



## Kenilworth Park Landfill Site

National Capital Parks-East  
Washington, DC



### *Proposed Plan for Cleanup of the Kenilworth Park Landfill Site*

*February 2013*

Dates to remember:

### *Mark Your Calendar*

#### *Public Comment Period:*

March 5, 2013 through May 6, 2013

NPS will accept written comments on the Proposed Plan during the public comment period. Please submit comments to:

Emily Ferguson  
National Capital Parks – East  
1900 Anacostia Drive, S.E.  
Washington, DC 20020  
[kenilworthpark\\_ou1@nps.gov](mailto:kenilworthpark_ou1@nps.gov)

-or-  
Shawn Mulligan  
National Park Service  
1050 Walnut Street,  
Suite 220  
Boulder, CO 80302

#### *Public Meeting:*

NPS will hold one or more public meetings to describe and discuss the Preferred Alternative, as well as the other alternatives evaluated in the Feasibility Study. Oral and written comments as well as questions will be accepted during these meetings. Meeting dates and locations will be posted on the project website, [www.nps.gov/nace/parkmgmt/kpls.htm](http://www.nps.gov/nace/parkmgmt/kpls.htm), and at park headquarters, and notice will be sent by mail or email upon request.

For more information, see the Kenilworth Park Landfill Site Administrative Record at the following locations:

National Capital Parks-East  
1900 Anacostia Avenue, SE  
Washington, DC 20020  
(202) 692-6033

National Park Service  
1050 Walnut Street, Suite 220  
Boulder, CO 80302  
(303) 415-9030

Hours:  
Mon.-Fri. 9 a.m. to 4 p.m.  
Eastern Time Zone  
(except federal holidays)

Hours  
Mon.-Fri. 9 a.m. to 4 p.m.  
Mountain Time Zone  
(except federal holidays)



Kenilworth  
Park  
Landfill Site

**National  
Capital Parks–  
East**

*Proposed Plan for  
Cleanup of the  
Kenilworth Park  
Landfill Site  
February 2013*

## *NPS Announces Proposed Plan*

This Proposed Plan identifies the Preferred Alternative for cleaning up contaminated soils at the Kenilworth Park Landfill Site (Site) pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as Superfund. In addition, this Proposed Plan includes a summary of the other cleanup alternatives evaluated for use at the Site and provides the rationale for selection of the Preferred Alternative.

The Site is located within the 700-acre Kenilworth Park and Aquatic Gardens on the east side of the Anacostia River in Northeast Washington, DC (see Figure 1). Kenilworth Park and Aquatic Gardens is part of Anacostia Park, a unit of the National Park System within National Capital Parks-East and is managed by the National Park Service (NPS).

The Site has been divided into two operable units (OUs): OU1 comprises surface and subsurface soils, including the waste material disposed of within the landfill; OU2 is the shallow groundwater underlying OU1. This Proposed Plan presents the Preferred Alternative for OU1. OU2 will be addressed separately.

NPS is issuing this Proposed Plan as the lead agency for CERCLA activities at the Site and is seeking public comments on the Preferred Alternative as well as the other alternatives evaluated for the Site. NPS will select a final remedy for the Site after reviewing and considering all information submitted during the public comment period. NPS may modify the Preferred Alternative or select another cleanup alternative identified in this Proposed Plan based on new information or public comments. Therefore, the public is encouraged to review and comment on all the alternatives presented in this Proposed Plan and described in greater detail in the Feasibility Study Report issued in April 2012. NPS's final selection of a remedial action for the OU1 portion of the Site will be issued in a Record of Decision following review and consideration of public comments.

The Preferred Alternative for OU1 is Alternative 3b from the Feasibility Study Report. Alternative 3b calls for isolating existing surface soils at the Site that contain contaminant concentrations above cleanup levels by placing 24 inches of clean, low-permeability soil over the existing ground surface.

*NPS is issuing this Proposed Plan as part of its community involvement efforts under CERCLA Section 117(a) and 40 C.F.R. Section 300.430(f)(2) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This Proposed Plan summarizes information that can be found in greater detail in the Site Remedial Investigation Reports and the Feasibility Study, which includes as an appendix the Supplemental Data Collection Report, as well as other documents that may be found in the Site Administrative Record file. Key documents have been posted on the project website at [www.nps.gov/nace/parkmgmt/kpls.htm](http://www.nps.gov/nace/parkmgmt/kpls.htm).*

## *Site Description*

### **BACKGROUND AND HISTORY**

The Site is located within Kenilworth Park and Aquatic Gardens, which is part of the Anacostia Park unit of National Capital Parks-East. The Site comprises two geographic areas divided by the Watts Branch (a tributary of the Anacostia River): Kenilworth Park Landfill North (KPN) and Kenilworth Park Landfill South (KPS). The Site is bounded on the north by Kenilworth Marsh; on the east by residential areas; on the south by a District Transfer Station, the Neval Thomas Elementary School, and Educare of Washington, DC Early Childhood Center; and on the west by the Anacostia River.

The Site was tidal marsh along the east bank of the Anacostia River prior to its development. The surrounding land was farmed into the early 1900s. As the city of Washington grew, the area around the low-lying marshland was filled and developed as a residential area. Later, commercial and light industrial development also took place in the surrounding area. The Anacostia River was dredged historically to make the channel both wider and deeper, and nearly all the wetlands adjoining the river have been filled, although certain areas were dredged to create ornamental lakes, such as Kingman Lake and Kenilworth Aquatic Gardens.

In 1942, the District began operating a dump on the Site, burning trash and burying ash there until 1968, and then operating a sanitary landfill until 1970. During its nearly 30 years of operation, the dump primarily received municipal solid waste and incineration ash, totaling approximately 3.5 million tons of disposed material. In 1970, the landfill ceased operations, was covered with soil, revegetated, and reclaimed for recreational purposes.

KPN is currently used for recreation and includes athletic fields and other recreational facilities. The former Kenilworth-Parkside Community Center (Community Center) was located at the northeastern end of KPN near Anacostia Avenue before it was demolished in 2010 by the District Department of Parks and Recreation. The District has expressed the intention of replacing the Community Center with a more modern facility near its former location. KPS currently is closed to the public but will be developed for active recreational uses after the completion of the CERCLA cleanup.

In late 1998, NPS began conducting environmental investigations at the Site to determine what risks, if any, the former landfill might pose to human health or the environment.

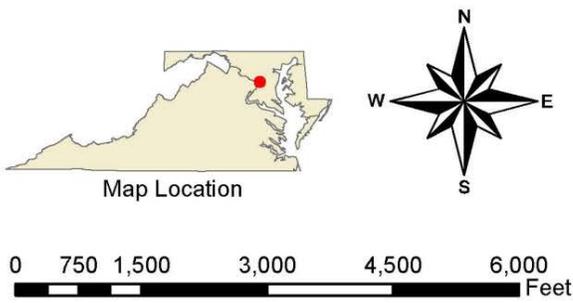


Figure 1  
Site Location Map  
Kenilworth Park Landfill  
Washington, District of Columbia

A number of studies have been conducted since that time by NPS, the federal Agency for Toxic Substances and Disease Registry, and the District of Columbia to determine the nature and extent of potential contamination associated with past waste disposal activities. Various media were investigated, including shallow soil, deep soil/landfill waste material, sediment, groundwater, soil vapor, and indoor air. The most comprehensive of these studies are Remedial Investigations conducted by NPS pursuant to CERCLA. The Remedial Investigation Report for the KPN Landfill was issued in November 2007 and the KPS Landfill Remedial Investigation Report was released in June 2008. The two Remedial Investigations were followed by a supplemental sampling effort, the results of which were reported in the Supplemental Data Collection Report completed in February 2010 and appended to the Feasibility Study Report. All of these documents are available either online or in the Site Administrative Record.

NPS issued the Feasibility Study for the Site in April 2012. The purpose of the Feasibility Study was to develop and evaluate alternatives for cleaning up the Site. The results of the Site investigations and the Feasibility Study are summarized as follows.

### **SITE CONTAMINATION**

The Remedial Investigations and supplemental data collection efforts identified the types, quantities, and locations of contamination at the Site. Contaminants that were identified and evaluated at the Site include metals, pesticides, volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and methane gas. VOCs are organic chemicals that disperse to the air at normal temperatures; PAHs consist of a list of compounds generated primarily from the burning of fuels; and PCBs were widely used as coolants in electrical equipment until they were banned from use in the United States. Methane (or landfill gas) is a colorless, odorless,

flammable gas generated in landfills as a byproduct of the decomposition of organic matter such as yard waste, food waste, and paper.

#### *Surface Soil*

PAHs, PCBs, and lead were measured in some surface soil samples at levels that may pose unacceptable human health risk under certain conditions (see Summary of Site Risks below).

#### *Subsurface Soil and Landfill Materials*

PAHs, PCBs, and lead were measured in some subsurface soil and landfill waste samples. Lead was found in waste material samples at levels that may cause unacceptable risks to construction workers (see Summary of Site Risks below).

#### *Groundwater*

A total of 29 groundwater monitoring wells were installed and sampled through the course of Site investigations. The groundwater at or near the Site is not a source of drinking water and is not expected to be a drinking water source in the future.

Low levels of contaminants were detected in shallow groundwater within buried landfill materials; however, the contamination does not appear to be migrating off-site in quantities sufficient to adversely impact surface water quality or pose unacceptable risks to human health or the environment. NPS will collect additional groundwater data to further evaluate the potential for contaminant migration off-site and determine whether there may be any associated adverse impacts. The new data will be used to support the development, evaluation, and selection of response action for OU2, if warranted.

#### *Surface Water*

Although there were contaminants detected in samples from Watts Branch and the Anacostia River, those contaminants do not appear to be attributable to the Site. Contaminants in surface waters in the vicinity of the Site appear

to come primarily from urban stormwater discharges and tidal influences. The additional groundwater data collection planned for OU2 will be used to further evaluate whether or not Site contaminants are adversely impacting surface water quality.

### *Sediments*

Sediment samples were collected from the Anacostia River, Watts Branch, and stormwater detention ponds on the Site. PAHs, PCBs, and lead were reported in some of the samples; however, there is no apparent trend in the concentrations to indicate that these contaminants originated from the Site or that a migration pathway exists between the Site and adjacent sediments. Similar to surface water, urban stormwater discharges and tidal effects are the predominant factors that influence sediment quality near the Site.

### *Landfill Gas*

Consistent with recommendations by the Agency for Toxic Substances and Disease Registry, supplemental sampling was performed at and near the Site in 2008 and 2009 to assess Site-related methane issues. Results of subsurface soil gas sampling at the Site indicate the presence of methane in certain areas in the landfill waste materials.

Methane was not detected in indoor air in the former Kenilworth-Parkside Community Center, nor was it detected in school yard soils behind Neval Thomas Elementary School.

## **SUMMARY OF SITE RISKS**

As part of the Remedial Investigations, NPS conducted baseline risk assessments to determine the potential current and future risks that contaminants might pose to human health and the environment. The results of the risk assessments are presented below.

### *Human Health Risks*

Human health risk assessments (HHRAs) were conducted to evaluate the risks that might

result from exposure to contaminants by visitors and workers at the Site. HHRAs evaluate the increased risks of developing cancer and other diseases or conditions as a result of exposure to specific contaminants in specific concentrations.

The results of the Site HHRAs indicate that adult and child visitors, as well as construction workers, could come into contact with contaminants in Site soils and sediments in Watts Branch and the stormwater detention ponds. The routes of potential exposure to contaminated soils and sediments by visitors and workers include skin contact, ingestion, and inhalation. Therefore, these were the routes of potential exposure evaluated in the Site HHRAs.

The HHRAs concluded that there is a slightly increased risk of cancer for Site visitors primarily from ingestion of surface soil containing PCBs and PAHs. The HHRAs concluded that the Site does not present an unacceptable risk of cancer to construction workers.

The HHRAs found that Site visitors do not have an increased risk of non-cancer-related illnesses from exposure to Site contaminants. The only group of individuals who might have an increase in non-cancer-related risks due to contact with Site contaminants are construction workers who work more than 90 days in an excavation in a particular area and at a specific depth beneath the surface where high lead concentrations are present in the waste materials.

Methane gas was not detected inside the former Community Center (testing was completed before the building was demolished) indicating no health or safety risks from methane. Similarly, no methane was detected in eight of ten subsurface soil gas samples collected around the perimeter of the Site, including in school yard soils behind Neval Thomas Elementary School. In the two samples where methane was detected, the levels were

less than 5% of the “lower explosive limit,” which means that there are no safety risks from Site-related methane on adjoining properties. Based on these findings, NPS has concluded that methane is not a risk to Park visitors nor is it migrating beyond Site boundaries.

Methane levels beneath the ground surface in several locations within the boundaries of the Site are sufficiently high, however, that there are potential safety risks for construction or utility work that disturbs the waste material in the subsurface.

The HHRAs found no risk to humans from Site-related contaminants in either surface water or groundwater.

### *Ecological Risks*

The ecological risk assessment evaluated potential risks posed by Site contaminants to various ecological receptors, including robins, hawks, voles, and shrews. The results of the ecological risk assessment, combined with additional data collected subsequent to the ecological risk assessment and using more current soil screening levels and guidance, indicate that there is no significant ecological risk posed by Site contaminants. If the additional data collected for OU2 indicate that Site contaminants are migrating to the Anacostia River, these data will be used to evaluate whether or not Site contaminants may pose an unacceptable risk to fish and other receptors in the river.

### *Risk Conclusions*

Based on the HHRAs conducted at the Site, NPS has determined that the Site poses a slightly increased cancer risk to Site visitors who ingest soil containing PAHs or PCBs. The Site also poses an increased non-cancer-related health risk to Site construction and utility workers under specific circumstances in which they might be exposed to high lead concentrations in the landfill waste material. In addition, methane levels within Site boundaries could pose safety risks to workers disturbing waste

material in the subsurface of the Site. Consequently, NPS has concluded that the Preferred Alternative identified in this Proposed Plan is necessary to protect public health, welfare, and the environment from risks associated with releases of hazardous substances into the environment at the Site.

### **REMEDIAL ACTION OBJECTIVES**

Remedial action objectives were formulated in the Feasibility Study to guide the development and evaluation of remedial alternatives. Those objectives are:

1. Prevent human exposure to contaminated soils above acceptable risk levels. More specifically:
  - prevent direct contact (*i.e.*, incidental ingestion, inhalation, and dermal contact) with surface soils contaminated with PCBs, PAHs, and metals above risk-based levels by park visitors and utility and construction workers; and
  - prevent construction and utility worker exposure to lead in surface and subsurface soil above risk-based levels.
2. Prevent exposure to methane by park visitors and utility and construction workers, and prevent exposure to unacceptable levels of methane at on-site or off-site facilities.
3. Prevent erosion and future Site activities that could expose buried landfill waste materials.
4. Eliminate or minimize contaminant-related limitations on the full use and enjoyment of all park resources consistent with NPS mandates.
5. Meet all applicable and relevant and appropriate requirements of federal and District environmental statutes, regulations, and other requirements that pertain to the Site or actions to clean up the Site.

## SUMMARY OF REMEDIAL ALTERNATIVES

The remedial alternatives that were evaluated in the Feasibility Study are summarized below. Alternative 3b, the Preferred Alternative, includes capping contaminated soils with 24 inches of clean, low-permeability soil. This alternative also calls for limited shallow soil excavation and off-site disposal, followed by replacement with the clean soil cap, for those areas where the ground surface needs to remain at current elevations to be compatible with adjacent land uses (e.g., ball fields, tennis courts, sidewalks, etc.). Alternative 3b will meet the remedial action objectives by isolating contaminated soils at the Site and requiring measures to protect workers from potential risks related to exposure to subsurface methane and lead.

Each alternative evaluated in the Feasibility Study is presented below, along with a description of the alternative and its estimated present worth costs (including five-year reviews required for each alternative) based on a 30-year time period and 5% discount rate.

### *Alternative 1: No Action*

*Estimated Present Worth Cost: \$84,000*  
*Estimated Construction Timeframe: None*

The No Action alternative provides a baseline for evaluation of the alternatives and is required to be considered by the NCP. Under this alternative, no measures to address Site contamination would be taken. The only activity assumed for this alternative is a review of Site conditions every five years, as required by CERCLA.

### *Alternative 2: Minor Re-grading and Institutional Controls*

*Estimated Present Worth Cost: \$1 million*  
*Estimated Construction Timeframe: Less than 1 year*

This alternative would include the improvement of on-site surface drainage by filling and re-grading depressions and unevenly settled areas in the existing landfill cover. This would eliminate surface water ponding and help reduce the amount of precipitation getting into the subsurface landfill waste materials. This also would make the Site more useful for recreational activities.

This alternative would also include three years of annual Site perimeter methane monitoring to confirm that there continues to be no off-site methane migration, as documented in previous studies. Institutional controls (i.e., administrative or legal measures) would require health and safety plans to be developed prior to future construction or utility projects to prevent potential risks related to exposure to subsurface methane and lead.

### *Alternatives 3a and 3b: 12-inch Soil Cap (Alternative 3a) and 24-inch Low Permeability Soil Cap (Alternative 3b)*

*Estimated Present Worth Cost:*

*Alternative 3a (12" Cap) – \$11 million*

*Alternative 3b (24" Low Permeability Cap) – \$18 million*

*Estimated Construction Timeframe: 1 to 2 years for Alternative 3a; 2 to 3 years for Alternative 3b*

This alternative would require the placement of a clean soil cap on top of existing soils to prevent human exposure to surface soil contaminants. Within Alternative 3 there are two variations: 1) placement of a 12-inch thick soil cap (Alternative 3a); and 2) placement of a 24-inch thick, low-permeability soil cap (Alternative 3b). In addition to calling for a thicker cap, Alternative 3b also would require the cap to be constructed of compacted soil to reduce the cap's permeability, thereby minimizing infiltration of precipitation into the underlying waste materials. The top 6-inch layer of either cap would be topsoil to facilitate revegetation and the reestablishment of recreational fields.

Prior to the installation of the soil cap, low areas would be regraded and filled as described in Alternative 2. Alternative 3 also includes the shallow excavation of soil around the existing developed features of the former Community Center (buildings, walkways, paved parking lots, tennis courts, running track, catch basins, etc.) to accommodate the placement of the soil cap without raising the ground surface elevation adjacent to those features.

Alternatives 3a and 3b both include Site perimeter methane monitoring before, during, and after soil cap placement to: 1) confirm the continued lack of methane migration documented in previous studies; and 2) document that the remedial action does not alter methane migration patterns.

Institutional controls (*i.e.*, administrative or legal measures) would require health and safety plans to be developed prior to future construction or utility projects to prevent potential risks related to exposure to subsurface methane and lead.

#### *Alternative 4: Removal of All Accessible Waste Material and Existing Cover Soils with Off-Site Disposal*

*Present Worth Cost: More than \$400 million  
Estimated Construction Timeframe: 5 to 8 years  
(depending on the availability of off-site facilities to receive the waste)*

This alternative would require the complete excavation of all landfill waste materials and previously placed cover soils that are accessible (*i.e.*, not located under existing developed areas) and re-establishment of the original

grades and wetland habitat that existed before the development of the landfill. All excavated materials would be disposed at an appropriate permitted off-site landfill. This alternative would restore much of the Site to its original natural condition as tidal marsh.

### EVALUATION OF THE ALTERNATIVES

Under CERCLA and its implementing regulations, nine criteria are used to evaluate remedial alternatives developed in the Feasibility Study, both individually and against one another, to select a remedial action. These criteria are summarized in the box below. In this section of the Proposed Plan, the remedial alternatives presented above are evaluated using the first seven of the nine criteria; the final two criteria will be considered after NPS receives input from the public and the District of Columbia on the Proposed Plan.

The first two criteria, “Overall Protection of Human Health and the Environment” and “Compliance with ARARs,” are considered “threshold criteria.” An alternative must satisfy these requirements to be eligible for selection as the Preferred Alternative.

The next five criteria are considered “primary balancing criteria” which are used to compare alternatives. The last two criteria, “State (or, in this case, District) Acceptance” and “Community Acceptance,” are considered “modifying criteria” and are evaluated following input from the District and the community on the Proposed Plan. A more detailed evaluation of the remedial alternatives considered for the Site using these criteria can be found in the Feasibility Study Report.

## NINE EVALUATION CRITERIA FOR SUPERFUND REMEDIAL ALTERNATIVES

### Threshold Criteria:

1. **Overall Protection of Human Health and the Environment** determines whether the alternative eliminates, reduces, or controls threats to human health and the environment.
2. **Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)** evaluates whether the alternative meets the requirements of federal and state (or, in this case, District) environmental statutes, regulations, and other requirements identified by the lead agency as applicable, or relevant and appropriate, to the circumstances at the Site, or whether a waiver of such requirements is justified.

### Primary Balancing Criteria:

3. **Long-Term Effectiveness and Permanence** considers the ability of the alternative to maintain protection of human health and the environment over time.
4. **Reduction of Toxicity, Mobility, or Volume of Contaminants through Treatment** evaluates the alternative's use of treatment to reduce the harmful effects of principal contaminants, their ability to move in the environment, and the amount of contamination present.
5. **Short-Term Effectiveness** considers the length of time needed to implement the alternative and the risks the alternative poses to workers, residents, and the environment during implementation.
6. **Implementability** considers the technical and administrative feasibility of implementing the alternative, including factors such as the relative availability of goods and services.
7. **Cost** includes estimated capital and annual operations and maintenance costs, as well as present worth cost. Present worth cost is the total cost of an alternative over time in terms of today's dollar value. Cost estimates are expected to be accurate within a range of +50 to -30 percent.

### Modifying Criteria:

8. **State (District) Acceptance** considers whether the District concurs with NPS's selection of the Preferred Alternative, as described in the Proposed Plan.
9. **Community Acceptance** considers whether the local community supports selection of the Preferred Alternative. Comments received on the Proposed Plan are an important indicator of community acceptance.

The results of the evaluation of alternatives are summarized in Table 1. The No Action Alternative (Alternative 1) does not meet either of the threshold criteria; therefore, it is not eligible for selection as the Preferred Alternative. Similarly, Alternative 2 (minor re-grading) does not meet either of the threshold criteria; therefore, it also is not eligible for selection as the Preferred Alternative.

**Table 1: Comparison of Cleanup Alternatives**

Threshold and Primary Balancing Criteria	No Action (Alternative 1)	Minor Re-Grading (Alternative 2)	12-inch Soil Cap (Alternative 3a)	24-inch Low Permeability Soil Cap (Alternative 3b) <sup>1</sup>	Complete Removal (Alternative 4)
Protects Human Health and the Environment	X	X	✓	✓	✓
Complies with Federal and District ARARs	X	X	X	✓	✓
Provides Long-Term Protection	X	X	✓	✓	✓
Reduces Mobility, Toxicity and Volume through Treatment	X	X	X	X	X
Short-Term Effectiveness	X	X	✓	✓	X
Implementable	✓	✓	✓	✓	X
Cost (present worth) <sup>2</sup>	\$0.1 Million	\$1 Million	\$11 Million	\$18 Million	>\$400 Million
<b>Other Considerations:</b>					
Time to Reach Cleanup Goal	Unknown	Less than 1 Year to complete the remediation, however risk goals would not be met	1-2 Years	2-3 Years	5-8 Years
Key: X Does not meet criterion      ✓ Meets or exceeds criterion					
<sup>1</sup> NPS's preferred alternative					
<sup>2</sup> Cost estimates are from the FS and are within the limits of accuracy of FS-level cost estimating consistent with RI/FS Guidance (+50%/-30%)					

The following is a brief summary of how Alternatives 2 through 4 compare in terms of meeting the first seven evaluation criteria. Although Alternative 2 is not eligible for selection as the Preferred Alternative, it is included in the discussion below as a comparison to Alternatives 3a and 3b, and because the re-grading components of Alternative 2 are included in Alternatives 3a and 3b.

### 1. Overall Protection of Human Health and the Environment

Alternative 2 provides a limited degree of overall protectiveness (*e.g.*, construction worker exposure to subsurface wastes would be controlled through institutional controls); however, risks of visitor and construction worker exposure to surface soil would not be reduced.

Alternatives 3a, 3b, and 4 provide a high degree of overall protectiveness of human health.

### 2. Compliance with ARARs

Alternative 2 does not comply with all ARARs. Alternative 3a complies with most ARARs, however it does not meet the relevant and appropriate Resource Conservation and Recovery Act (RCRA) Subtitle D requirements for closure and post-closure care of municipal landfills (*e.g.*, Subtitle D requires a 24-inch cap). Alternative 3b complies with all Site ARARs, including the relevant and appropriate RCRA Subtitle D requirements for closure and post-closure care. Alternative 4 complies with all Site ARARs by removing all accessible waste material from the Site.

### 3. Long-Term Effectiveness and Permanence

Alternatives 3a and 3b will be effective over the long term and relatively permanent. They include provisions to ensure maintenance and enforcement of institutional controls to ensure long-term integrity of the soil cap. The 24-inch variation (Alternative 3b) has a higher degree of long-term effectiveness and

permanence than the 12-inch variation (Alternative 3a).

Alternative 2 has limited long-term effectiveness. Alternative 4 provides the most long-term effectiveness and permanence.

### 4. Reduction of Toxicity, Mobility, or Volume through Treatment

None of the alternatives includes treatment and therefore none reduces toxicity, mobility, or volume of contaminants through treatment.

### 5. Short-Term Effectiveness

This criterion primarily requires consideration of the short-term impacts caused by the remedial alternative and the risks posed during implementation. Short-term impacts associated with Alternatives 2, 3a, 3b, and 4 involve the use and movement of heavy construction equipment, including moving soils on- and off-site. Measures will be implemented to protect against short-term risks, threats, or adverse impacts to the community, workers, or the environment. For example, portions of the Site will be closed to public use at various times during construction activities, dust suppression measures will be taken, and temporary erosion control measures will be implemented to minimize off-site transport of sediment during rain storms and snowmelt (including into the Anacostia River).

Since Alternative 2 is much less extensive than Alternatives 3a, 3b, or 4 its short-term impacts would be much more limited. Alternative 3b would take longer to implement than 3a so protective controls

would be required for a longer period. Alternative 4 has the longest construction duration and therefore the greatest associated impacts to the community.

#### 6. Implementability

This criterion requires consideration of the technical and administrative feasibility of implementing each alternative, including the availability of services and materials. Because Alternatives 2, 3a, and 3b essentially involve common construction practices, there are very few implementability issues associated with these alternatives. Alternative 4 would require multiple years of heavy equipment to excavate and transport for off-site disposal a significant volume of waste material. Implementability would be limited by, among other considerations, the availability of a properly licensed landfill capable of receiving the large volume and type of material.

#### 7. Cost

Alternative 2 has a significantly lower cost than Alternatives 3a and 3b. The cost of Alternative 3a (12-inch cap) is about 60 percent of the cost of Alternative 3b (24-inch cap). The cost estimates for all of the remedial alternatives evaluated in the Feasibility Study are shown in Table 1. Alternative 4 has the highest cost by orders of magnitude.

#### 8. State (District) Acceptance

NPS will seek the District's comments and concurrence on the Preferred Alternative.

#### 9. Community Acceptance

Community acceptance of the Preferred Alternative will be evaluated following the close of the public comment period on the Proposed Plan, and will be described in the Record of Decision for the Site.

### SUMMARY OF THE PREFERRED ALTERNATIVE

The Preferred Alternative for addressing Site risks and achieving Site remedial action objectives is Alternative 3b – placement of a 24-inch low permeability soil cap and requiring measures to protect workers from potential risks related to exposure to subsurface methane and lead. This alternative was selected over the other alternatives because it maximizes long-term protectiveness of human health and the environment, complies with all ARARs, provides an acceptable degree of short-term effectiveness, is fully implementable, and can be implemented in a cost-effective manner. In addition, it is the alternative most consistent with the land-management objectives and goals of the National Park Service. It will allow the Site to be fully utilized for all appropriate park purposes and addresses the potential risks posed by the presence of contamination on NPS lands.

Based on the information currently available, NPS believes the Preferred Alternative meets the threshold criteria, provides the best balance of tradeoffs among the alternatives with respect to the primary balancing criteria, and satisfies the statutory requirements of CERCLA.

## COMMUNITY PARTICIPATION

*Due to the volume of information available for review and the considerable public interest in the Site, NPS is extending the public review and comment period from the minimum 30-day period required by the NCP to 60 days. Additional time may be requested by the public.*

NPS encourages your participation in the remedy selection process and will fully consider public comments received during the public comment period before selecting a remedial action for the Site. Substantive comments received during the public comment period will be addressed in a Responsiveness Summary, which will be part of the Record of Decision documenting the final selection of the Site remedial action.

Anyone interested in learning more about the Site and the basis upon which NPS has identified the Preferred Alternative presented in this Proposed Plan is encouraged to review the Site Administrative Record file, which contains the detailed information that forms the basis for the selection of the Site remedial action. The Administrative Record file is available for public review at the following locations.

National Capital Parks-East  
1900 Anacostia Avenue, SE  
Washington, DC 20020  
(202) 692-6033

National Park Service  
1050 Walnut Street, Suite 220  
Boulder, CO 80302  
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