 dealing with triggers and contingency plans where DOE and MDNR differ totally lack specifics. Examples: (a), page 15, "Within the plumes, the trigger concentrations will be representative of historical highs"; (b) At the springs, the trigger concentrations will consider health-based values and historical trends." This type of wording is so vague that no regulatory or sicientifc meaning flows from it -- what are "health-based values", for instance? How will historical highs actually be used to set triggers?

2. There has been no opportunity thus far for general public comments on the process whereby remediation alternatives have been selected. As a result...

3. The **three chosen Alternatives do not encompass all reasonable, tested scientific options**. I favor a Fourth Alternative, active treatment based on latest technology, using the GW remediation at the Fort Lewis, Washington Superfund Site as a model to achieve unrestricted use in 40 years versus the preferred Alternative 3 that will take 100 years to comply with ARARS.
   - **I have the perception that cost and time were given undue consideration over protecting the public health and the environment.** These are goals that DOE, EPA and MDNR all endorse on paper but do not fully support as judged by the weak groundwater remediation efforts over the past several years since the public demanded remediation be attempted. Judged on performance achieved, a low performance score is merited based on the pilot study results.

4. I offer as proof of statement [2] the selected groundwater remedy chosen at the Fort Lewis, WA Superfund site where uranium and TCE are also major COCs. There, multiple innovative GW treatment options are being employed to reduce the original estimate to return the site to unrestricted use from 60 to 40 years. Alternative 3 offered in the PP for Weldon Spring will take 100 years to satisfy all ARARS, an *unacceptably long period of time*.

5. The **Interceptor Trench design** was poorly engineered from the outset so that only only one of three sump pumps removed significant uranium-bearing groundwater. The excuse offered that the two year test period was especially dry (low rainfall) is not valid. Weather conditions in this area could have been forecast more accurately and a design made that allowed all 3 pumps to operate effectively. This was not done, and EPA, DOE and MDNR in concurring on the design and its implementation are at fault for not giving this proven and establsihed remediation technology a better try.
   - In addition, the initial amount of total uranium burden was recalculated from 85 to 1450-2380 kg near the end of the two year trial period. Using the original

figure, the 10.6 kg removed would have surpassed the 10% threshold based on the 85 kg original estimate of total uranium burden. The trench strategy would then have had to be scaled up for long term treatment. Instead, DOE recalculated the starting amount, making the result achieved less than the 10% trigger point for further remediation. This raises concerns the start level was adjusted specifically to obviate the need to employ trench technology for long term remediation of the groundwater.

- Further fuel for the speculation that the Interceptor Trench work was not meant to meet goal, is the way DOE rapidly dismantled the trench over strenuous objections by MDNR. The Weldon Spring Citizens Commission and EPA stood by and acquiesced in this disappointing maneuver which was not justified at all to the general public. It was just done prematurely and furtively with little or no public discussion, like the proverbial Biblical "thief in the night."
- U.S. DOE owes the public an explanation for this premature destruction of a potential public and state asset. The Interceptor trench tool might become useful again in the future if certain still undefined trigger conditions and contingency plans require further uranium remediation in the future (see [1]).

6. The TCE oxidation attempt was partly successful and TCE was neutralized, but was the pilot work optimally designed to achive maximum remediation of the TCE? Again, one can turn to the Fort Lewis paradigm. It becomes clear that TCE oxidation treatments would have to be employed for several decades rather than the foreshortened test period that was actually employed and then on PP page12 are summarily dismissed: **"(quote) Active treatement alternatives have been thoroughly investigated and discarded as ineffective. (endquote)".**

7. During several long term stewardship public workshops, representatives from MDNR exhorted DOE to employ new and emerging technologies at Weldon Spring site. Yet the pump and treat and TCE oxidation methods of old alone were employed. It is estimated that 80% of atomic weapons related Superfund sites have contaminated GW, and TCE and uranium are common COCs. Why, then, have the newer technologies being employed successfully at such sites as Fort Lewis in Washington not been explored at WSS?

8. I am puzzled why the uranium contamination of GW lying beneath Katy Trail is not addressed in this proposed plan? Is this the PP for all GW at *both* The WSS and former WSOW sites? This is not clear in the PP.

9. The usage of warning signs as Institutional Controls should be addressed explicitly. The public has an absolute Right To Know the specific GW contaminants. The argument there is no risk is fallacious, otherwise there would be no need for monitoring or ICs -- *Res Ipsi Loquitor* -- "the thing speaks for itself." There is no low dose radiation threshold--any dose poses some risk.

- I reject EPAs concept that an arbitrary Health Index of 1.0 should be a trigger point for addressing potential harm to human health. Why? Because the assumption that we begin at a baseline of 0.0 (zero) is untrue. We all carry complex bodily burdens of pesticides, harmful chemicals and the cumulative radiation burden of the too-often cited **300 mrem annual "natural background" exposure**, plus other amounts accrued through numerous diagnostic mammograms, GI studies, chest x-rays, etc. In short, I believe both DOE and EPA often grossly underestimate human risk, relying too much on the calculations of Health Physicists who are just that, experts on radiation doses, but not necessarily even radiobiologists who have carried out radiation experiments in animal models. Only physicians in our society are legally qualified to make medical diagnoses of human illnesses, to prescribe medical treatments for humans, and have the real world training to fully understand the potential harm due to chemical and radiation-induced diseases through hands-on experience with people under their care.
- Where are the licensed MDs in this process? ATSDR rendered health assessments in 1995 and 1997, but this was years before DOE admitted recycled uranium had been used at Mallinckrodt-AEC sites, or when TCE contamination of GW was first noted at Weldon Spring Site. The two ATSDR health assessment reports of 1995 and 1997 did not cover these substances at all. RU implies the presence of transuranics such as plutonium and technetium, traces of which have been demonstrated at Weldon Spring Site.

10. The paragraph on page 7 of the PP beginning "The Missouri Department of Health..." is referenced on page 18 (Basko) as an e-mail communication with B. Cato at WSSRAP dated May 22, 2003. ***I obtained a copy of this e-mail communication under the Missouri Sunshine statute***. I was surprised to learn that EPA had suggested that this language be inserted in the PP, and that DOE had written this exact language before DHSS had transmitted the relevant data files to them. I further discussed this issue with Mr. Gale Carlson of DHSS who supervises Ms. Basko. My concerns about the validity of this statement remain until I am allowed to examine all well test data on which the claim is based.

11. The PP does not explicitly document the nature and threats to human health and the environment of uranium, TCE, nitrates and nitoraromatics, the principal GW COCs. This deficit in the report needs to be addressed. Physicians with MD degrees, in addition to Health Physicist Ph.D.'s, should be involved in writing and peer-review editing of this section of the PP. ATSDR and Missouri DHSS might be called upon in this regard. DOE should fund further monitoring of adverse health effects to the fish in Busch Conservation area lakes 34-36 and in the Femme Osage slough since both are used by the public for fishing, and the fish are consumed as food.

--- end of oral remarks ---