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Proposed Plan for the Management of Bulk Wastes at the Weldon Spring Quarry, Weldon Spring, Missouri

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U.S. Department of Energy
Oak Ridge Operations Office
Weldon Spring Site Remedial Action Project

PROPOSED PLAN FOR THE MANAGEMENT OF BULK WASTES AT THE WELDON SPRING QUARRY, WELDON SPRING, MISSOURI

1 INTRODUCTION

This proposed plan addresses the management of contaminated bulk wastes at the Weldon Spring quarry, which is one of two noncontiguous areas comprising the Weldon Spring site in St. Charles County, Missouri. Activities at the site are being conducted by the U.S. Department of Energy (DOE) under its Surplus Facilities Management Program. Support agencies for the Weldon Spring Site Remedial Action Project are the U.S. Environmental Protection Agency (EPA) Region VII and the Missouri Department of Natural Resources (designated by the state of Missouri to coordinate project involvement).

A remedial investigation/feasibility study (RI/FS) has been prepared in accordance with requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, to document the proposed management of the quarry bulk wastes as a focused interim remedial action for the Weldon Spring Site Remedial Action Project. The RI/FS consists of three documents: the RI report, a baseline risk evaluation (BRE), and an FS report. Because activities at the Weldon Spring site are also conducted in compliance with the National Environmental Policy Act (NEPA), an assessment of environmental impacts has been incorporated into the RI/FS, which will support a NEPA determination for this interim remedial action. The RI/FS for the quarry bulk waste remedial action is the source of information presented in this proposed plan. The role of this interim remedial action in the overall remediation process for the site is discussed in Chapter 3 of this plan.

The purposes of the proposed plan are to:

- Present a notice and brief analysis of the proposed quarry bulk waste remedial action, pursuant to Section 117(a) of CERCLA;
- Describe the remedial action alternatives for this interim remedial action;
- Identify the currently preferred alternative for managing the bulk wastes and present the rationale for this preference;
- Serve as a companion document to the RI/FS and administrative record file for this action; and
- Outline the public's role in the decision-making process for this action.

Identification of the currently preferred alternative is based on analysis of available information and on evaluation of potential alternatives for the bulk waste

remedial action. However, a final determination has not yet been made; the alternative selected for implementation will be documented in the record of decision for the remedial action following receipt and consideration of public comments and any significant new information that may become available. In publishing this proposed plan, DOE encourages public review and comment on all alternatives evaluated in detail in Chapter 7 of the FS (summarized in Section 6.2 of this proposed plan). Information on the bulk waste remedial action may be found in the RI, BRE, and FS reports and in supporting technical reports in the administrative record for the quarry (see Chapter 7 of this plan).

Consideration of community input may result in modifying the ultimate remedial action selected so that the final decision may differ from the preferred alternative identified in this plan. Therefore, public comment on each alternative in this plan and on supporting information for the alternatives is an important element of the decision-making process for the bulk waste remedial action, as it is for all remedial actions at the Weldon Spring site.

The proposed plan is organized as follows:

- Chapter 2 presents the history and setting of the Weldon Spring site and defines the quarry bulk wastes,
- Chapter 3 describes the operable unit for the quarry bulk waste interim remedial action and its role in the Weldon Spring Site Remedial Action Project,
- Chapter 4 summarizes the risks associated with the bulk wastes under current conditions,
- Chapter 5 identifies the alternatives considered for the bulk waste remedial action,
- Chapter 6 summarizes the evaluation of final alternatives for managing the bulk wastes and identifies the currently preferred alternative, and
- Chapter 7 presents the community's role in this action.

2 SITE DESCRIPTION

The physical setting and history of the Weldon Spring site are described briefly in Sections 2.1 and 2.2, respectively. The contamination in the quarry bulk wastes is summarized in Section 2.3.

2.1 PHYSICAL SETTING

The Weldon Spring site is located in St. Charles County, Missouri, about 48 km (30 mi) west of St. Louis (Figure 1). The site consists of two noncontiguous areas: (1) the quarry, about 8 km (5 mi) southwest of the city of Weldon Spring, and (2) the chemical plant area, about 3.2 km (2 mi) southwest of the junction of Missouri (State) Route 94 and U.S. Route 40/61 and about 6.4 km (4 mi) north-northeast of the quarry.

The quarry covers approximately 3.6 ha (9 acres); the areal extent of its main floor is about 0.8 ha (2 acres), one-fourth of which currently contains ponded water to a depth of about 6 m (20 ft). The quarry was excavated for limestone into a bluff that forms a valley wall at the edge of the Missouri River alluvial floodplain. It is vegetated with grasses, shrubs, and trees and is surrounded by the Weldon Spring Wildlife Area.

The chemical plant area covers about 88 ha (217 acres) and contains various buildings and ponds (including four raffinate pits), as well as gravel and paved surfaces. The chemical plant area is vegetated with grasses, shrubs, and small trees and is bordered by the August A. Busch Memorial Wildlife Area to the north, the Weldon Spring Wildlife Area to the south and east, and the U.S. Army Reserve and National Guard Training Area to the west.

2.2 HISTORY

In April 1941, the U.S. Department of the Army acquired about 7,000 ha (17,000 acres) of land in St. Charles County, Missouri, for construction of the Weldon Spring Ordnance Works -- a production facility for trinitrotoluene (TNT) and dinitrotoluene (DNT) explosives. The facility began operations in 1941 and closed in 1946. By 1949, all but about 810 ha (2,000 acres) of the ordnance works property had been transferred to the state of Missouri and the University of Missouri for use as wildlife area and agricultural land. In May 1955, the U.S. Atomic Energy Commission (AEC, a predecessor of DOE) acquired 83 ha (205 acres) of the property from the Army by permit; an additional 6 ha (15 acres) was later transferred to the AEC for expansion of waste storage capacity. The AEC constructed a chemical plant on the property for processing uranium and thorium ore concentrates and operated the plant from 1957 to 1966. The quarry, which had been used by the Army since the early 1940s to dispose of chemically contaminated materials, was transferred to the AEC in July 1960 and was subsequently used to dispose of radioactively contaminated materials (e.g., uranium and thorium residues, building rubble, and process equipment) through 1969.

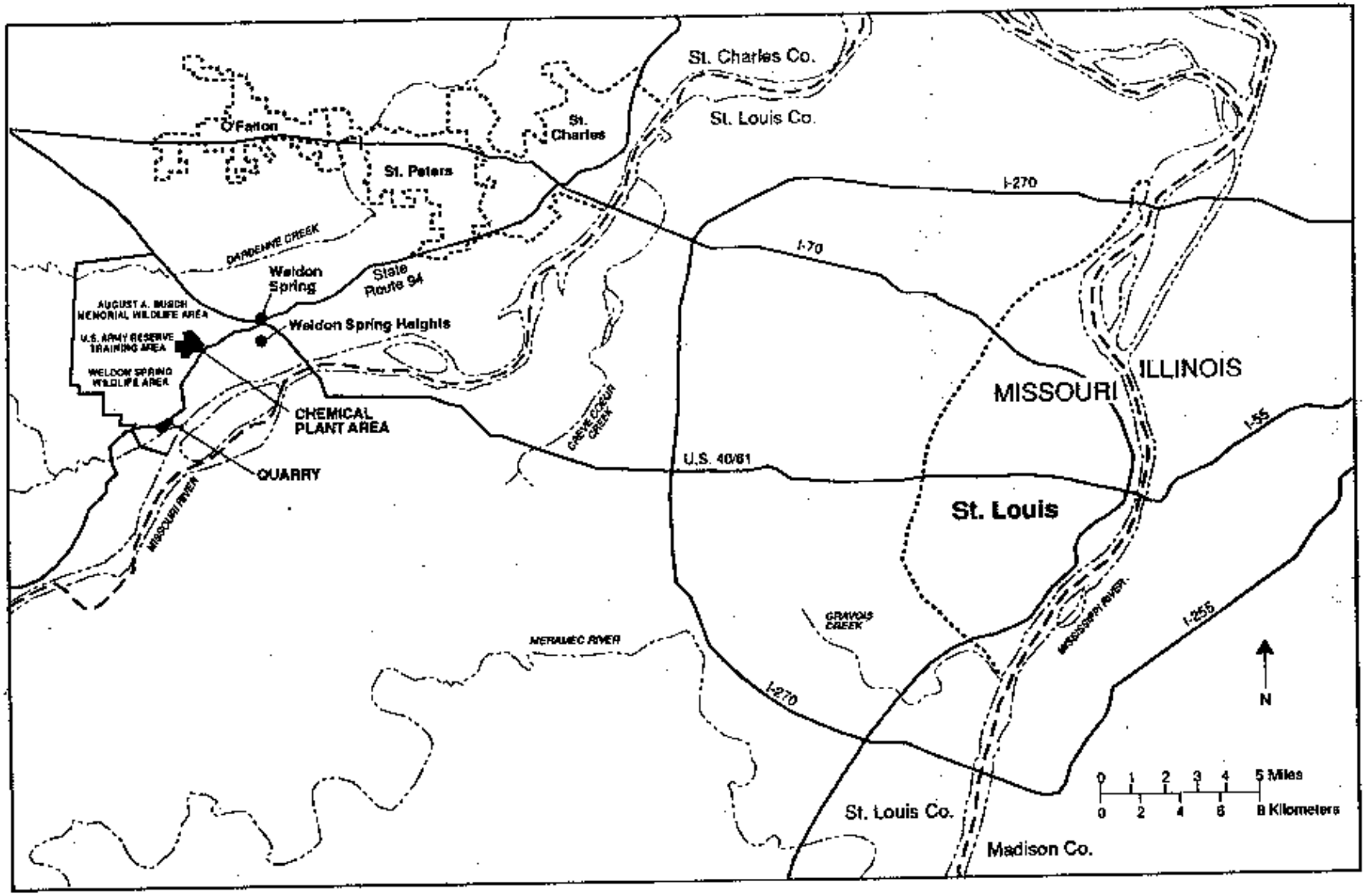

FIGURE 1 Location of the Weldon Spring Site, Weldon Spring, Missouri

The Army reacquired the chemical plant site in 1967 and began converting the facility for herbicide production. Contaminated rubble and equipment from some buildings were placed in the quarry during conversion activities. The herbicide project was canceled in 1969 prior to any production, and the plant has remained essentially unused and in caretaker status since that time. The Army returned the raffinate pits portion of the chemical plant area to the AEC in 1971; custody of the remainder of the chemical plant area was transferred from the Army to DOE in 1985. The quarry was listed on EPA's National Priorities List in July 1987, and the chemical plant area was added to this listing in March 1989. The balance of the former Weldon Spring Ordnance Works property, which is adjacent to the DOE portion of the property and for which the Army has responsibility, was proposed for NPL listing in July 1989.

2.3 BULK WASTE CONTAMINATION

Quarry bulk wastes are defined as the chemically and radioactively contaminated solids present in the quarry that can be removed by standard technologies. The total volume of these wastes -- which consist primarily of soils, sludges, equipment, and structural debris -- is about 73,000 m^3 (95,000 yd^3). Radioactive contamination in the bulk wastes covers an area of about 15,900 m^2 (19,000 yd^2) and extends to a depth of 12 m (40 ft), with an average depth of about 4 m (13 ft). The primary radioactive contaminants are components of the uranium-238 and thorium-232 decay series, including radon gas. Chemical contaminants are heterogeneously distributed throughout much of the bulk wastes and are generally limited to depths of less than 3.6 m (12 ft). Certain species (e.g., nitroaromatics) are highly localized due to past disposal operations. The primary chemical contaminants include various nitroaromatic compounds (e.g., 2,4-DNT, 2,6-DNT, 2,4,6-TNT, and 1,3,5-trinitrobenzene), metals (e.g., arsenic, lead, nickel, and selenium), polynuclear aromatic hydrocarbons, and polychlorinated biphenyls.

3 QUARRY BULK WASTE OPERABLE UNIT

The proposed management of bulk wastes at the quarry is one of several components of the Weldon Spring Site Remedial Action Project. An overview of the environmental compliance strategy for this project is presented in Figure 2. The overall remedial action for the site will be addressed in an RI/FS that will be modified to incorporate the requirements of an environmental impact statement (EIS) for NEPA compliance. This document, termed an RI/FS-EIS, will evaluate alternatives for overall site remediation. As identified in Figure 2, various interim actions (both expedited response actions and interim remedial actions) will be performed prior to completion of the RI/FS-EIS in order to mitigate actual or potential releases of radioactive or chemical contaminants into the environment. The bulk wastes are being addressed as an interim remedial action for the project. This proposed action does not address final disposal of the bulk wastes; disposal decisions are part of the overall remedial action for the Weldon Spring site and will be addressed in the RI/FS-EIS that is currently in preparation.

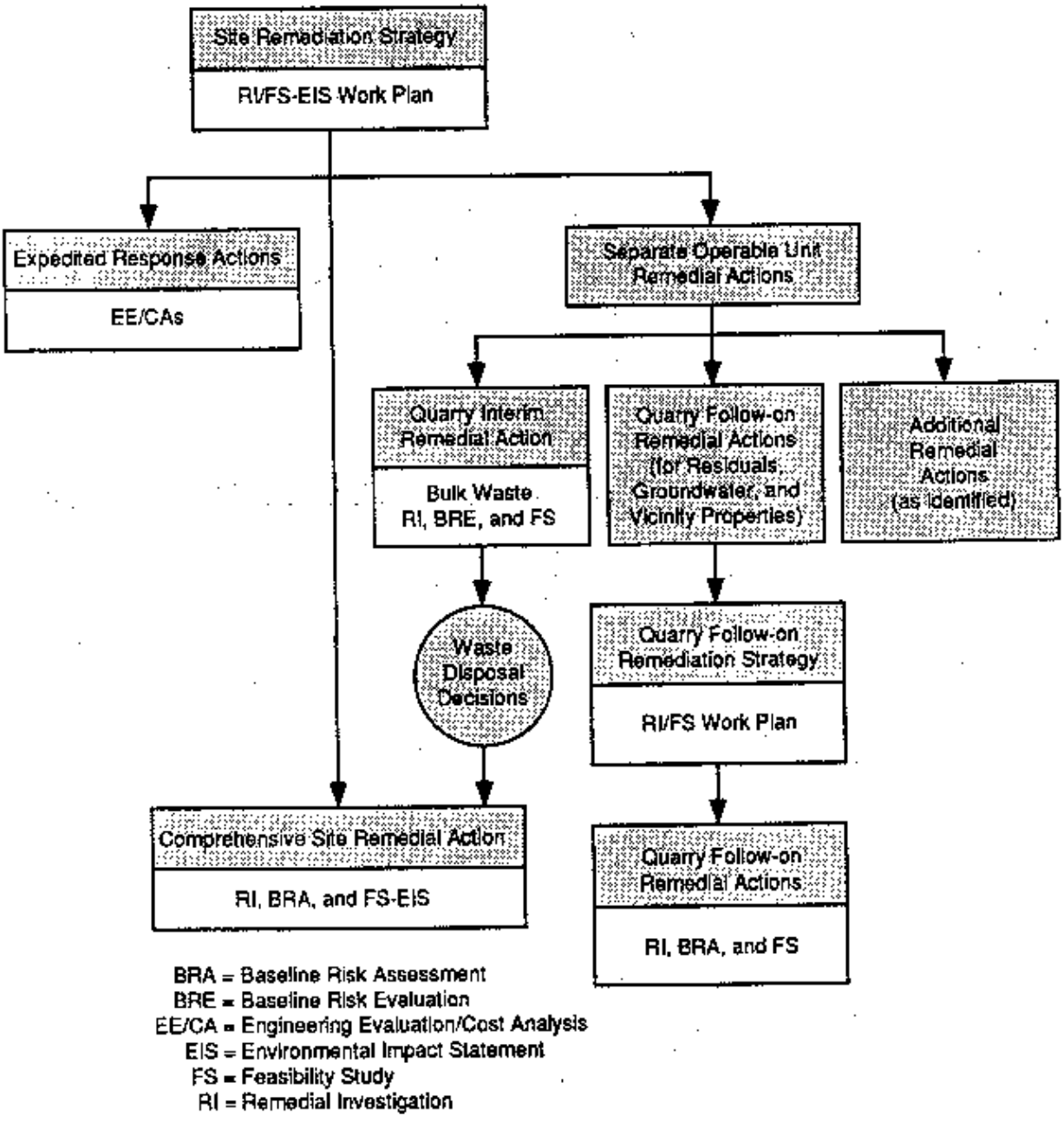

FIGURE 2 Major Environmental Compliance Activities and Related Documents for the Weldon Spring Site Remedial Action Project

The quarry bulk wastes are the focus of the interim remedial action being presented in this proposed plan. This action is being conducted as a separate operable unit to minimize the potential for further migration of contaminants from the quarry and to facilitate overall site cleanup. The bulk wastes constitute the source of contaminants that are being released into the air at the quarry and are migrating through the fractured walls and floor of the quarry into the underlying groundwater. An alluvial well field that supplies drinking water to more than 60,000 residents of St. Charles County is located within 1.6 km (1 mi) of the quarry.

Management of the bulk wastes addresses one of five separate components of the overall environmental response under consideration for the quarry (Figure 3). The five components are (1) bulk wastes, which constitute the source of contaminants migrating into the air and underlying groundwater at the quarry; (2) surface water, which provides the hydraulic gradient for contaminant migration to groundwater; (3) groundwater; (4) vicinity properties, which are contaminated properties outside the quarry for which DOE is responsible (e.g., Femme Osage Slough); and (5) materials remaining in the quarry walls and floor after bulk waste removal (i.e., residuals).

In response to a potential threat to the nearby drinking water supply, management of contaminated surface water is the first of these five components being addressed. The quarry pond is providing a gradient for contaminant migration into the local groundwater because the pond surface is higher than the nearby groundwater table. The expedited response action for this component has been documented in an engineering evaluation/cost analysis (EE/CA) report. The alternative selected as a result of the EE/CA process, which included public review and comment, was to treat the pond water in a facility constructed adjacent to the quarry and release the treated water to the Missouri River in compliance with a permit issued to DOE by the Missouri Department of Natural Resources. The action is expected to be initiated in 1991 and will continue until subsequent decisions on source control are implemented for a permanent solution at the quarry (e.g., decisions on management of the bulk wastes).

The comprehensive response actions for groundwater, vicinity properties, and residual materials can be developed only after the bulk wastes are removed from the quarry so that the nature and extent of residual contamination and migration pathways can be fully assessed. These actions, which will address final quarry cleanup criteria, will be developed in consultation with EPA Region VII and the state of Missouri and will be described in follow-on documents for the quarry.

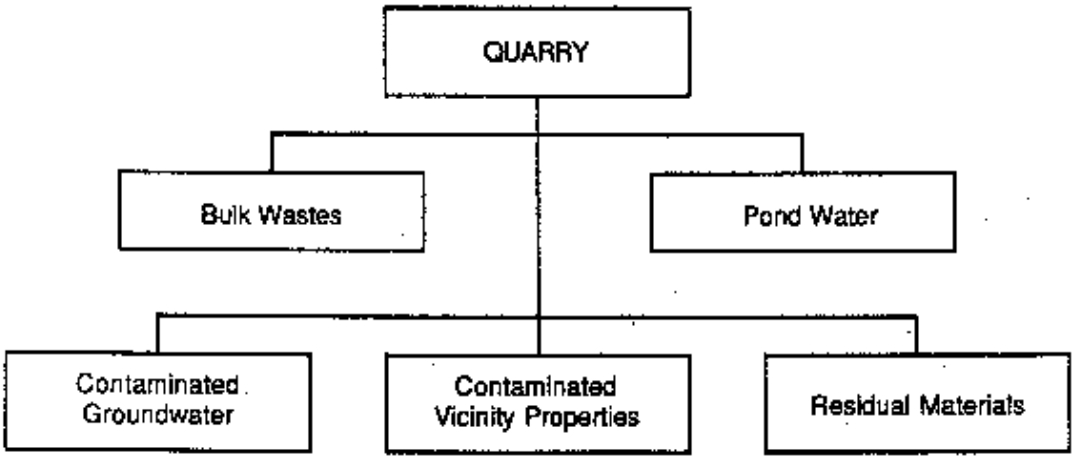

FIGURE 3 Environmental Compliance Components for the Weldon Spring Quarry

4 SUMMARY OF SITE RISKS

Potential health and environmental risks associated with the bulk wastes at the quarry were evaluated in the BRE to facilitate the decision-making process for response actions at the quarry; the BRE is summarized in Chapter 3 of the FS. Two scenarios were evaluated to assess potential health risks from short-term exposures to the bulk wastes: (1) a passerby scenario, which considers potential exposure of a hypothetical individual who routinely walks by the quarry, and (2) a trespasser scenario, which considers potential exposure of a hypothetical individual who enters the quarry several times per year. The scenarios were defined such that the nature and duration of the exposures would provide upper bound estimates of the potential risks to any individual exposed to releases outside the quarry fence or to an individual who might trespass in the quarry. Thus, although other more realistic scenarios were considered (e.g., a person who routinely drives by the quarry or an individual visiting the surrounding wildlife areas), such scenarios were not explicitly evaluated because the exposures of these receptors would be similar to but less than the exposures estimated for the passerby scenario.

Under current land-use conditions in which access to the quarry is restricted, the carcinogenic risks associated with potential exposures to the quarry bulk wastes are low. The major contributor to this risk is inhalation of radon-222 and its short-lived decay products. Noncarcinogenic risks to individuals outside the quarry are also very low. However, the potential exists for adverse health impacts to frequent trespassers at the quarry. Although it is unlikely that under current site conditions an unprotected individual would routinely enter the quarry, the findings of this evaluation emphasize the need for effective access control in the short term and for implementation of remedial action at the quarry to ensure protection of human health in the long term.

Potential environmental risks associated with the bulk wastes at the quarry were considered for water resources, soil resources, air quality, vegetation, and wildlife. No adverse impacts have been observed for soil resources, air quality, vegetation, or wildlife. The major impact that could result from gaseous releases, i.e., radon, was addressed in terms of its potential impact on human health. Water resources have been impacted by the presence of the bulk wastes in the quarry. Surface water within the quarry has already been contaminated as a result of contact with the bulk wastes, but incremental contamination from continued contact, e.g., future surface runoff, is not expected to significantly alter the existing water quality. Groundwater in the vicinity of the quarry has been contaminated as a result of leaching from the bulk wastes. If the bulk wastes remain in the quarry, contaminants could migrate farther into the surrounding environment and contaminant concentrations might increase.

5 PRELIMINARY ALTERNATIVES

The objectives of response actions at the quarry are to (1) facilitate cleanup decisions for the quarry, (2) support comprehensive waste-management decisions for the project, and (3) address potential risks associated with their presence in the quarry.

Consistent with these objectives, five alternatives were identified for managing the bulk wastes. These five alternatives were developed following an analysis of potentially applicable response technologies; this analysis is presented in Chapter 4 of the FS. In addition, a no-action alternative was included to provide the baseline for a comparative evaluation. Hence, six preliminary alternatives were developed for the proposed action; these alternatives, which are described in Chapter 5 of the FS, are:

- No action;
- Surface containment (with a cover);
- Surface and subsurface containment (with a cover and grout injection);
- In-situ treatment (with vitrification or chemical stabilization/fixation);
- Expedited excavation with temporary storage at the chemical plant area; and
- Delayed action pending the record of decision for the site.

These preliminary alternatives were screened in Chapter 6 of the FS according to EPA's three screening criteria — effectiveness, implementability, and cost. Effectiveness is defined by the ability of an alternative to protect human health and the environment in both the short term and the long term; the reduction of contaminant toxicity, mobility, or volume is considered a measure of effectiveness. Implementability is defined by the technical feasibility, resource availability, and administrative feasibility (i.e., acceptability) of an alternative. Costs can be considered on a relative basis at the screening stage. Results of the screening of preliminary alternatives are presented in Table 1. Based on this screening, three final alternatives were identified for managing the quarry bulk wastes:

- No action;
- Expedited excavation with temporary storage at the chemical plant area; and
- Delayed action pending the record of decision for the site.

These final alternatives were evaluated in detail in Chapter 7 of the FS; the evaluation is summarized in Chapter 6 of this proposed plan.

TABLE 1 Screening of Preliminary Alternatives

Alternative	Effectiveness	Implementability	Cost
Alternative 1: No action	Continued migration of contaminants from the bulk wastes could increase exposures of human, animal, and plant populations to chemicals and radionuclides over time. Contaminant toxicity, mobility, and volume would not be reduced.	Not applicable.	Not applicable.
Alternative 2: Surface containment	Exposures could be reduced in the short term but are not expected to be effectively reduced over the long term due to the potential for subsurface migration. Contaminant mobility would be somewhat reduced, but toxicity and volume would not be reduced.	Very difficult due to the topography and extent of the contaminated area.	Lower than other action alternatives in the short term but expected to be higher than those alternatives over time due to monitoring and maintenance and questionable effectiveness (i.e., the eventual need for a more effective response), which would increase costs due inflation and the potential increased extent of contamination.

TABLE 1 (Cont'd)

Alternative	Effectiveness	Implementability	Cost
Alternative 3: Surface and subsurface containment	Reduction of potential exposures could be greater than for Alternative 2 in the short term, but effectiveness over the long term is doubtful due to difficulties in ensuring and maintaining containment in a fractured setting. Reduction of contaminant mobility would be greater than for Alternative 2 in the short term, but toxicity and volume would not be reduced.	Essentially infeasible due to difficulties associated with surface containment (as for Alternative 2) and with subsurface containment due to the extent of the affected area, depth and type of waste material, and fractured nature of the bedrock.	Significantly greater than Alternatives 2 and 5 due to serious difficulties associated with attempting to drill and grout under existing waste conditions, the fractured subsurface, and questionable effectiveness.
Alternative 4: In-situ treatment	More protective than Alternatives 1, 2, or 3, but effectiveness over the long term is questionable due to uncertainties associated with verifying treatment success and ensuring the integrity of the solidified waste form over time. Contaminant mobility would be reduced, but not toxicity; the volume might increase or decrease depending on the treatment method.	Essentially infeasible due to the nature and extent of the bulk wastes.	Significantly greater than Alternatives 2 and 5 and could be greater than Alternative 3 due to the type and placement of the wastes, the extensive resource requirements, the need to control moisture content, and questionable effectiveness.

TABLE 1 (Cont'd)

Alternative	Effectiveness	Implementability	Cost
Alternative 5: Expedited excavation	Most protective of all the alternatives; initiates a permanent solution at the quarry and supports follow-on comprehensive quarry remediation and waste management decisions for the entire project. Contaminant mobility would be reduced, but not toxicity; the total volume of materials would increase due to the inclusion of some uncontaminated materials.	Relatively straightforward, using standard equipment and procedures.	Low relative to other alternatives that would be equally or less effective; costs of monitoring and maintenance at the quarry would decrease over time; total project costs could be minimized due to the coordination of decisions for waste disposition.
Alternative 6: Delayed action	Similar to Alternative 1 in the short term and expected to be similar to one of the action alternatives in the long term (i.e., if a similar response was selected following the delay).	Not applicable during the short term and expected to be similar to one of the action alternatives in the long term.	Expected to be higher than certain action alternatives in the long term due to the costs associated with monitoring until action is eventually taken and with inflation and the potential increased scope of the cleanup effort due to contaminant migration.

6 EVALUATION OF FINAL ALTERNATIVES

The final alternatives for managing the quarry bulk wastes were evaluated according to EPA's nine criteria for final remedial actions, as appropriate to the interim remedial action being proposed. These criteria are identified in Section 6.1, the evaluation of alternatives is briefly summarized in Section 6.2, and the alternative currently preferred by DOE and the rationale for its preference are presented in Section 6.3.

6.1 EVALUATION CRITERIA

The nine evaluation criteria for final remedial actions, grouped on the basis of significance and commonality (as identified in EPA guidance), are:

- Overall protection of human health and the environment and compliance with applicable or relevant and appropriate requirements (ARARs);
- Reduction of toxicity, mobility, and volume through treatment; short-term effectiveness; long-term effectiveness and permanence; implementability; and cost; and
- State acceptance and community acceptance.

Management of the bulk wastes is only part of the overall remedial action being planned for the Weldon Spring site (see Figure 2). Therefore, compliance with ARARs relative to ultimate cleanup levels is not included in the alternatives evaluation, based on Section 121(d)(4)(A) of CERCLA, as amended. Cleanup criteria for the quarry can be established only after a decision on managing the bulk wastes has been made and the subsurface has been characterized in detail so that a comprehensive risk assessment can be prepared. The follow-on remedial action decisions for the quarry will specifically address such compliance. Nonetheless, the proposed bulk waste remedial action would be implemented in compliance with related ARARs; these ARARs are presented in Appendix C of the FS. State and community acceptance of the alternatives will be evaluated following the receipt of comments on the RI/FS and this proposed plan (see Chapter 7); the results of this evaluation will be described in the record of decision for managing the bulk wastes. The responsiveness of the final alternatives to the other evaluation criteria is summarized in Section 6.2.

6.2 SUMMARY DESCRIPTION OF FINAL ALTERNATIVES

6.2.1 No Action

The no-action alternative is carried through the detailed evaluation phase of the remedial action decision-making process, consistent with EPA guidance, to provide a

baseline for comparison with the remaining final alternatives. Under this alternative, no further action would be taken to control the contaminant source at the quarry, and the bulk wastes would remain in their current condition. Institutional controls would remain in place at the quarry, including fences and locked gates, monitoring, and site ownership.

Timeliness, engineering controls, construction and operational factors, waste handling and implementation requirements, and costs do not apply to the no-action alternative. Overall protection of human health and the environment at the quarry would not be supported by this alternative because (1) contaminant toxicity, mobility, and volume would not be reduced and (2) short-term and long-term effectiveness would not be achieved. Radon releases from the uncontrolled wastes, which have exceeded DOE limits, would continue. In addition, this alternative would not support a permanent solution at the quarry; such a solution can be most effectively initiated by excavating the wastes so follow-on remediation can be addressed.

6.2.2 Expedited Excavation with Temporary Storage at the Chemical Plant Area

Under this alternative, the bulk wastes would be excavated from the quarry using conventional equipment and standard engineering practices, then transported along a dedicated haul road to the chemical plant area of the Weldon Spring site. After transport, they would be segregated according to physical properties and stored temporarily in an engineered facility, pending a final decision on overall site remediation. The storage facility would be constructed and maintained in a manner that would minimize potential releases. Limited treatment would be conducted, as appropriate, to facilitate implementation (e.g., dewatering could be used after excavation to facilitate waste transport and storage). This alternative would expedite cleanup at the quarry without adversely affecting ultimate waste management decisions for the Weldon Spring Site Remedial Action Project or limiting the choice of reasonable alternatives. The subsequent treatment and/or disposal of the bulk wastes would be addressed in conjunction with that of other on-site materials in the RI/FS-EIS being prepared.

The total volume of materials that would be handled if this alternative were implemented is estimated to be about 110,000 m^3 (140,000 yd^3). This volume includes materials resulting from preparatory clearing and grubbing activities at the quarry, the excavated bulk wastes, uncontaminated materials excavated along with the wastes, expansion of excavated materials following their removal from the quarry, and a 15% contingency factor. An estimated 15 months would be required to implement this alternative at a cost of about $11 million. Institutional controls would consist of continued site ownership, monitoring, and improvement and extension of existing physical barriers, as needed (e.g., for the haul road and quarry support area). Engineering controls would be implemented to minimize potential releases of contaminants (e.g., radon and fugitive dusts) in order to ensure protection of the workers, the public, and the environment during the action period. These controls include limiting the extent of the work area and wetting and/or covering exposed surfaces at the quarry; controlling the speed of transport vehicles on the haul road; and utilizing liners, runon/runoff control systems, and covers for the temporary storage facility at the chemical plant area.

The expedited-action alternative would be timely and would support overall protection of human health and the environment at the quarry in both the short term and the long term. This alternative would (1) reduce contaminant toxicity, mobility, and volume at the quarry through source control; (2) reduce contaminant mobility of the excavated wastes by placing them in controlled storage at the chemical plant area; and (3) facilitate subsequent response activities at the Weldon Spring site, including follow-on quarry remediation, waste characterization, and comprehensive waste management decisions. Hence, this alternative is consistent with and would contribute to a permanent solution at the quarry and the efficient performance of overall remedial actions being planned for the site. Furthermore, it could be implemented with readily available equipment and standard engineering procedures. It would also be cost-effective because it would limit both inflationary effects and potential increased cleanup efforts that would result if contamination at the quarry spread before a response was implemented.

6.2.3 Delayed Action Pending the Record of Decision for the Site

Under this alternative, no action would be taken for the quarry bulk wastes until a decision was made regarding the ultimate disposition of the entire Weldon Spring site. Rather than being expedited, remedial action at the quarry would be postponed until the site record of decision was approved, following issuance of the RI/FS-EIS currently being prepared. Hence, this alternative is similar to the no-action alternative in the short term. The delay period is expected to last about 2 to 5 years.

In the longer term, when the response was implemented following the delay period, many of the considerations for this alternative could be similar to those for the expedited-action alternative, i.e., if an excavation alternative were eventually selected pursuant to the record of decision. That is, waste handling and implementation requirements and engineering and institutional controls would be similar to those for the expedited-excavation alternative. Delaying initiation of a response action for the bulk wastes would result in continued migration of contamination from the quarry, which could adversely impact human health and the environment. The cost of implementing this alternative is expected to increase because of inflation; the total cost of comprehensive quarry remediation could increase even further if the extent of contamination and the resultant scope of required cleanup efforts increased as a result of the delay.

6.3 PREFERRED ALTERNATIVE

Based on an evaluation of the final alternatives for managing the quarry bulk wastes, expedited action has been identified as DOE's preferred alternative. Under this alternative, the bulk wastes would be excavated from the quarry, transported along a dedicated haul road, and placed in controlled storage at the chemical plant area pending a decision on the ultimate disposition of the Weldon Spring site.

At this time, the expedited-action alternative represents the best balance among EPA's evaluation criteria for remedial actions (see Section 6.2.2). The no-action and delayed-action alternatives would not support a permanent solution at the quarry during

the short term, and they would hinder the decision-making process for and implementation of overall site cleanup. Timeliness, implementability, and cost do not apply to the no-action alternative. Although implementation of the delayed-action alternative might be similar to that of the currently preferred alternative during the action period, it is not considered timely because of the delay. Delaying cleanup could also increase the contaminant migration problem at the quarry, which would negatively impact overall protectiveness and cost-effectiveness.

Expedited excavation of the bulk wastes from the quarry would protect human health and the environment by (1) controlling the primary source of ongoing contaminant releases from the quarry via air and groundwater and (2) maintaining the wastes in controlled storage at a facility engineered to prevent contaminant releases to the environment. Expedited excavation would also promote the effectiveness of site cleanup by facilitating detailed characterization of (1) the quarry subsurface, to address complete follow-on remediation, and (2) the bulk wastes, to support comprehensive waste management decisions for the project.

The RI/FS and the proposed plan for the quarry bulk waste remedial action have been reviewed by EPA Region VII and the state of Missouri. Both support agencies concur with DOE's preferred alternative.

7 COMMUNITY PARTICIPATION

Input from the public is an important element of the decision-making process for remedial actions at the Weldon Spring site. Comments on the RI/FS and the proposed plan for the quarry bulk waste remedial action will be received during the public comment period following issuance of these documents. Oral comments will be received at the public meeting to be held for the proposed action. Written comments may be either submitted at the public meeting or mailed before the close of the comment period to:

Stephen H. McCracken, Project Manager
U.S. Department of Energy
Weldon Spring Site Remedial Action Project Office
7295 Highway 94 South
St. Charles, Missouri 63303

Information relevant to management of the bulk wastes is located in the Administrative Record and Public Document Room at the Weldon Spring Site Remedial Action Project Office. Four additional information repositories have been established at the following locations:

Cobbs Hall
Lindenwood College
St. Charles, Missouri 63301

Kathryn M. Linneman Branch
St. Charles City/County Library
2323 Elm Street
St. Charles, Missouri 63301

Spencer Creek Branch
St. Charles City/County Library
425 Spencer Road
St. Peters, Missouri 63376

Francis Howell High School
7001 Highway 94 South
St. Charles, Missouri 63303

Information on file at these repositories includes the RI/FS, the proposed plan, and supporting technical reports for the quarry bulk waste remedial action. For additional information, the lead agency can be contacted at the Weldon Spring Site Remedial Action Project Office; the name and address is provided above; the telephone number is (314) 441-8086. The names, addresses, and telephone numbers of support agency personnel who can supply additional information are:

Mr. David E. Bedan
Division of Environmental Quality
Missouri Department of Natural Resources
Post Office Box 176
Jefferson City, Missouri 65102
(314) 751-7869

Mr. Dan Wall
Remedial Project Manager
U.S. Environmental Protection Agency
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726 Minnesota Avenue
Kansas City, Kansas 66101
(913) 236-2856