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STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

Bob Holden, Governor • Stephen M. Mahfood, Director

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JUL 14 2003

Ms. Sharon Cotner, Project Manager
U. S. Army Corps of Engineers
8945 Latty Avenue
Berkeley, MO 63134

RE: Feasibility Study/Proposed Plan (FS/PP) for the St. Louis North County Site, May 1, 2003
Formerly Utilized Sites Remedial Action Program (FUSRAP)

Dear Ms. Cotner:

The Record of Decision (ROD) for the FUSRAP North County site is possibly the single most important document regarding cleanup of radioactive contamination by the U.S. Army Corps of Engineers (USACE) in the St. Louis area. I hope it will not be the last opportunity for citizens of the state of Missouri to comment on the effectiveness of the cleanup and the transition to long-term stewardship. I am pleased with the opportunity to provide our perspective and comments on the key documents that form the basis of this decision. St. Louis citizens deserve a cleanup protective of human health and the environment after being burdened for over fifty years with the stigma of federal waste on private property from our nation's nuclear weapons program. Although private individuals and local governments own the properties to be remediated, the waste is federal responsibility. We must provide for a cleanup now and stewardship of the site into the future.

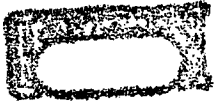
I appreciate the work the USACE has completed thus far and look forward to working together to develop and implement an acceptable ROD. However, the preferred alternative identified by the USACE (Alternative 5), does not meet my expectations. Ideally FUSRAP contamination would be cleaned up immediately to unrestricted levels and properly disposed of, but this is not a practical cost-effective expectation as some of the contamination is inaccessible. In the meantime, contamination that is currently inaccessible must be managed to minimize any negative impacts to the public or the environment until it can be safely removed and disposed of at an appropriate site. Alternative six (6) seems to provide that protection and may be acceptable with revisions that address the following key concerns:

Long-Term Stewardship Plan. A comprehensive long-term stewardship plan is a missing part that is essential as it defines proper management of waste materials until they are removed or of residual contaminants as long as they pose a threat. Effective stewardship planning requires, the



Integrity and excellence in everything we do





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Department of Energy (DOE) to be included if they are to be reliable site managers following cleanup. The final stewardship plan must clearly identify not only a detailed technical plan for monitoring, surveillance and maintenance responsibilities, but also must include funding sources and an independent enforcement authority.

- ❖ **Post-remediation Risk Assessment.** Comprehensive post-remedial risk assessment reports must be included to account for the level of radionuclide and chemical contaminants remaining. This approach should help answer future questions regarding the effectiveness of the actual cleanup as well as providing a decision matrix to identify what, if any, use limitation or controls must remain.
- ❖ **Other Contaminated Buildings.** In the vicinity of the Hazelwood Interim Storage Site, buildings remain on private property, which have radioactive and possibly chemical contamination from the government's waste products. Characterization of this contamination, criteria for remediation and a cost estimate of the work are needed.
- ❖ **Institutional Controls.** Institutional controls must be well defined and undergo the same evaluation as any other component of the remedy, including costs. To achieve the necessary protectiveness, they must be durable, reliable, enforceable and consistent with the risk posed by the contaminants. Without compromising their protective function, they must also not prohibit appropriate development or reuse of the property.
- ❖ **Coldwater Creek.** Remediation of Coldwater Creek, whether above or below the mean water level, needs to achieve the same protective standards as the other impacted sites. If this cannot be achieved economically, then rigorous monitoring and procedural safeguards are needed in the stewardship plan.
- ❖ **Groundwater.** Groundwater must be monitored to ensure that no additional adverse impacts occur to Coldwater Creek, or the drinking water (lower) units, from contamination at these sites for as long as threats exist. A monitoring network that includes action levels and contingency plans are required to assure current and future generations that the remediation is protective.
- ❖ **Applicable or Relevant and Appropriate Requirements (ARARs).** All ARARs must be recognized and included in the final ROD. Currently the plan only states that these items will be met but not necessarily be included in the ROD. Some of the needed ARARs include the Safe Drinking Water Act, Missouri's monitoring well construction Code, Missouri's Solid Waste Management Laws and Regulations, Missouri General Protection of Groundwater Quality and Resources; Missouri Radiation Regulations-Protection Against Ionizing Radiation, Disposal of Radioactive Wastes, Hazardous Material Transportation Regulations (49 CFR Part 171 & 172, Clean Air Act (40 CFR Part 61 Subpart I dealing with limits on radionuclide emissions to the air), and RCRA Generator and characterization

requirements. The state's letter of September 17, 1998, contains a complete list of ARARs and reasons for their use.

- ❖ **Thorium Cleanup.** The cleanup criteria proposed for thorium is not consistent with the EPA standards in the Uranium Mill Tailings Radiation Control Act (i.e. 5/15 for radium and thorium), nor does it meet the St. Louis Site Remediation Task Force recommendation. The stated goal for the North County sites is unrestricted future use. Due to this, the reasoning for leaving residual thorium contamination at a higher level is unclear. The more waste removed leaves fewer sites where use restrictions or controls must remain.
- ❖ **Ecological Impacts.** The preliminary screening for ecological risk is not adequate to evaluate impacts to Coldwater Creek, nor is it sufficient to assess natural resource injury. A thorough ecological risk assessment is required.
- ❖ **Federal Facility Agreement.** I ask that the federal agencies amend the Federal Facility Agreement to include the state as an equal party. Although the U.S. Environmental Protection Agency and the USACE have acknowledged our involvement and participation, the Comprehensive Environmental Response, Compensation, and Liability Act legislation (§120) clearly supports the states with a formal role in these cleanup agreements, and we desire to exercise that option.
- ❖ **Public Input.** The formal public meeting held May 29, 2003, did not provide an opportunity for discussion. Citizens were only able to voice their concerns. You should provide an additional forum prior to finalizing the ROD to inform them if their concerns were addressed or have an opportunity to discuss agreed to resolutions. While the criteria for a public meeting was met, I do not believe the public's best interests were served without an opportunity to exchange in constructive dialog to discuss their concerns, questions and reasoning. Before any portion of the site transitions to the DOE for stewardship, I request a similar opportunity occur.
- ❖ **West Lake Landfill.** At the public meeting, the public reminded us that legacy waste from the North County site is improperly stored at the West Lake Landfill. The federal government has administratively separated remediation of West Lake Landfill and the North County sites. I ask that actions proposed for the North County sites also consider cleanup of the federal waste at the West Lake Landfill site.

Further documentation of these concerns is included in the enclosure. Clearly, everyone wants all accessible sites, including Coldwater Creek, cleaned up to levels that provide for an unencumbered use. Further, a clear plan is needed for those inaccessible areas that provides for monitoring of the area, assuring no further spread of contamination and direction of action when the areas become accessible for cleanup.

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My staff and I look forward to maintaining this cooperative effort, including preparation of the responsive summary and on the development of the ROD. We fully support a continued partnership with you, the EPA, as well as DOE and the affected community in this vitally important task at hand.

I thank you for the opportunity given to review and comment on the FS/PP for the St. Louis North County Site. If you have questions or require any further clarification of the comments made please call me at (573) 751-4732, or you may contact Mr. Robert Geller of my staff at (573) 751-3907. Direct written responses or concerns to my attention or to Mr. Geller at P.O. Box 176, Jefferson City, Missouri 65102-0176.

Sincerely,

DEPARMENT OF NATURAL RESOURCES


Stephen Manfred
Director

SM:rgd

Enclosure

c: Mr. Ric Cavanaugh, Co-Chair, St. Louis Oversight Committee
Ms. Anna Ginsberg, Co-Chair, St. Louis Oversight Committee
Mr. James Gulliford, Director, U.S. Environmental Protection Agency -Region VII
Ms. Jessie Roberson, Assistant Secretary-Environmental Management, DOE
Honorable Francis Slay, Mayor, City of St. Louis
Mr. Buzz Westfall, St. Louis County Executive

Enclosure
MISSOURI DEPARTMENT OF NATURAL RESOURCES
Detailed Comments on the Feasibility Study/Proposed Plan (FS/PP)
for the
St. Louis-North County (NC)
Formerly Used Sites Remedial Action Project (FUSRAP) sites

GENERAL

Alternative Selection

1. We desire a remedy that removes ALL contamination and eliminates the need for long-term care and institutional controls. However, we recognize it is not practical or cost effective to immediately remove contamination at inaccessible areas at this time. Alternative 6 with proper revisions comes closest to the desired goal. When the contamination under the roads, buildings and rail lines is accessible, we expect the federal government to remove the waste and adequately dispose of it. In the interim, those areas must be adequately managed to keep track of the waste and minimize any negative impacts to the public, the environment and the local economy.
2. We acknowledge that a substantial economic burden might be imposed upon the local industry, landowners, and municipalities during the removal of this contamination. Any costs to relocate businesses, utilities, and reroute transportation should be part of the remedial action costs and not the responsibility of the municipalities, landowners, renters, or utility companies. These potential costs should be evaluated at this time.
3. Consideration of any alternative that leaves contamination behind must also provide a plan for long-term care with necessary funding secured. A trust or foundation dedicated to long-term monitoring and maintenance for this project is but one option that should be considered. Please describe how sufficient funds will be available to address the remaining cleanup efforts necessary, in addition to the monitoring and maintenance required. At this point, we can not concur with an option that does not provide a secure funding source for long-term care.
4. Radon must be considered; and monitoring, which includes action levels and corrective measures identified, must be provided when leaving contamination underneath buildings for any length of time. Due to the known health effects of Radon, efforts to mitigate the impacts resulting from waste or residual contamination must be incorporated in this decision and consider input from the public and regulatory agencies.

Stewardship Plan

5. The Department of Energy (DOE) is visibly absent from development of this plan. As recipient of the sites management upon completion of the cleanup. Please clarify if DOE has the responsibility for the residual contamination, inaccessible areas and the resulting responsibilities under the Stewardship role? DOE's input and concurrence to assure long

term stewardship must be provided. What steps will the U.S. Army Corps of Engineers (USACE) take to secure DOE participation and what are the results to date?

6. Institutional Controls have not been sufficiently evaluated in accordance with the recent EPA guidance in the feasibility study. Please clarify how the evaluation and use of these controls were conducted in accordance with the guidance and provide the necessary assessment. IC's should undergo the same rigorous development in comparison to the 9 criteria (Protective of Human health and the environment, meet ARARs, Long term effectiveness, permanence or reliability, etc) as any other component of the remedial alternatives. Use of guidance issued by the U.S. Environmental Protection Agency (EPA) is required to adequately develop ICs and long-term operation and maintenance (Stewardship) in the feasibility study.
7. An acceptable Long Term Stewardship Plan must be developed prior to issuance of a ROD, that demonstrates stewardship is feasible for the alternative selected. We believe the plan must provide enough of the working details to demonstrate that long-term care and controls will not hinder economic development and become a burden of the local governments and landowners. In addition to record keeping and institutional controls, necessary services must be accounted for such as: technical support, contamination removal, storage, transportation, community updates, plus utility and construction worker education.

Post Remediation Risk Assessment

8. The soil removal criteria is not an unrestricted use goal, despite that being stated in the Proposed Plan. The criteria does not meet CERCLA risk requirements. Some minimal land controls and care will be required unless post cleanup assessments show concentrations of COC's are low enough to meet CERCLA risk requirements for unrestricted future use, i.e. a suburban farmer/rcsidnt with a garden).
9. The NC ROD should use verbiage similar to the SLDS ROD that describes the use of post-remedial risk assessments to determine the needs for long-term care. Page 69 and 70 of the SLDS ROD states:
 - *"A post-remedial action assessment will be performed to describe the level of risk remaining from MED/AEC contaminants following completion of remedial activities."*
 - *"Final determinations as to whether institutional controls and use restrictions are necessary will be based on calculations of post remedial action **risk derived** from actual residual conditions. Five year reviews will be conducted per the NCP for residual conditions that are unsuitable for unrestricted use."*
 - *"Institutional controls may include land use restrictions for those areas having residual concentrations on contaminants unsuitable for unrestricted use. This determination will be made based on **risk analysis** of the actual post-remedial action conditions."*
 - *"For residual conditions requiring use restrictions after the period of active remediation, coordination with property owners and local land use planning authorities will be necessary to implement deed restrictions or other mechanisms to maintain industrial/commercial land use."*
 - *"**Protactinium-231 (Pa-213) and actinium-227 (Ac-227)** will be included in the analyses for the post-remedial action residual site risk; . . ."*

Contaminated Buildings

10. Buildings near the Hazelwood Interim Storage Site (HISS), and identified on the various maps, have not been sufficiently characterized for radiological or hazardous waste. Please prepare a proposal to characterize these facilities and the associated means, including specific criteria, to decontaminate or remove these buildings. This information should be provided to the public and regulators for review with subsequent comments or approval incorporated into the NC ROD.
11. Information regarding both radiological and chemical contamination of buildings surrounding HISS should also be made available to the workers in these facilities. The department provided a report in September 2001, which presented concerns regarding these buildings surrounding HISS. These concluding statements were made during the time residues were being processed and stored there. Although no responses have been provided to date, they should be and the associated costs included.
 - *The interior of the FUTURA buildings, including any floor drains and impacted sewers, should be characterized due to their affiliation with operations conducted by the Commercial Discount Corp.*
 - *The interior of the buildings located on VP-02(L) should be characterized because contamination has already been found on top of the building and the ventilation was very susceptible to pulling in dust from the HISS site.*
 - *The presence of FUSRAP contamination on or in buildings located at VP-02(L), VP-03(L), VP-01(L), VP-09(C), VP-04(L), VP-05(L), and VP-39 should be defined. An extensive survey and sampling event for each property may not be required. Instead, the extent of investigation on each property should be dependent on the potential for impact as determined by preliminary findings from key locations or property immediately upwind from each other (with the wind originating from a direction corresponding to HISS).*

Coldwater Creek

13. Coldwater Creek, whether above or below the mean water level, needs to achieve the same protective standards as the other impacted sites. If it is determined that this cannot be economically achieved, then rigorous monitoring and procedural safeguards are needed in the long-term stewardship plan. Coldwater Creek has not been adequately characterized to identify and monitor both the radiological and or hazardous materials throughout its length that are attributable to USACE as well as Manhattan Engineering District/Atomic Energy Commission (MED/AEC) or DOE. As a dynamic system, these materials continue to migrate and pose threats to unknowing landowners or individuals downstream.

Groundwater Contamination

14. Since the plan proposes to leave contamination in the (upper) groundwater units, monitoring for as long as a threat exists (perpetuity) is required to ensure no adverse impacts occur to Coldwater Creek or the drinking water (lower) units. Action levels, contingency plans, and a

monitoring network are required as a component of Long-Term Stewardship in order to assure current and future generations that the remediation is protective. Please identify the details of how and where these components will be noted in the ROD.

15. Hydrologic Zone (HZ)-A groundwater, although not currently used as a water supply, has been impacted by site contaminants. Though no contaminants of potential concern (COPC) have been found in the lower HZs, shallow groundwater is considered "waters of the state" and groundwater must be considered a media of concern with appropriate monitoring to assure the remediation remains protective.
16. The current PP addresses the issue of groundwater in areas where contaminated soils are inaccessible and will remain in place after site closure under institutional controls. It is suggested in the PP that groundwater monitoring *could* (emphasis added) be performed. The state must insist that groundwater monitoring be performed in those areas where inaccessible contaminated soil will be left in place for an indefinite period of time.

Applicable or Relevant and Appropriate Requirements (ARARs)

17. All ARARs must be recognized and included in the final ROD. Currently the plan only states that these items will be met but not necessarily be included in the ROD. Some of the needed ARARs include the Safe Drinking Water Act, Missouri's monitoring well construction Code, Missouri's Solid Waste Management Laws and Regulations, Missouri General Protection of Groundwater Quality and Resources, Missouri Radiation Regulations-Protection Against Ionizing Radiation, Disposal of Radioactive Wastes, Hazardous Material Transportation Regulations (49 CFR Part 171 & 172, Clean Air Act (40 CFR Part 61 Subpart I dealing with limits on radionuclide emissions to the air), and RCRA Generator and characterization requirements. The state's letter of September 17, 1998, contains a complete list of ARARs and reasons for their use.

Thorium Cleanup

18. The cleanup criteria proposed for thorium is not consistent with the EPA standards and directives (ref. 9200.4-25) in the Uranium Mill Tailings Radiation Control Act (i.e. 5/15 for radium and thorium), nor does it meet the St. Louis Site Remediation Task Force recommendation. The stated goal for the NC sites is unrestricted future use so the reasoning for leaving residual thorium contamination at a higher level is unclear. The more waste removed leaves fewer sites where use restrictions or controls must remain.

Ecological Impacts

19. The preliminary screening for ecological risk is not adequate to evaluate impacts to Coldwater Creek, nor is it sufficient to assess natural resource injury. A thorough ecological risk assessment is required. In addition, an evaluation of the means the USACE proposes to minimize ecological impacts resulting from cleanup efforts in the drainage channel have not been identified.

Federal Facility Agreement

20. The department requests that the federal agencies amend the Federal Facility Agreement to include the state as an equal party. Although the EPA and the USACE have acknowledged the department's involvement and participation, CERCLA (§ 120) clearly supports having the states provide a formal role in these cleanup agreements, and the department desires to exercise that option.

Public Input

21. The formal public meeting held May 29, 2003, did not provide an opportunity for discussion. Citizens were only able to voice their concerns. The USACE should provide an additional forum prior to finalizing the ROD to let them know if their concerns were addressed or have an opportunity to discuss agreed to resolutions. While the requirement for a public meeting was met, the public's best interests may not have been served without an opportunity to exchange in constructive dialog to discuss their concerns, questions and reasoning. A request is made for a similar opportunity to occur prior to transition of any portion of the site to the DOE for long term stewardship.

West Lake Landfill

22. At the recent public meeting, the public again reminded us that legacy waste from the NC site is improperly stored at the West Lake Landfill. The federal government has administratively separated remediation of West Lake Landfill and the NC sites. Actions proposed for the NC sites should also consider addressing cleanup of the federal waste at the West Lake Landfill site.

Specific Comments on the Proposed Plan

1. Page 4:
In the site history portion of this document, there is no mention of the extensive effort and contribution made by the St. Louis Task Force. It would be appropriate to make note of this and include the recommendations of that group for the NC sites.
2. Page 9, last paragraph discusses the general contamination characteristics as being radiological. The department also concludes that there may be Resource Conservation and Recovery Act (RCRA) materials present, which originated from the chemical processing of the radioactive ores as well as from the vehicle maintenance activities that occurred during the time the site was used as an active storage facility for the downtown site cleanup activity. There is in fact volatile organic compounds (VOC) found in the monitoring wells. While the USACE assertion that the VOCs are more attributable to other industry in the vicinity, there is no convincing data confirming that there is no RCRA material remaining. Therefore, add RCRA regulations to the Applicable or Relevant and Appropriate Requirement section of the proposed plan and ROD.
3. Page 10, last sentence of the paragraph bolded heading of **Ground Water**:

Since there was no ecological assessment performed on Coldwater Creek, there is insufficient evidence that discharge of (contaminated) groundwater to the creek is not causing an impact. Please revise or remove this statement.

4. Page 11, last paragraph on the left side which discusses ecological risk:
The ecological screening is not sufficient to aid in the determination of Natural Resource Injury Assessments as required of Federal Agencies and for the state of Missouri as the trustee. While the brief presentation here in the proposed plan may be adequate to proceed with the development of the ROD, a more complete characterization of the areas impacted and a more thorough risk assessment are necessary.
5. Page 13, paragraph entitled **Sediments**, the logic for discounting metals and organics from the Contaminants of Concern (COC) has no scientific basis. The speculation that elevated concentrations are the likely result of area industry does not rule out St. Louis Airport Site (SLAPS) and HISS/Futura as contributors. Please retain arsenic and the five organics as COC for sediments.
6. Page 13, top right-hand side, paragraph entitled **Ecological Risk**, referencing comment #5 above:
Because there has not been a thorough characterization of Coldwater Creek, especially north of I-270, the use of the screening process is not appropriate or sufficient to conclude there is not or has not been an ecological impact. Please revise or clarify that additional assessments may be required to evaluate Natural Resource Injury Assessment.
7. Page 14, Applicable or Relevant and Appropriate Requirements and page 15 Derivation of Remediation Goals and Cleanup Levels:
The development of the Thorium criteria using 10 CFR 40, Appendix A, Criterion 6(6) should use 5 pCi/g for radium for surface and subsurface as the baseline. Is this how the Thorium criteria was developed?
8. Page 14, Applicable or Relevant and Appropriate Requirements (ARARs):
This office identified several ARARs that have been used at other sites having similar or identical COCs and site conditions. The department requests that the USACE reconsider evaluation of these identified ARARs (submitted Fall 1998) and include them in the ROD. How can ARARs noted in Table 10-1 and 10-2 of the SLDS not be used at this site? Additionally, many of the NC sites are within the 100-year floodplain; regulations for these areas are ARARs, clearly USACE/Civil Works is familiar with all regulations dealing with areas within a floodplain. Additionally, having encountered asbestos materials at SLAPS and potentially at other vicinity properties (VC), regulations regarding asbestos handling and disposal are ARARs.
9. Page 17, right hand side, second paragraph:
The soil removal criteria are described as "consistent with the remediation standards used in Engineering Evaluation/Cost Analysis (EE/CA) by DOE prior to transfer." This is incorrect since the surface criteria for Thorium-230 in soils was modified as was the means of

computing the sum-of-the-ratios. In addition, the criteria proposed for contamination of the creek sediments, below the mean water line, is completely different for all the radionuclides.

10. Page 17, right hand side, second paragraph:

The soil cleanup criteria is called a "remediation goal" and is said to "meet the threshold criteria" for human health and the environment and compliance with ARARs and will achieve a final status that requires no restrictions on land use. This is incorrect. Please refer to comments under the section titled "Comments on Radiological Soil Removal Criteria" and modify these or avoid making similar statements in the upcoming Record of Decision.

11. Page 21, Transportation and Waste Management:

The 4th sentence states "trucking may also be used for long distance shipping." The department has concerns with shipping large quantities of these contaminated materials via our highways due to increased potential for accidents and the spread of contamination. Please clarify when and why this option would be used and provide a cost analysis if this option were taken.

12. Page 21, Transportation and Waste Management:

Crushing rubble and similar material for disposal is described, and then mention is made that "site soils could be used as backfill if they are not impacted, or if they meet the cleanup criteria for surface soils." Due to mismanagement of rubbleized material which has already occurred at the SLDS site regarding the interpretation of material suitable for fill, please confirm that the term rubble and soil is used as intended here and that crushed concrete and building debris will not be used as backfill. We request the USACE provide us with prior notice of the destination of all materials shipped off-site for disposal (please remember Missouri Solid Waste Regulations prohibit placing MED/AEC impacted materials into any Missouri landfills). We also do not concur with reusing excavated soils as fill unless they are determined, with sufficient opportunity for regulator review of the sampling plan and resultant data, not to be impacted.

13. Page 21, Transportation and Waste Management:

The statement is made that "uranium would be recycled if the costs are similar to the cost of disposal." Please acknowledge that no on-site recycling processes are permitted without prior approval. In addition, please provide prior notification to the department and the EPA regarding the destination of materials shipped, including to recycling facilities.

14. Page 22-25, Alternatives:

The sections titled Excavation and Dredging all describe soils and sediment removal criteria as being remediation goals or criteria for unrestricted release. This is incorrect. Please refer to comments under the section titled "Comments on Radiological Soil Removal Criteria" and modify these statements accordingly. Please note that clarification is needed to ensure the reader is aware that post-remedial action risk assessments will decide long-term care and institutional controls.

15. Page 25, last paragraph:

Please revise the paragraph to note the need for post-remedial action risk assessments to

decide long term care and institutional controls. The statement "No institutional controls would be required for accessible soils" is the goal. However, without post-remedial action risk assessments that demonstrate the goal was met, the statement is misleading.

16. Page 26, second column, 3rd paragraph:

This paragraph should read: "Five-year reviews should be conducted of the remedy protectiveness to the groundwater, contamination left in place due to accessibility problems, changes to properties with residual concentrations not meeting the CERCLA risk range, the responsiveness to requests for assistance, and data results with responses to action level triggers for buildings being monitored for radon."

17. Page 29, second column, first paragraph under *Alternative 5, etc.*:

Discussions on unrestricted use designations need modification in accordance with comments already made on the use of a post-remedial action risk assessment.

18. Page 30, continuation of Alternative 5:

A claim is made that Alternative 5 does not conflict with state policies regarding radioactive contaminated material in Missouri. Please revise this comment or acknowledge it does not comply with Missouri Solid Waste Regulations.

19. Page 32, 3rd paragraph under title "St. Louis North County Site Preferred Alternative":

When stating remediation goals, the word "or" is used instead of the word "and." Please revise this statement or provide clarification, as it sounds to the reader that the radiological COC and corresponding criteria can be chosen rather than using a sum of all three.

20. Page 32, paragraph 1 under "St. Louis North County Preferred Alternative":

The statement is made that "Institutional controls are used to ensure protectiveness for alternatives at areas in which the residual concentrations exceed the concentrations in ARARs for residential use" The soil removal criteria was not risk based and cannot be associated with an end-use scenario. Please revise the paragraph to note the need for post-remedial action risk assessments to decide long term care and institutional controls.

21. Page 32, second column, paragraph 3:

The paragraph states that "Inaccessible soils . . . are not addressed by this remedial action. The paragraph also states that "New decision documents will identify the response actions to address the inaccessible soils as appropriate." We cannot concur with this proposal unless response actions are pre-defined. Please revise the proposal to remove all contamination or provide a separate stewardship plan that ensures long term care and controls will be available. Comments under the section heading "Long Term Stewardship."

22. Page 32, 7th paragraph under title "St. Louis North County Site Preferred Alternative":

It is stated "This alternative requires institutional controls to ensure that roads are not excavated without appropriate oversight and safety procedures and constraints." Who will oversee and execute these safety procedures after the project has been completed and the USACE no longer has an on-site presence?

23. Page 32, St. Louis North County Site Preferred Alternative:

This section does not give any reference to which excavated soils or other material can be placed back onto the property of origin. Please clarify this. As pointed out earlier, the department does not concur with re-using excavated soils as fill unless they are determined, with opportunity for review of the data prior to use, to be non-impacted.

24. Page 32, last paragraph:

It is stated, "Size reduction would be used for materials such as concrete debris." Will this material be used as backfill material using criteria in the Consolidated Materials Report?

25. Page 33, first column, paragraph 1:

The statement is made, "excavated material would be shipped primarily from the rail spurs . . ." Is the USACE considering using other shipping methods? If, so what are they?

26. Page 33, first column, paragraph 2:

The statement is made "soils may be shipped off-site to a properly permitted disposal site, including sites where uranium is recovered." None of the current disposal facilities have uranium recovery capabilities. Please remember that both the department and the oversight committee requested notification of disposal facilities being considered for use. Are disposal contracts existing for other places than Envirocare in Utah or EnviroSafe in Idaho? Please acknowledge that both the oversight committee and the department will be given notice prior to the USACE's signing of new disposal contracts.

27. Page 33, first column, second to last paragraph:

The plan states, "no remediation of surface waters or ground water is required or included." and "The source removals will improve water quality." The source (soil) removals should prevent further degradation of the water quality; however, improvement of water quality is questionable. Please acknowledge that groundwater data assessment is ongoing and that conclusions regarding the impact of source removal have yet to be made.

28. Page 34, second column, first paragraph:

The statement is made that the five-year review is "conducted for only those areas where COCs remain above unrestricted use criteria." Please note that the following statement is more comprehensive: "Five-year reviews should be conducted of the remedy protectiveness to the groundwater, contamination left in place due to accessibility problems, changes to properties with residual concentrations not meeting the CERCLA risk range, the responsiveness to requests for assistance, and data results with responses to action level triggers for buildings being monitored for radon." Please acknowledge the need for revising the statement, and that you would consider including similar verbiage within the ROD.

29. Page 34, second column:

Groundwater monitoring is described. Please see comments under the section titled "Groundwater Contamination" and consider having a discussion on the USACE expectations for short-term monitoring within an upcoming groundwater technical working group meeting.

30. Page 35, first column, continued paragraph from page 34:

The USACE lists the benefits of Alternative 5. The disadvantages of Alternative 5 are:

- a) Properties with contamination concentrations above soil guideline criteria will require long term care and controls which could include the monitoring of buildings for radon.-
- b) Long-term care and controls on all properties could be required, depending on the results from post remedial risk assessments.
- c) A plan for long-term care and controls is required, and funding for this must be secured.
- d) Technical support, material storage, plus contamination removal and waste transportation services will have to be located nearby and able to offer a timely enough response to not inhibit local development.

31. Page 36, first paragraph on the left, see comment 9:

Many of the USACE's responses to the state ARAR list had no basis. Additionally, the ARARs identified by the state are consistent with and used at other sites with the same contaminants and setting. Please include the ARAR's list.

32. Figure 6:

With the exception of the Futura buildings, the remainder of inaccessible areas involve roads or railroads. Some of the railroad spur tracks depicted on the map are presently not used or have been rendered unusable. Why would spur tracks that are not being used or abandoned be considered inaccessible? If the spur tracks are not being used or have been abandoned, the time to remove the contamination is now, rather than place institutional controls that may or may not be effective and cause unnecessary development restrictions to the property owner.

33. Figure 6:

In addition, has there been a characterization of these roads and railroads to identify whether or not contamination is present? Figure 6 currently depicts all of the inaccessible areas identified are contaminated and will require an enforceable and strict land use control. Why designate all of the areas if in fact there may not be a need? This causes potential development problems to the property owner and it creates an undue cost for local, state, and federal governments to monitor and maintain vigilance of the areas.

Specific Comments on the FS

- 1. Much of the verbiage in the PP and FS are similar. Therefore, comments made regarding the PP apply to those applicable sections in the FS. However, we reiterate that the document should:
 - a) clearly show that post-remedial action risk assessments will be conducted and suitable to define land use restrictions if removal criteria is not an unrestricted use guideline,
 - b) propose criteria for the decontamination of structures,
 - c) include a long-term-stewardship plan and the necessary funding.

2. Page ES-22, 3rd paragraph:

This paragraph discusses non-radiological contaminants of concern (COC) and states that only certain chemicals are defined as non-radiological COCs for surface and only a few of these are defined as COCs for subsurface. Please explain the rationale behind this decision. It is also stated that there are different non-rad COCs for SLAPS and contiguous areas and HISS/Latty. Again, please explain the rationale behind this decision. Additionally, is Coldwater Creek included in contiguous areas of the SLAPS? If not, what are the non-radiological COCs for Coldwater Creek?

3. Page ES-31, Under the title "Institutional Controls:"

It is stated, "For alternatives that use institutional controls, a long-term stewardship plan would be developed . . ." Please recognize that a long-term stewardship plan should be developed regardless of the use of institutional controls.

4. Page ES-31, under the section titled "Transportation and Waste Management:"

It is stated, "Site soils could be used as backfill if they are unimpacted, or if they meet the cleanup criteria for surface soils." The state would like a definition of the term "soils." Would this extend to any concrete debris, rock, or other material? In addition, how would sampling be performed on soils to determine if it meets the criteria? Would soil be separated out in different piles according to radiological activity and then how would sampling be performed on these piles? Further concerns regard the approach of mixing soils to reduce the activity so the soil could be used as backfill. This approach is not acceptable. Finally, consent must be obtained from the owner before using "recycled" soil on the vicinity properties.

5. Page ES-36, 1st bullet:

It is stated that new decision documents will identify response actions to be used when an inaccessible area becomes accessible. When will this new decision document be developed? It is hoped that this decision document will be developed before the project ends so that there will be a plan in place in the case where inaccessible areas become accessible in the future. If a new "decision document" is developed, that process must be addressed within the Federal Facility Agreement framework.

6. Page ES-36, 3rd bullet:

It is stated, "Controls could also include zoning restrictions at Futura." Why just Futura? What about other vicinity properties where contamination may exist underneath the buildings?

7. Page ES-37, 1st paragraph:

What long-term monitoring be performed at Coldwater Creek where sediment is left above unrestricted use criteria (below the mean water line), and what kind of institutional controls will be in place?

8. Figure ES-3:

This map does not depict any contamination under buildings other than at Futura. Were all

the buildings in that area constructed before the area was contaminated? If not, then investigations should include those buildings to determine if additional areas are impacted.

9. Page 2-65, 4th paragraph:

This paragraph discusses a process to determine whether or not non-radiological COCs were co-mingled with radiological COCs and subsequently removed when radiological contamination was removed. A similar process must be performed with all of the vicinity properties and documented in a Post-Remedial Action Report (PRAR). Please acknowledge how this will be included in the ROD.

10. Page 2-68, Table 2-12:

Why is uranium not listed as a COC for HISS/Futura and Latty Avenue VPs 2L and 10k530087?

11. Page 3-5, 5th paragraph:

The department disagrees with the statement made that there are no location or action specific ARARs identified for the NC sites. During removal actions, action specific ARARs included air emission regulations, stormwater discharge regulations, historical preservation regulations, etc. In addition, location-specific ARARs included the height restriction for the SLAPS as well as any flood-plain regulations that exist. Please revise the list of ARARs to include such regulations, many of which we've previously identified on the state ARAR list.

12. Table C-1:

HISS/Futura, Alternative 5 states, "Excavate for release without restrictions." This is not a completely accurate statement. The soils under the buildings and the driveway next to the building would still contain residual contamination. Please revise this statement to indicate placement of necessary institutional controls in such areas of the property.

13. Table C-1:

Coldwater Creek, Alternative 5 states, "Excavate to Coldwater Creek criteria below the mean water level for release without restriction." Again, this is not an accurate statement. The criteria for below the mean water line were modeled using a recreational scenario. Using a recreational scenario, the criteria meets an acceptable risk, but this does not mean it meets unrestricted use (suburban farmer). Please revise the statement to clarify under what scenario the criteria meets an acceptable risk. Additionally, the public and the department has asked that the cleanup of this area meet the same protective limits as other areas. If this can not be achieved then appropriate IC's and stewardship management plans must be applied.

14. Page D-14, 4th paragraph:

The background values are slightly different than those used in previous documents. Please explain the changes.

15. Page D-27:

What does eliminated manganese, as a COC have to do with eliminating arsenic as a COC? How are these two chemicals related?

16. Page D-37:

EPA guidance (Directive 9200.4-35P) states that dose limits based in NRC Criteria 6(6) (25 mrem/yr.) should not be used for establishing remediation goals under CERCLA. The EPA also determined that dose limits above 15 mrem/yr. are not protective under CERCLA. Please acknowledge that the proposal does NOT meet dose requirements under CERCLA and that USACE intends to use a post-remedial assessment to determine the need for land use restrictions or controls.

17. Page D-49, Table D-15:

When stating remediation goals, the word "or" is used instead of the word "and." Please revise this statement, because it implies the radiological COC and corresponding criteria can be chosen rather than using a sum of all three.



MISSOURI DEPARTMENT OF NATURAL
RESOURCES
FAX Transmittal Cover Sheet

Date of FAX: 7/14/03

☐ URGENT

X Priority
Routine

☐ As Requested

☐ FYI

To: Sharon Cotner

From: Larry Erickson

FAX # 314/260-3941

FAX # 2-5268

Phone # 260-3915

Phone # 1-6838

SUBJECT: FUSRAP North County PS/PP comments

COMMENTS: The original copy has been placed in the mail. We assume USACE will want to discuss fairly soon. Also, with the close of the comment period, we request copies of the comments received as soon as possible.

RESPONSE EXPECTED:



Total # of pages sent (including transmittal sheet 18)

If problems with FAX call: (573)751-3907

MO 760-1430 (10-94)

RECYCLED PAPER



Bob Holden, Governor • Stephen M. Mahfood, Director

DEPARTMENT OF NATURAL RESOURCES

www.dnr.state.mo.us

JUL 14 2003

Ms. Sharon Cotner, Project Manager
U. S. Army Corps of Engineers
8945 Latty Avenue
Berkeley, MO 63134

RE: Feasibility Study/Proposed Plan (FS/PP) for the St. Louis North County Site, May 1, 2003
Formerly Utilized Sites Remedial Action Program (FUSRAP)

Dear Ms. Cotner:

The Record of Decision (ROD) for the FUSRAP North County site is possibly the single most important document regarding cleanup of radioactive contamination by the U.S. Army Corps of Engineers (USACE) in the St. Louis area. I hope it will not be the last opportunity for citizens of the state of Missouri to comment on the effectiveness of the cleanup and the transition to long-term stewardship. I am pleased with the opportunity to provide our perspective and comments on the key documents that form the basis of this decision. St. Louis citizens deserve a cleanup protective of human health and the environment after being burdened for over fifty years with the stigma of federal waste on private property from our nation's nuclear weapons program. Although private individuals and local governments own the properties to be remediated, the waste is federal responsibility. We must provide for a cleanup now and stewardship of the site into the future.

I appreciate the work the USACE has completed thus far and look forward to working together to develop and implement an acceptable ROD. However, the preferred alternative identified by the USACE (Alternative 5), does not meet my expectations. Ideally FUSRAP contamination would be cleaned up immediately to unrestricted levels and properly disposed of, but this is not a practical cost-effective expectation as some of the contamination is inaccessible. In the meantime, contamination that is currently inaccessible must be managed to minimize any negative impacts to the public or the environment until it can be safely removed and disposed of at an appropriate site. Alternative six (6) seems to provide that protection and may be acceptable with revisions that address the following key concerns:

Long-Term Stewardship Plan. A comprehensive long-term stewardship plan is a missing part that is essential as it defines proper management of waste materials until they are removed or of residual contaminants as long as they pose a threat. Effective stewardship planning requires, the

*Integrity and excellence in everything we do*

Ms. Sharon Cotner
Page 2

Department of Energy (DOE) to be included if they are to be reliable site managers following cleanup. The final stewardship plan must clearly identify not only a detailed technical plan for monitoring, surveillance and maintenance responsibilities, but also must include funding sources and an independent enforcement authority.

- ❖ **Post-remediation Risk Assessment.** Comprehensive post-remedial risk assessment reports must be included to account for the level of radionuclide and chemical contaminants remaining. This approach should help answer future questions regarding the effectiveness of the actual cleanup as well as providing a decision matrix to identify what, if any, use limitation or controls must remain.
- ❖ **Other Contaminated Buildings.** In the vicinity of the Hazelwood Interim Storage Site, - buildings remain on private property, which have radioactive and possibly chemical contamination from the government's waste products. Characterization of this contamination, criteria for remediation and a cost estimate of the work are needed.
- ❖ **Institutional Controls.** Institutional controls must be well defined and undergo the same evaluation as any other component of the remedy, including costs. To achieve the necessary protectiveness, they must be durable, reliable, enforceable and consistent with the risk posed by the contaminants. Without compromising their protective function, they must also not prohibit appropriate development or reuse of the property.
- ❖ **Coldwater Creek.** Remediation of Coldwater Creek, whether above or below the mean water level, needs to achieve the same protective standards as the other impacted sites. If this cannot be achieved economically, then rigorous monitoring and procedural safeguards are needed in the stewardship plan.
- ❖ **Groundwater.** Groundwater must be monitored to ensure that no additional adverse impacts occur to Coldwater Creek, or the drinking water (lower) units, from contamination at these sites for as long as threats exist. A monitoring network that includes action levels and contingency plans are required to assure current and future generations that the remediation is protective.
- ❖ **Applicable or Relevant and Appropriate Requirements (ARARs).** All ARARs must be recognized and included in the final ROD. Currently the plan only states that these items will be met but not necessarily be included in the ROD. Some of the needed ARARs include the Safe Drinking Water Act, Missouri's monitoring well construction Code, Missouri's Solid Waste Management Laws and Regulations, Missouri General Protection of Groundwater Quality and Resources; Missouri Radiation Regulations-Protection Against Ionizing Radiation, Disposal of Radioactive Wastes, Hazardous Material Transportation Regulations (49 CFR Part 171 & 172, Clean Air Act (40 CFR Part 61 Subpart I dealing with limits on radionuclide emissions to the air), and RCRA Generator and characterization

Ms. Sharon Cotner
Page 3

requirements. The state's letter of September 17, 1998, contains a complete list of ARARs and reasons for their use.

- ❖ **Thorium Cleanup.** The cleanup criteria proposed for thorium is not consistent with the EPA standards in the Uranium Mill Tailings Radiation Control Act (i.e. 5/15 for radium and thorium), nor does it meet the St. Louis Site Remediation Task Force recommendation. The stated goal for the North County sites is unrestricted future use. Due to this, the reasoning for leaving residual thorium contamination at a higher level is unclear. The more waste removed leaves fewer sites where use restrictions or controls must remain.
- ❖ **Ecological Impacts.** The preliminary screening for ecological risk is not adequate to evaluate impacts to Coldwater Creek, nor is it sufficient to assess natural resource injury. A thorough ecological risk assessment is required.
- ❖ **Federal Facility Agreement.** I ask that the federal agencies amend the Federal Facility Agreement to include the state as an equal party. Although the U.S. Environmental Protection Agency and the USACE have acknowledged our involvement and participation, the Comprehensive Environmental Response, Compensation, and Liability Act legislation (§120) clearly supports the states with a formal role in these cleanup agreements, and we desire to exercise that option.
- ❖ **Public Input.** The formal public meeting held May 29, 2003, did not provide an opportunity for discussion. Citizens were only able to voice their concerns. You should provide an additional forum prior to finalizing the ROD to inform them if their concerns were addressed or have an opportunity to discuss agreed to resolutions. While the criteria for a public meeting was met, I do not believe the public's best interests were served without an opportunity to exchange in constructive dialog to discuss their concerns, questions and reasoning. Before any portion of the site transitions to the DOE for stewardship, I request a similar opportunity occur.
- ❖ **West Lake Landfill.** At the public meeting, the public reminded us that legacy waste from the North County site is improperly stored at the West Lake Landfill. The federal government has administratively separated remediation of West Lake Landfill and the North County sites. I ask that actions proposed for the North County sites also consider cleanup of the federal waste at the West Lake Landfill site.

Further documentation of these concerns is included in the enclosure. Clearly, everyone wants all accessible sites, including Coldwater Creek, cleaned up to levels that provide for an unencumbered use. Further, a clear plan is needed for those inaccessible areas that provides for monitoring of the area, assuring no further spread of contamination and direction of action when the areas become accessible for cleanup.

Ms. Sharon Cotner

Page 4

My staff and I look forward to maintaining this cooperative effort, including preparation of the responsive summary and on the development of the ROD. We fully support a continued partnership with you, the EPA, as well as DOE and the affected community in this vitally important task at hand.

I thank you for the opportunity given to review and comment on the FS/PP for the St. Louis North County Site. If you have questions or require any further clarification of the comments made please call me at (573) 751-4732, or you may contact Mr. Robert Geller of my staff at (573) 751-3907. Direct written responses or concerns to my attention or to Mr. Geller at P.O. Box 176, Jefferson City, Missouri 65102-0176.

Sincerely,

DEPARTMENT OF NATURAL RESOURCES


Stephen Manfred
Director

SM:rgd

Enclosure

c: Mr. Ric Cavanaugh, Co-Chair, St. Louis Oversight Committee
Ms. Anna Ginsberg, Co-Chair, St. Louis Oversight Committee
Mr. James Gulliford, Director, U.S. Environmental Protection Agency -Region VII
Ms. Jessie Roberson, Assistant Secretary-Environmental Management, DOE
Honorable Francis Slay, Mayor, City of St. Louis
Mr. Buzz Westfall, St. Louis County Executive

Enclosure
MISSOURI DEPARTMENT OF NATURAL RESOURCES
Detailed Comments on the Feasibility Study/Proposed Plan (FS/PP)
for the
St. Louis-North County (NC)
Formerly Used Sites Remedial Action Project (FUSRAP) sites

GENERAL

Alternative Selection

1. We desire a remedy that removes ALL contamination and eliminates the need for long-term care and institutional controls. However, we recognize it is not practical or cost effective to immediately remove contamination at inaccessible areas at this time. Alternative 6 with proper revisions comes closest to the desired goal. When the contamination under the roads, buildings and rail lines is accessible, we expect the federal government to remove the waste and adequately dispose of it. In the interim, those areas must be adequately managed to keep track of the waste and minimize any negative impacts to the public, the environment and the local economy.
2. We acknowledge that a substantial economic burden might be imposed upon the local industry, landowners, and municipalities during the removal of this contamination. Any costs to relocate businesses, utilities, and reroute transportation should be part of the remedial action costs and not the responsibility of the municipalities, landowners, renters, or utility companies. These potential costs should be evaluated at this time.
3. Consideration of any alternative that leaves contamination behind must also provide a plan for long-term care with necessary funding secured. A trust or foundation dedicated to long-term monitoring and maintenance for this project is but one option that should be considered. Please describe how sufficient funds will be available to address the remaining cleanup efforts necessary, in addition to the monitoring and maintenance required. At this point, we can not concur with an option that does not provide a secure funding source for long-term care.
4. Radon must be considered; and monitoring, which includes action levels and corrective measures identified, must be provided when leaving contamination underneath buildings for any length of time. Due to the known health effects of Radon, efforts to mitigate the impacts resulting from waste or residual contamination must be incorporated in this decision and consider input from the public and regulatory agencies.

Stewardship Plan

5. The Department of Energy (DOE) is visibly absent from development of this plan. As recipient of the sites management upon completion of the cleanup. Please clarify if DOE has the responsibility for the residual contamination, inaccessible areas and the resulting responsibilities under the Stewardship role? DOE's input and concurrence to assure long

term stewardship must be provided. What steps will the U.S. Army Corps of Engineers (USACE) take to secure DOE participation and what are the results to date?

6. Institutional Controls have not been sufficiently evaluated in accordance with the recent EPA guidance in the feasibility study. Please clarify how the evaluation and use of these controls were conducted in accordance with the guidance and provide the necessary assessment. IC's should undergo the same rigorous development in comparison to the 9 criteria (Protective of Human health and the environment, meet ARARs, Long term effectiveness, permanence or reliability, etc) as any other component of the remedial alternatives. Use of guidance issued by the U.S. Environmental Protection Agency (EPA) is required to adequately develop ICs and long-term operation and maintenance (Stewardship) in the feasibility study.
7. An acceptable Long Term Stewardship Plan must be developed prior to issuance of a ROD, that demonstrates stewardship is feasible for the alternative selected. We believe the plan must provide enough of the working details to demonstrate that long-term care and controls will not hinder economic development and become a burden of the local governments and landowners. In addition to record keeping and institutional controls, necessary services must be accounted for such as: technical support, contamination removal, storage, transportation, community updates, plus utility and construction worker education.

Post Remediation Risk Assessment

8. The soil removal criteria is not an unrestricted use goal, despite that being stated in the Proposed Plan. The criteria does not meet CERCLA risk requirements. Some minimal land controls and care will be required unless post cleanup assessments show concentrations of COC's are low enough to meet CERCLA risk requirements for unrestricted future use, i.e. a suburban farmer/resident with a garden).
9. The NC ROD should use verbiage similar to the SLDS ROD that describes the use of post-remedial risk assessments to determine the needs for long-term care. Page 69 and 70 of the SLDS ROD states:
 - *"A post-remedial action assessment will be performed to describe the level of risk remaining from MED/AEC contaminants following completion of remedial activities."*
 - *"Final determinations as to whether institutional controls and use restrictions are necessary will be based on calculations of post remedial action risk derived from actual residual conditions. Five year reviews will be conducted per the NCP for residual conditions that are unsuitable for unrestricted use."*
 - *"Institutional controls may include land use restrictions for those areas having residual concentrations on contaminants unsuitable for unrestricted use. This determination will be made based on risk analysis of the actual post-remedial action conditions."*
 - *"For residual conditions requiring use restrictions after the period of active remediation, coordination with property owners and local land use planning authorities will be necessary to implement deed restrictions or other mechanisms to maintain industrial/commercial land use."*
 - *"Protactinium-231 (Pa-213) and actinium-227 (Ac-227) will be included in the analyses for the post-remedial action residual site risk; . . ."*

Contaminated Buildings

10. Buildings near the Hazelwood Interim Storage Site (HISS), and identified on the various maps, have not been sufficiently characterized for radiological or hazardous waste. Please prepare a proposal to characterize these facilities and the associated means, including specific criteria, to decontaminate or remove these buildings. This information should be provided to the public and regulators for review with subsequent comments or approval incorporated into the NC ROD.
11. Information regarding both radiological and chemical contamination of buildings surrounding HISS should also be made available to the workers in these facilities. The department provided a report in September 2001, which presented concerns regarding these buildings surrounding HISS. These concluding statements were made during the time residues were being processed and stored there. Although no responses have been provided to date, they should be and the associated costs included.
 - *The interior of the FUTURA buildings, including any floor drains and impacted sewers, should be characterized due to their affiliation with operations conducted by the Commercial Discount Corp.*
 - *The interior of the buildings located on VP-02(L) should be characterized because contamination has already been found on top of the building and the ventilation was very susceptible to pulling in dust from the HISS site.*
 - *The presence of FUSRAP contamination on or in buildings located at VP-02(L), VP-03(L), VP-01(L), VP-09(C), VP-04(L), VP-05(L), and VP-39 should be defined. An extensive survey and sampling event for each property may not be required. Instead, the extent of investigation on each property should be dependent on the potential for impact as determined by preliminary findings from key locations or property immediately upwind from each other (with the wind originating from a direction corresponding to HISS).*

Coldwater Creek

13. Coldwater Creek, whether above or below the mean water level, needs to achieve the same protective standards as the other impacted sites. If it is determined that this cannot be economically achieved, then rigorous monitoring and procedural safeguards are needed in the long-term stewardship plan. Coldwater Creek has not been adequately characterized to identify and monitor both the radiological and or hazardous materials throughout its length that are attributable to USACE as well as Manhattan Engineering District/Atomic Energy Commission (MED/AEC) or DOE. As a dynamic system, these materials continue to migrate and pose threats to unknowing landowners or individuals downstream.

Groundwater Contamination

14. Since the plan proposes to leave contamination in the (upper) groundwater units, monitoring for as long as a threat exists (perpetuity) is required to ensure no adverse impacts occur to Coldwater Creek or the drinking water (lower) units. Action levels, contingency plans, and a

monitoring network are required as a component of Long-Term Stewardship in order to assure current and future generations that the remediation is protective. Please identify the details of how and where these components will be noted in the ROD.

15. Hydrologic Zone (HZ)-A groundwater, although not currently used as a water supply, has been impacted by site contaminants. Though no contaminants of potential concern (COPC) have been found in the lower HZs, shallow groundwater is considered "waters of the state" and groundwater must be considered a media of concern with appropriate monitoring to assure the remediation remains protective.
16. The current PP addresses the issue of groundwater in areas where contaminated soils are inaccessible and will remain in place after site closure under institutional controls. It is suggested in the PP that groundwater monitoring *could* (emphasis added) be performed. The state must insist that groundwater monitoring be performed in those areas where inaccessible contaminated soil will be left in place for an indefinite period of time.

Applicable or Relevant and Appropriate Requirements (ARARs)

17. All ARARs must be recognized and included in the final ROD. Currently the plan only states that these items will be met but not necessarily be included in the ROD. Some of the needed ARARs include the Safe Drinking Water Act, Missouri's monitoring well construction Code, Missouri's Solid Waste Management Laws and Regulations, Missouri General Protection of Groundwater Quality and Resources, Missouri Radiation Regulations- Protection Against Ionizing Radiation, Disposal of Radioactive Wastes, Hazardous Material Transportation Regulations (49 CFR Part 171 & 172, Clean Air Act (40 CFR Part 61 Subpart I dealing with limits on radionuclide emissions to the air), and RCRA Generator and characterization requirements. The state's letter of September 17, 1998, contains a complete list of ARARs and reasons for their use.

Thorium Cleanup

18. The cleanup criteria proposed for thorium is not consistent with the EPA standards and directives (ref. 9200.4-25) in the Uranium Mill Tailings Radiation Control Act (i.e. 5/15 for radium and thorium), nor does it meet the St. Louis Site Remediation Task Force recommendation. The stated goal for the NC sites is unrestricted future use so the reasoning for leaving residual thorium contamination at a higher level is unclear. The more waste removed leaves fewer sites where use restrictions or controls must remain.

Ecological Impacts

19. The preliminary screening for ecological risk is not adequate to evaluate impacts to Coldwater Creek, nor is it sufficient to assess natural resource injury. A thorough ecological risk assessment is required. In addition, an evaluation of the means the USACE proposes to minimize ecological impacts resulting from cleanup efforts in the drainage channel have not been identified.

Federal Facility Agreement

20. The department requests that the federal agencies amend the Federal Facility Agreement to include the state as an equal party. Although the EPA and the USACE have acknowledged the department's involvement and participation, CERCLA (§ 120) clearly supports having the states provide a formal role in these cleanup agreements, and the department desires to exercise that option.

Public Input

21. The formal public meeting held May 29, 2003, did not provide an opportunity for discussion. Citizens were only able to voice their concerns. The USACE should provide an additional forum prior to finalizing the ROD to let them know if their concerns were addressed or have an opportunity to discuss agreed to resolutions. While the requirement for a public meeting was met, the public's best interests may not have been served without an opportunity to exchange in constructive dialog to discuss their concerns, questions and reasoning. A request is made for a similar opportunity to occur prior to transition of any portion of the site to the DOE for long term stewardship.

West Lake Landfill

22. At the recent public meeting, the public again reminded us that legacy waste from the NC site is improperly stored at the West Lake Landfill. The federal government has administratively separated remediation of West Lake Landfill and the NC sites. Actions proposed for the NC sites should also consider addressing cleanup of the federal waste at the West Lake Landfill site.

Specific Comments on the Proposed Plan

1. Page 4:
In the site history portion of this document, there is no mention of the extensive effort and contribution made by the St. Louis Task Force. It would be appropriate to make note of this and include the recommendations of that group for the NC sites.
2. Page 9, last paragraph discusses the general contamination characteristics as being radiological. The department also concludes that there may be Resource Conservation and Recovery Act (RCRA) materials present, which originated from the chemical processing of the radioactive ores as well as from the vehicle maintenance activities that occurred during the time the site was used as an active storage facility for the downtown site cleanup activity. There is in fact volatile organic compounds (VOC) found in the monitoring wells. While the USACE assertion that the VOCs are more attributable to other industry in the vicinity, there is no convincing data confirming that there is no RCRA material remaining. Therefore, add RCRA regulations to the Applicable or Relevant and Appropriate Requirement section of the proposed plan and ROD.
3. Page 10, last sentence of the paragraph bolded heading of **Ground Water**:

Since there was no ecological assessment performed on Coldwater Creek, there is insufficient evidence that discharge of (contaminated) groundwater to the creek is not causing an impact. Please revise or remove this statement.

4. Page 11, last paragraph on the left side which discusses ecological risk:
The ecological screening is not sufficient to aid in the determination of Natural Resource Injury Assessments as required of Federal Agencies and for the state of Missouri as the trustee. While the brief presentation here in the proposed plan may be adequate to proceed with the development of the ROD, a more complete characterization of the areas impacted and a more thorough risk assessment are necessary.
5. Page 13, paragraph entitled **Sediments**, the logic for discounting metals and organics from the Contaminants of Concern (COC) has no scientific basis. The speculation that elevated concentrations are the likely result of area industry does not rule out St. Louis Airport Site (SLAPS) and HISS/Futura as contributors. Please retain arsenic and the five organics as COC for sediments.
6. Page 13, top right-hand side, paragraph entitled **Ecological Risk**, referencing comment #5 above:
Because there has not been a thorough characterization of Coldwater Creek, especially north of I-270, the use of the screening process is not appropriate or sufficient to conclude there is not or has not been an ecological impact. Please revise or clarify that additional assessments may be required to evaluate Natural Resource Injury Assessment.
7. Page 14, **Applicable or Relevant and Appropriate Requirements** and page 15 **Derivation of Remediation Goals and Cleanup Levels**:
The development of the Thorium criteria using 10 CFR 40, Appendix A, Criterion 6(6) should use 5 pCi/g for radium for surface and subsurface as the baseline. Is this how the Thorium criteria was developed?
8. Page 14, **Applicable or Relevant and Appropriate Requirements (ARARs)**:
This office identified several ARARs that have been used at other sites having similar or identical COCs and site conditions. The department requests that the USACE reconsider evaluation of these identified ARARs (submitted Fall 1998) and include them in the ROD. How can ARARs noted in Table 10-1 and 10-2 of the SLDS not be used at this site? Additionally, many of the NC sites are within the 100-year floodplain; regulations for these areas are ARARs, clearly USACE/Civil Works is familiar with all regulations dealing with areas within a floodplain. Additionally, having encountered asbestos materials at SLAPS and potentially at other vicinity properties (VC), regulations regarding asbestos handling and disposal are ARARs.
9. Page 17, right hand side, second paragraph:
The soil removal criteria are described as "consistent with the remediation standards used in Engineering Evaluation/Cost Analysis (EE/CA) by DOE prior to transfer." This is incorrect since the surface criteria for Thorium-230 in soils was modified as was the means of

computing the sum-of-the-ratios. In addition, the criteria proposed for contamination of the creek sediments, below the mean water line, is completely different for all the radionuclides.

10. Page 17, right hand side, second paragraph:

The soil cleanup criteria is called a "remediation goal" and is said to "meet the threshold criteria" for human health and the environment and compliance with ARARs and will achieve a final status that requires no restrictions on land use. This is incorrect. Please refer to comments under the section titled "Comments on Radiological Soil Removal Criteria" and modify these or avoid making similar statements in the upcoming Record of Decision.

11. Page 21, Transportation and Waste Management:

The 4th sentence states "trucking may also be used for long distance shipping." The department has concerns with shipping large quantities of these contaminated materials via our highways due to increased potential for accidents and the spread of contamination. Please clarify when and why this option would be used and provide a cost analysis if this option were taken.

12. Page 21, Transportation and Waste Management:

Crushing rubble and similar material for disposal is described, and then mention is made that "site soils could be used as backfill if they are not impacted, or if they meet the cleanup criteria for surface soils." Due to mismanagement of rubbleized material which has already occurred at the SLDS site regarding the interpretation of material suitable for fill, please confirm that the term rubble and soil is used as intended here and that crushed concrete and building debris will not be used as backfill. We request the USACE provide us with prior notice of the destination of all materials shipped off-site for disposal (please remember Missouri Solid Waste Regulations prohibit placing MED/AEC impacted materials into any Missouri landfills). We also do not concur with reusing excavated soils as fill unless they are determined, with sufficient opportunity for regulator review of the sampling plan and resultant data, not to be impacted.

13. Page 21, Transportation and Waste Management:

The statement is made that "uranium would be recycled if the costs are similar to the cost of disposal." Please acknowledge that no on-site recycling processes are permitted without prior approval. In addition, please provide prior notification to the department and the EPA regarding the destination of materials shipped, including to recycling facilities.

14. Page 22-25, Alternatives:

The sections titled Excavation and Dredging all describe soils and sediment removal criteria as being remediation goals or criteria for unrestricted release. This is incorrect. Please refer to comments under the section titled "Comments on Radiological Soil Removal Criteria" and modify these statements accordingly. Please note that clarification is needed to ensure the reader is aware that post-remedial action risk assessments will decide long-term care and institutional controls.

15. Page 25, last paragraph:

Please revise the paragraph to note the need for post-remedial action risk assessments to

decide long term care and institutional controls. The statement "No institutional controls would be required for accessible soils" is the goal. However, without post-remedial action risk assessments that demonstrate the goal was met, the statement is misleading.

16. Page 26, second column, 3rd paragraph:

This paragraph should read: "Five-year reviews should be conducted of the remedy protectiveness to the groundwater, contamination left in place due to accessibility problems, changes to properties with residual concentrations not meeting the CERCLA risk range, the responsiveness to requests for assistance, and data results with responses to action level triggers for buildings being monitored for radon."

17. Page 29, second column, first paragraph under *Alternative 5, etc.*:

Discussions on unrestricted use designations need modification in accordance with comments already made on the use of a post-remedial action risk assessment.

18. Page 30, continuation of *Alternative 5*:

A claim is made that *Alternative 5* does not conflict with state policies regarding radioactive contaminated material in Missouri. Please revise this comment or acknowledge it does not comply with Missouri Solid Waste Regulations.

19. Page 32, 3rd paragraph under title "St. Louis North County Site Preferred Alternative":

When stating remediation goals, the word "or" is used instead of the word "and." Please revise this statement or provide clarification, as it sounds to the reader that the radiological COC and corresponding criteria can be chosen rather than using a sum of all three.

20. Page 32, paragraph 1 under "St. Louis North County Preferred Alternative":

The statement is made that "Institutional controls are used to ensure protectiveness for alternatives at areas in which the residual concentrations exceed the concentrations in ARARs for residential use" The soil removal criteria was not risk based and cannot be associated with an end-use scenario. Please revise the paragraph to note the need for post-remedial action risk assessments to decide long term care and institutional controls.

21. Page 32, second column, paragraph 3:

The paragraph states that "Inaccessible soils . . . are not addressed by this remedial action. The paragraph also states that "New decision documents will identify the response actions to address the inaccessible soils as appropriate." We cannot concur with this proposal unless response actions are pre-defined. Please revise the proposal to remove all contamination or provide a separate stewardship plan that ensures long term care and controls will be available. Comments under the section heading "Long Term Stewardship."

22. Page 32, 7th paragraph under title "St. Louis North County Site Preferred Alternative":

It is stated "This alternative requires institutional controls to ensure that roads are not excavated without appropriate oversight and safety procedures and constraints." Who will oversee and execute these safety procedures after the project has been completed and the USACE no longer has an on-site presence?

23. Page 32, St. Louis North County Site Preferred Alternative:

This section does not give any reference to which excavated soils or other material can be placed back onto the property of origin. Please clarify this. As pointed out earlier, the department does not concur with re-using excavated soils as fill unless they are determined, with opportunity for review of the data prior to use, to be non-impacted.

24. Page 32, last paragraph:

It is stated, "Size reduction would be used for materials such as concrete debris." Will this material be used as backfill material using criteria in the Consolidated Materials Report?

25. Page 33, first column, paragraph 1:

The statement is made, "excavated material would be shipped primarily from the rail spurs . . ." Is the USACE considering using other shipping methods? If, so what are they?

26. Page 33, first column, paragraph 2:

The statement is made "soils may be shipped off-site to a properly permitted disposal site, including sites where uranium is recovered." None of the current disposal facilities have uranium recovery capabilities. Please remember that both the department and the oversight committee requested notification of disposal facilities being considered for use. Are disposal contracts existing for other places than Envirocare in Utah or Enviro-safe in Idaho? Please acknowledge that both the oversight committee and the department will be given notice prior to the USACE's signing of new disposal contracts.

27. Page 33, first column, second to last paragraph:

The plan states, "no remediation of surface waters or ground water is required or included." and "The source removals will improve water quality." The source (soil) removals should prevent further degradation of the water quality; however, improvement of water quality is questionable. Please acknowledge that groundwater data assessment is ongoing and that conclusions regarding the impact of source removal have yet to be made.

28. Page 34, second column, first paragraph:

The statement is made that the five-year review is "conducted for only those areas where COCs remain above unrestricted use criteria." Please note that the following statement is more comprehensive: "Five-year reviews should be conducted of the remedy protectiveness to the groundwater, contamination left in place due to accessibility problems, changes to properties with residual concentrations not meeting the CERCLA risk range, the responsiveness to requests for assistance, and data results with responses to action level triggers for buildings being monitored for radon." Please acknowledge the need for revising the statement, and that you would consider including similar verbiage within the ROD.

29. Page 34, second column:

Groundwater monitoring is described. Please see comments under the section titled "Groundwater Contamination" and consider having a discussion on the USACE expectations for short-term monitoring within an upcoming groundwater technical working group meeting.

30. Page 35, first column, continued paragraph from page 34:

The USACE lists the benefits of Alternative 5. The disadvantages of Alternative 5 are:

- a) Properties with contamination concentrations above soil guideline criteria will require long term care and controls which could include the monitoring of buildings for radon.
- b) Long-term care and controls on all properties could be required, depending on the results from post remedial risk assessments.
- c) A plan for long-term care and controls is required, and funding for this must be secured.
- d) Technical support, material storage, plus contamination removal and waste transportation services will have to be located nearby and able to offer a timely enough response to not inhibit local development.

31. Page 36, first paragraph on the left, see comment 9:

Many of the USACE's responses to the state ARAR list had no basis. Additionally, the ARARs identified by the state are consistent with and used at other sites with the same contaminants and setting. Please include the ARAR's list.

32. Figure 6:

With the exception of the Futura buildings, the remainder of inaccessible areas involve roads or railroads. Some of the railroad spur tracks depicted on the map are presently not used or have been rendered unusable. Why would spur tracks that are not being used or abandoned be considered inaccessible? If the spur tracks are not being used or have been abandoned, the time to remove the contamination is now, rather than place institutional controls that may or may not be effective and cause unnecessary development restrictions to the property owner.

33. Figure 6:

In addition, has there been a characterization of these roads and railroads to identify whether or not contamination is present? Figure 6 currently depicts all of the inaccessible areas identified are contaminated and will require an enforceable and strict land use control. Why designate all of the areas if in fact there may not be a need? This causes potential development problems to the property owner and it creates an undue cost for local, state, and federal governments to monitor and maintain vigilance of the areas.

Specific Comments on the FS

1. Much of the verbiage in the PP and FS are similar. Therefore, comments made regarding the PP apply to those applicable sections in the FS. However, we reiterate that the document should:
 - a) clearly show that post-remedial action risk assessments will be conducted and suitable to define land use restrictions if removal criteria is not an unrestricted use guideline,
 - b) propose criteria for the decontamination of structures,
 - c) include a long-term-stewardship plan and the necessary funding.

2. Page ES-22, 3rd paragraph:

This paragraph discusses non-radiological contaminants of concern (COC) and states that only certain chemicals are defined as non-radiological COCs for surface and only a few of these are defined as COCs for subsurface. Please explain the rationale behind this decision. It is also stated that there are different non-rad COCs for SLAPS and contiguous areas and HISS/Latty. Again, please explain the rationale behind this decision. Additionally, is Coldwater Creek included in contiguous areas of the SLAPS? If not, what are the non-radiological COCs for Coldwater Creek?

3. Page ES-31, Under the title "Institutional Controls:"

It is stated, "For alternatives that use institutional controls, a long-term stewardship plan would be developed . . ." Please recognize that a long-term stewardship plan should be developed regardless of the use of institutional controls.

4. Page ES-31, under the section titled "Transportation and Waste Management:"

It is stated, "Site soils could be used as backfill if they are unimpacted, or if they meet the cleanup criteria for surface soils." The state would like a definition of the term "soils." Would this extend to any concrete debris, rock, or other material? In addition, how would sampling be performed on soils to determine if it meets the criteria? Would soil be separated out in different piles according to radiological activity and then how would sampling be performed on these piles? Further concerns regard the approach of mixing soils to reduce the activity so the soil could be used as backfill. This approach is not acceptable. Finally, consent must be obtained from the owner before using "recycled" soil on the vicinity properties.

5. Page ES-36, 1st bullet:

It is stated that new decision documents will identify response actions to be used when an inaccessible area becomes accessible. When will this new decision document be developed? It is hoped that this decision document will be developed before the project ends so that there will be a plan in place in the case where inaccessible areas become accessible in the future. If a new "decision document" is developed, that process must be addressed within the Federal Facility Agreement framework.

6. Page ES-36, 3rd bullet:

It is stated, "Controls could also include zoning restrictions at Futura." Why just Futura? What about other vicinity properties where contamination may exist underneath the buildings?

7. Page ES-37, 1st paragraph:

What long-term monitoring be performed at Coldwater Creek where sediment is left above unrestricted use criteria (below the mean water line), and what kind of institutional controls will be in place?

8. Figure ES-3:

This map does not depict any contamination under buildings other than at Futura. Were all

the buildings in that area constructed before the area was contaminated? If not, then investigations should include those buildings to determine if additional areas are impacted.

9. Page 2-65, 4th paragraph:

This paragraph discusses a process to determine whether or not non-radiological COCs were co-mingled with radiological COCs and subsequently removed when radiological contamination was removed. A similar process must be performed with all of the vicinity properties and documented in a Post-Remedial Action Report (PRAR). Please acknowledge how this will be included in the ROD.

10. Page 2-68, Table 2-12:

Why is uranium not listed as a COC for HISS/Futura and Latty Avenue VPs 2L and 10K530087?

11. Page 3-5, 5th paragraph:

The department disagrees with the statement made that there are no location or action specific ARARs identified for the NC sites. During removal actions, action specific ARARs included air emission regulations, stormwater discharge regulations, historical preservation regulations, etc. In addition, location-specific ARARs included the height restriction for the SLAPS as well as any flood-plain regulations that exist. Please revise the list of ARARs to include such regulations, many of which we've previously identified on the state ARAR list.

12. Table C-1:

HISS/Futura, Alternative 5 states, "Excavate for release without restrictions." This is not a completely accurate statement. The soils under the buildings and the driveway next to the building would still contain residual contamination. Please revise this statement to indicate placement of necessary institutional controls in such areas of the property.

13. Table C-1:

Coldwater Creek, Alternative 5 states, "Excavate to Coldwater Creek criteria below the mean water level for release without restriction." Again, this is not an accurate statement. The criteria for below the mean water line were modeled using a recreational scenario. Using a recreational scenario, the criteria meets an acceptable risk, but this does not mean it meets unrestricted use (suburban farmer). Please revise the statement to clarify under what scenario the criteria meets an acceptable risk. Additionally, the public and the department has asked that the cleanup of this area meet the same protective limits as other areas. If this can not be achieved then appropriate IC's and stewardship management plans must be applied.

14. Page D-14, 4th paragraph:

The background values are slightly different than those used in previous documents. Please explain the changes.

15. Page D-27:

What does eliminated manganese, as a COC have to do with eliminating arsenic as a COC? How are these two chemicals related?

16. Page D-37:

EPA guidance (Directive 9200.4-35P) states that dose limits based in NRC Criteria 6(6) (25 mrem/yr.) should not be used for establishing remediation goals under CERCLA. The EPA also determined that dose limits above 15 mrem/yr. are not protective under CERCLA. Please acknowledge that the proposal does NOT meet dose requirements under CERCLA and that USACE intends to use a post-remedial assessment to determine the need for land use restrictions or controls.

17. Page D-49, Table D-15:

When stating remediation goals, the word "or" is used instead of the word "and." Please revise this statement, because it implies the radiological COC and corresponding criteria can be chosen rather than using a sum of all three.

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