Slurry walls are used in conjunction with caps for the Complex Trenches, Shell Trenches, Hex Pit, and Buried M-1 Pits Subgroups to augment the containment of these sites. The groundwater inside the contained area is pumped and treated if necessary to maintain lowered water table elevations.

Soil posing risk to biota within the central six sections of RMA is generally excavated and landfilled as discussed above. No action is undertaken for soil that potentially poses risks to biota that is located outside of the capped area including Upper Derby Lake and the Surficial Soil, Ditches/Drainage Areas, and Agent Storage Medium Groups. Although a residual risk to biota exists outside the capped area, the magnitude of the residual risk is comparatively low (see Section 6.2.4.3) and the short-term destruction of habitat is minimized. The soil in these areas is sampled periodically. No additional action other than monitoring is conducted for the aquatic lake sediments. Ongoing monitoring of biota in these areas will be conducted in support of design refinement/design characterization.

The components of this alternative are summarized in Table 7.4-1. The total estimated cost for this alternative (in 1995 dollars) is $383 million (present worth cost of $276 million). A breakdown of capital and O&M costs for each component of this alternative is presented in Table 7.4-2. This alternative requires approximately 16 years for implementation.

7.4.3.3 Alternative 3 – Landfill

Alternative 3 involves the containment of 3.4 million BCY of contaminated soil in an on-post hazardous waste landfill. Approximately 100 acres of principal threat or human health exceedance soil areas are contained with a multilayer cap instead of being landfilled, and 300 acres are capped (multilayer cap), after removing the human health exceedance volume and landfilling, to address residual contamination (Figure 7.4-3).

Contaminated soil from nearly all of the sites (3.4 million BCY total) is excavated and landfilled. Chemical sewers and associated contaminated soil are excavated and placed in the on-post hazardous waste landfill. The 87,000 BCY of human health exceedance volume from the Surficial Soil Medium Group, soil with human health exceedances in the Agent Storage Medium Group (2,900 BCY), and human health exceedances and soil that may pose a risk to biota from the Lake Sediments (including portions of Upper Derby Lake) and Ditches/Drainage Areas Medium Groups (58,000 BCY) are also excavated and landfilled. Any excavated agent-contaminated soil identified during monitoring is treated by caustic washing and then landfilled. The excavation of the Former Basin F, Buried M-1 Pits, Shell Trenches, and Hex Pit Subgroups requires the use of **vapor-** and **odor-suppression measures** such as foam, liners, or a transportable structure.

The sanitary sewer manholes are plugged. Any HE-filled (high explosive) and agent-filled UXO identified through geophysical surveys or other screening methods are excavated, packaged, and transported off post to an existing

Army facility for detonation and disposal (unless the UXO is unstable and must be detonated on post) or other demilitarization process.

The Basin F Wastepile and the Complex Trenches Subgroups are left in place and capped. A composite cap is constructed over the existing cover for the Basin F Wastepile. Following the excavation and landfilling of human health exceedances, 390 acres in Section 36, South Plants Central Processing Area, and the Former Basin F are capped (multilayer caps). Approximately 10.1 million BCY of borrow materials are required as backfill and gradefill to achieve the design grades for capping, and an additional 3.86 million BCY of borrow are required for construction of the cap.

Slurry walls are used in conjunction with the caps for the Complex Trenches Subgroup to augment the containment of this site. The groundwater inside the contained area is pumped and treated.

Soil posing risk to biota within the central six sections of RMA is generally excavated and landfilled as discussed above. No action is undertaken for soil that potentially poses risks to biota in the Surficial Soil Medium Group, but the soil in this area is sampled periodically. Although a residual risk to biota exists in this medium group, the magnitude of the residual risk is comparatively low (see Section 6.2.4.3) and the short-term destruction of habitat is minimized. No action other than monitoring is conducted for the aquatic lake sediments. Ongoing monitoring of the biota in these areas will be conducted in support of design refinement/design characterization.

The components of this alternative are summarized in Table 7.4-1. The total estimated cost for this alternative (in 1995 dollars) is $576 million (present worth cost of $384 million). A breakdown of capital and O&M costs for each component of this alternative is presented in Table 7.4-2. This alternative requires approximately 22 years for implementation.

7.4.3.4 Alternative 4 – Consolidation/Caps/Treatment/Landfill

Alternative 4 involves **consolidation** of 1.5 million BCY of soil with low levels of contamination into Basin A, Former Basin F, and the South Plants Central Processing Area; capping or covering of 1,100 acres of contaminated soil; landfilling of 1.7 million BCY of soil and debris; and treatment of 217,000 BCY of soil by solidification/ stabilization (Figure 7.4-4). This alternative also includes a contingent soil volume of 150,000 BCY that may be landfilled. The locations of the contingent volume will be based on visual field observations such as soil stains, presence of barrels, or newly discovered evidence of contamination. In addition, 14 samples from North Plants, Toxic Storage Yards, Lake Sediments, Sand Creek Lateral, and Burial Trenches Medium Groups and up to 1,000 additional confirmatory samples may be used to identify the contingent soil volume requiring landfilling.

Approximately 190,000 BCY of principal threat soil in the Former Basin F are treated by in situ solidification/stabilization, and 26,000 BCY of principal threat and human health exceedance soil from the Buried M-1 Pits are excavated, solidified, and placed in the on-post landfill. Excavation of the Buried M-1 Pits will be conducted using vapor- and odor-suppression measures.

Approximately 1,000 BCY of principal threat material from the Hex Pit are treated using an innovative thermal technology. The remaining 2,300 BCY are excavated and disposed in the on-post hazardous waste landfill. Remediation activities will be conducted using vapor- and odor-suppression measures as required. Treatability testing will be performed during remedial design to verify the effectiveness of the innovative thermal process and establish operating parameters for the design of the full-scale operation. The innovative thermal technology must meet the treatability study technology evaluation criteria as described in the dispute resolution agreement (PMRMA 1996). Treatment will be revised to a solidification/stabilization technology if all evaluation criteria for the innovative thermal technology are not met. Treatability testing for solidification will be performed to verify the effectiveness of the solidification process and determine appropriate solidification/stabilization agents. Treatability testing and technology evaluation will be conducted in accordance with EPA guidance (OSWER-EPA 1989a) and EPA's "Guide for Conducting Treatability Studies Under CERCLA" (1992).

The approximately 650,000 BCY of highly contaminated soil from the Basin F Wastepile and the Section 36 Lime Basins Subgroups is excavated (using vapor- and odor-suppression measures) and disposed in triple-lined cells within the on-post hazardous waste landfill. Soil from the Basin F Wastepile not passing the **EPA paint filter test** (SW-846, Method 9095) will be reduced to acceptable moisture-content levels by using a dryer in an enclosed structure. Any contaminants released from the soil during drying will be captured and treated.

Approximately 1 million BCY of human health exceedance soil from other sites throughout RMA, as well as debris from UXO clearance operations, are landfilled under this alternative. Any excavated agent-contaminated soil identified during monitoring is treated by caustic washing and then landfilled. In addition, any identified HE-filled and agent-filled UXO are excavated, packaged, and transported off post to an existing Army facility for detonation and disposal (unless the UXO is unstable and must be detonated on post) or other demilitarization process.

Slurry walls are used in conjunction with the caps for the Shell Trenches and Complex Trenches Subgroups to augment the containment of these sites. For the purposes of conceptual design and costing during the FS, it was assumed that the groundwater inside the contained area is pumped and treated at the Basin A Neck treatment system (this assumption will be reevaluated during the remedial design). The Shell Trenches and Complex Trenches caps are designed to be **RCRA-equivalent caps**. The complex trenches cap includes a 6-inch-thick formed concrete layer. The sanitary sewer manholes and the chemical sewers located in the South Plants Central Processing Area

Table 7.1-5 Soil Exceedance Volumes by Medium Group[1,2]

Medium Group/Subgroup	Human Health Exceedance Volume[3] (BCY)	Principal Threat Exceedance Volume (BCY)	Excess Biota Volume; 0-1 ft (BCY)	Expected Agent Volume (BCY)	Expected UXO Volume (BCY)	UXO Debris Volume[4] (BCY)
Munitions Testing	0	0	0		450	89,000
North Plants	220	0	17,000	61		
Toxic Storage Yards	2,700	0	0	220		
Lake Sediments	16,000	0	19,000			
Ditches/Drainage	0	0	23,000			
Surficial Soil	87,000	1,500	460,000			
Basin A	160,000	32,000	88,000	710	94	47,000
Basin F Wastepile	600,000	600,000	0			
Secondary Basins	32,000	0	140,000			
Former Basin F	740,000	190,000	0			
Sanitary/Process Water Sewers	0	0	0			
Chemical Sewers	86,000	46,000	0	69		
Complex Trenches	400,000	400,000	0	1,300	1,300	130,000
Shell Trenches	100,000	100,000	0			
Hex Pit	3,300	3,300	0			
Sanitary Landfills[5]	14,000	0	23,000			
Section 36 Lime Basins	54,000	9,000	0	91		
Buried M-1 Pits	26,000	22,000	0	29		
S.P. Central Processing[6]	110,000	38,000	27,000	160		
S.P. Ditches	33,000	3,400	22,000			
S.P. Balance of Areas	130,000	11,000	510,000	160	50	5,000
Buried Sediments	16,000	0	0			
Sand Creek Lateral	15,000	0	90,000			
Section 36 Balance of Areas	64,000	0	140,000	300	160	78,000
Burial Trenches	28,000	0	0	12	550	57,000
Total	2,700,000	1,500,000	1,600,000	3,100	2,600	410,000

1 All volumes presented to two significant figures. Detailed volume calculations are available in the administrative record (Foster Wheeler 1996).

2 Individual volumes presented here may differ from those presented in the Detailed Analysis of Alternatives report (Volume IV, Appendix A) due to adjustments for overlap between exceedance categories. The total volume listed for each medium group remains consistent with those presented in the Detailed Analysis of Alternatives report.

3 The human health exceedance volume includes the principal threat exceedance volume.

4 The UXO debris volume includes human health exceedance volume as follows: Basin A, 16,500 BCY; Complex Trenches, 43,000 BCY; Section 36 Balance of Areas, 15,000 BCY; and Burial Trenches, 4,000 BCY.

5 This medium group also contains 380,000 BCY of nonhazardous soil and debris.

6 Exceedance volumes are based on a 5-ft depth cutoff due to difficulties in deeper excavation at this site. Additional exceedance volumes for the 5-ft to 10-ft depth interval are 32,000 BCY human health volume, including 17,000 BCY principal threat volume.

9.2 Structures Alternative 2 – Landfill/Consolidate

Structures Alternative 2 is the selected alternative for the structures medium. This alternative applies to all No Future Use structures, i.e., structures in the Other Contamination History, Significant Contamination History, and Agent History Groups. Under this alternative, the following activities will occur:

- All No Future Use structures will be demolished.
- Agent History structures will be monitored for the presence of Army chemical agent, and treated by caustic washing as necessary prior to disposal.
- Both Agent History and Significant Contamination History Group structural debris will be disposed in the on-site hazardous waste landfill.
- Other Contamination History Group structural debris will be used as grade fill in Basin A, which will subsequently be covered as part of the soil remediation.
- Structural assessments and review of ACM and PCB contamination status and disposition of ACM or PCB-contaminated materials will be performed as described in Section 7.3.3.
- Process-related equipment not remediated as part of the Chemical Process-Related Activities IRA will be disposed in the on-post hazardous waste landfill.

An inventory of structures in each medium group is presented in Tables 5.4-6, 5.4-7, 5.4-8, and 5.4-9. Refinement of the Future Use structures inventory will be completed during remedial design. Most of the demolition at RMA will consist of dismantling with standard dust-suppression measures Remediation goals and standards have been identified for each medium group (see Table 9.5-1). The Other Contamination History Group structural debris is disposed by consolidation in Basin A. This procedure includes transporting the debris to the consolidation area and using it as a portion of the gradefill required by the soil remediation. When the consolidation area has been regraded, it will be covered as part of the soil remediation. Significant Contamination History Group and Agent Contamination History Group structural debris is disposed in the on-post hazardous waste landfill. The slabs and foundations of structures located in the South Plants Central Processing Area within principal threat or human health soil exceedance excavation areas are removed to a depth of 5 ft. In most cases, floor slabs and foundations for the Other Contamination History and Significant Contamination History Groups are left behind after demolition (unless contaminated soil is to be excavated from beneath the slabs or foundations). Floor slabs are broken to prevent water ponding. Additional detail on this alternative is provided in the Detailed Analysis of Alternatives Report.

9.3 Soil Alternative 4 – Consolidation/Caps/Treatment/Landfill

The selected soil alternative is Alternative 4. This alternative includes consolidation of 1.5 million BCY of soil with low levels of contamination into Basins A and F and the South Plants Central Processing Area; capping or soil cover of contaminated soil in the Basins, South Plants, North Plants, and Section 36 sites (including Shell and Complex Trenches); treatment (primarily by in situ solidification/stabilization) of 217,000 BCY of

principal threat soil; and on-post landfilling of 1.7 million cubic yards of soil and debris, including the Basin F Wastepile. The specific components of this alternative are listed below and are summarized in Table 9.3-1:

- On-Post Hazardous Waste Landfill – Construction of a RCRA- and TSCA-compliant hazardous waste landfill on post.
- Former Basin F – Treatment of approximately 190,000 BCY of principal threat soil in the Former Basin F to a depth of 10 ft (measured from below the base of the overburden) using in situ solidification/stabilization to reduce the mobility of the contaminants and minimize further contamination of groundwater. The mixture of solidification agents will be determined during remedial design by treatability testing. This treatability testing will be used to verify the effectiveness of the treatment process and establish operating parameters for the design of the full-scale operation. The entire site is capped (including the Basin F Wastepile footprint) with a RCRA-equivalent cap that includes a biota barrier.
- Basin F Wastepile – Excavation of approximately 600,000 BCY of principal threat soil and liner materials from the wastepile and containment in dedicated triple-lined landfill cells at the on-post hazardous waste landfill facility. Excavation is conducted using vapor- and odor-suppression measures as necessary. If the wastepile soil fails EPA's paint filter test, the moisture content of the soil will be reduced to acceptable levels by using a dryer in an enclosed structure. Any volatile organics (and possibly some semivolatile organics) released from the soil during the drying process are captured and treated; however, the main objective of this process is drying. Prior to excavation of the wastepile, overburden from the existing cover is removed and set aside. The excavation area is backfilled with on-post borrow material and stockpiled overburden.
- Basin A – Construction of a soil cover consisting of a 6-inch-thick layer of concrete and a 4-ft-thick soil/vegetation layer over the principal threat and human health exceedance soil and soil posing a potential risk to biota, and consolidation of debris and soil posing a potential risk to biota and structural debris from other sites. No RCRA-listed or RCRA-characteristic waste from outside the AOC will be placed in Basin A. Any UXO encountered will be removed and transported off post for detonation (unless the UXO is unstable and must be detonated on post) or other demilitarization process.
- South Plants Central Processing Area – Excavation and landfill of principal threat and human health exceedance soil to a depth of 5 ft and caustic washing and landfill of any agent-contaminated soil found during monitoring. Backfill excavation and placement of a soil cover consisting of a 1-ft-thick biota barrier and a 4-ft-thick soil/vegetation layer over the entire site to contain the remaining human health exceedance soil and soil posing a potential risk to biota. Soil posing a potential risk to biota from other portions of South Plants may be used as backfill and/or gradefill prior to placement of the soil cover.
- South Plants Ditches – Excavation and landfill of principal threat and human health exceedance soil. Excavation of soil posing a potential risk to biota and consolidation under the South Plants Central Processing Area soil cover. Backfill excavated area with on-post borrow material. These sites are contained under the South Plants Balance of Areas soil cover.
- South Plants Balance of Areas – Excavation (maximum depth of 10 ft) and landfill of principal threat and human health exceedance soil and caustic washing and landfill of any agent-contaminated soil found during monitoring. Any UXO encountered will be excavated and transported off post for detonation (unless the UXO is unstable and must be detonated on post) or other demilitarization process. Excavation of soil posing a potential risk to biota and consolidation as backfill and/or gradefill under the South Plants Central Processing Area soil cover and/or for use as backfill for excavated areas within this medium group. The former human health exceedance area is covered with a 3-ft-thick soil cover and the former potential risk to biota area is covered with a 1-ft-thick soil cover. Prior to placing this cover, two composite samples per acre will be collected to verify that the soil under the 1-ft-thick soil cover does not exceed human health or principal threat criteria. If the residual soil is found to exceed these levels, the 3-ft-thick cover will be extended over these areas or the

Table 9.3-1 Summary of the Selected Soil Remedy

Medium Groups/Subgroups	Remedial Action
Munitions Testing	Munitions screening; off-post detonation of UXO (450 BCY); landfill debris and soil above TCLP (89,000 BCY).
North Plants	Landfill human health exceedance (220 BCY); agent monitoring during excavation; caustic washing; construct soil cover over biota risk area and processing area footprint (160,000 SY).
Toxic Storage Yards	Landfill human health exceedance (2,700 BCY); utilize New Toxic Storage Yard for borrow area; agent monitoring during site excavation and preparation; caustic washing.
Lake Sediments	Landfill human health exceedances (16,000 BCY); consolidate soil posing risk to biota from Upper Derby Lake (19,000 BCY) into Basin A or South Plants; deferral to USFWS for aquatic sediment.
Surficial Soil	Landfill human health exceedances (87,000 BCY); consolidate soil posing risk to biota in Basin A/Former Basin F/South Plants (460,000 BCY).
Ditches/Drainage Areas	Consolidate soil posing risk to biota in Basin A (23,000 BCY).
Basin A	Construct soil cover with formed concrete layer over principal threat and human health exceedances and soil posing risk to biota (670,000 SY); consolidate debris and soil posing risk to biota (790,000 BCY) and structural debris (160,000 BCY) from other sites.
Basin F Wastepile	Landfill entire wastepile (principal threat exceedance) (600,000 BCY) in triple-lined cell (with vapor controls) after drying saturated materials.
Former Basin F	In situ solidification/stabilization of principal threat volume (190,000 BCY); construct RCRA-equivalent cap over entire site (including Basin F Wastepile footprint) (525,000 SY).
Secondary Basins	Landfill human health exceedances (32,000 BCY); construct soil cover over soil posing risk to biota (520,000 SY).
Sanitary/Process Water Sewers	Plug remaining manholes.
Chemical Sewers	Plug sewer lines in South Plants Central Processing Area and Complex Trenches; landfill remaining principal threat and human health exceedances (64,000 BCY).
Complex Trenches	Construct RCRA-equivalent cap with formed concrete layer over principal threat and human health exceedances and soil posing risk to biota (390,000 SY) and install a slurry wall around disposal trenches.
Shell Trenches	Modify existing cover to be a RCRA-equivalent cap (32,000 SY) and modify existing slurry wall around trenches.
Hex Pit	Treatment of buried material (1,000 BCY) using an innovative thermal technology (with vapor controls); landfill remaining volume (2,300 BCY). Solidification/stabilization will become the selected remedy if all evaluation criteria for the innovative thermal technology are not met.
Sanitary Landfills	Landfill human health exceedances (14,000 BCY); consolidate

Table 9.3-1 Summary of the Selected Soil Remedy

Medium Groups/Subgroups	Remedial Action
	debris and soil posing risk to biota in Basin A (410,000 BCY).
Section 36 Lime Basins	Landfill principal threat and human health exceedances in triple-lined cell (54,000 BCY); repair existing soil cover.[1]
Buried M-1 Pits	Solidification of principal threat and human health exceedances (26,000 BCY) and landfill (with vapor controls).[1]
South Plants Central Processing Area	Landfill principal threat and human health exceedances (110,000 BCY); construct soil cover over entire site including soil posing risk to biota (220,000 SY); consolidate soil posing risk to biota from other sites (370,000 BCY).[1]
South Plants Ditches	Landfill principal threat and human health exceedances (33,000 BCY); consolidate soil posing risk to biota into excavated areas or South Plants Central Processing Area (22,000 BCY); construct soil cover over entire site (120,000 SY).
South Plants Balance of Areas	Landfill principal threat and human health exceedances (130,000 BCY); consolidate soil posing risk to biota into excavated areas or South Plants Central Processing Area (510,000 BCY); construct soil cover over entire site (1,700,000 SY).[1,2]
Buried Sediments	Landfill human health exceedances (16,000 BCY).
Sand Creek Lateral	Landfill human health exceedances (15,000 BCY); consolidate soil posing risk to biota into Basin A (90,000 BCY).
Section 36 Balance of Areas	Landfill human health exceedances and debris (140,000 BCY); consolidate soil posing risk to biota into Basin A (140,000 BCY); construct soil cover over entire site (850,000 SY).[1,2]
Burial Trenches	Landfill human health exceedances and debris (85,000 BCY).[1,2]
Contingent Volume	Landfill identified volume (up to 150,000 BCY).

1 Agent monitoring during excavation and treatment of any soil containing agent by caustic solution washing.
2 Munitions screening prior to excavation, off-post detonation of any munitions encountered, and landfill munitions debris/soil above TCLP.

Table 9.3-2 Final Disposition of Soil Exceedance Volumes[1]

Medium Group/Subgroup	RCRA Landfill[2]	Enhanced RCRA Landfill[2]	Consolidation in Basin A	Consolidation in Basin F	Consolidation within South Plants	Treatment[3]	Caustic Washing and Landfill	UXO Demilitarization Off Post
Munitions Testing	89,000							450
North Plants	220						61	
Toxic Storage Yards	2,700						220	
Lake Sediments	16,000		19,000					
Ditches/Drainage Areas			23,000					
Surficial Soil	87,000		109,000	351,000				
Basin A								5
Basin F Wastepile		600,000						
Secondary Basins	32,000							
Former Basin F[3]						190,000		
Sanitary/Process Water Sewers								
Chemical Sewers	61,000						20	
Complex Trenches								130
Shell Trenches								
Hex Pit[3]	2,300					1,000		
Sanitary Landfills	14,000		406,000					
Section 36 Lime Basins		54,000					91	
Buried M-1 Pits[3]						26,000	29	
South Plants Central Processing Area	110,000						160	
South Plants Ditches	33,000				22,000			
South Plants Balance of Areas	135,000				510,000		160	50
Buried Sediments	16,000							
Sand Creek Lateral	15,000		90,000					
Section 36 Balance of Areas	142,000		140,000				300	160
Burial Trenches	85,000							550
Totals	840,000	654,000	787,000	351,000	532,000	217,000	1,040	1,340

1 All volumes given in bank cubic yards. The soil volumes referenced in this table are summarized in Table 7.1-5, and are based on the TECHBASE software and other calculations. All soil volumes referenced in this table are subject to the addition of "contingent volumes" based on findings during implementation of remedial activities.

2 Landfill volume does not include contingent soil volume (up to 150,000 BCY), structures demolition debris, treated material volume, or landfill daily cover.

3 Treatment detailed as follows: Former Basin F, in situ solidifcation; Hex Pit, innovative thermal; Buried M-1 Pits, solidification and landfill.

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Table 9.3-3 Untreated Soil Exceedance Volumes Remaining In Place[1,2]

Medium Group/Subgroup	Human Health	Principal Threat	Biota	Agent	UXO	UXO Debris	Consolidated Soil from Other Sites	Total Volume Remaining in Place
Munitions Testing								
North Plants			17,000					17,000
Toxic Storage Yards								
Lake Sediments								
Ditches/Drainage Areas								
Surficial Soil								
Basin A	160,000	32,000	88,000	710	89	47000[3]	787,000	1,080,000
Basin F Wastepile								
Secondary Basins			140,000					140,000
Former Basin F	550,000						351,000	901,000
Sanitary/Process Water Sewers								
Chemical Sewers	24,000	11,500		49				24,000
Complex Trenches	400,000	400,000		1,300	1,170	130,000[4]		532,000
Shell Trenches	100,000	100,000						100,000
Hex Pit								
Sanitary Landfills								
Section 36 Lime Basins								
Buried M-1 Pits								
South Plants Central Processing Area	32,000[5]	17,000[5]	27,000				370,000	429,000
South Plants Ditches								
South Plants Balance of Areas							162,000	162,000
Buried Sediments								
Sand Creek Lateral								
Section 36 Balance of Areas								
Burial Trenches				12				
Totals	1,270,000	561,000	272,000	2,070	1,260	177,000	1,670,000	3,390,000

1 All volumes given in bank cubic yards.

2 All volumes remaining in place are contained beneath soil covers or caps.

3 Debris volume remaining includes 17,000 BCY human health exceedance volume and 30,000 BCY of biota risk volume.

4 Debris volume remaining includes 43,000 BCY human health exceedance volume and 87,000 BCY of biota risk volume.

5 Remaining volume at a depth greater than 5 ft.

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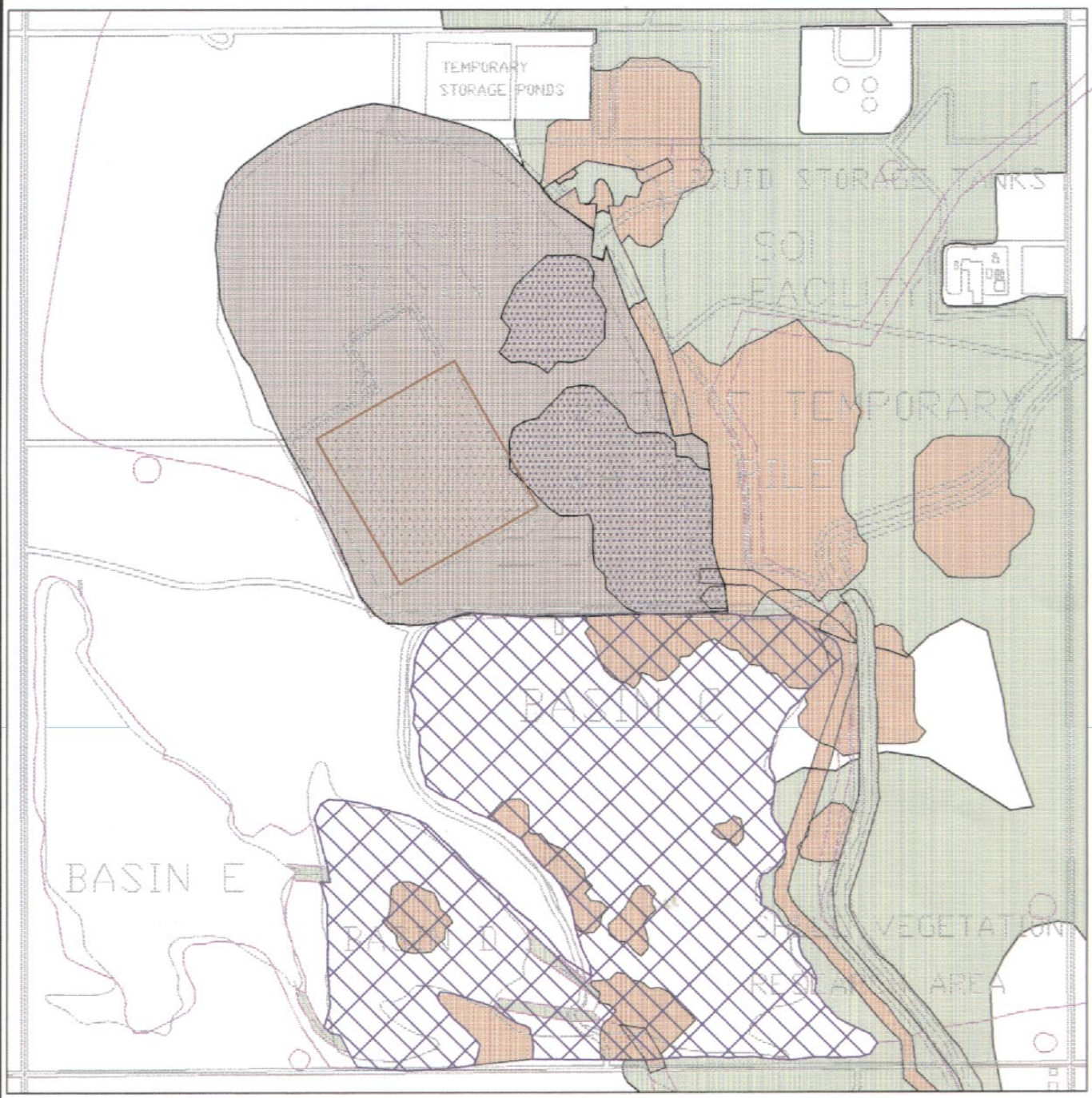

Legend

- Former Basin F Solidification Area
- RCRA–Equivalent Cap
- Human Health and Principal Threat Excavation Area
- Biota Excavation Area
- Basin F Wastepile Excavation
- 2–Foot Soil Cover Area
- SAR Site Boundary (Study Area Report; see Remedial Investigation Summary Report, Ebasco 1992a.)
- 31 Section Number
- Section Line
- Drainage
- Road
- Railroad

-N-

0 400 800
Scale in Feet

Prepared for:
U.S. Army Program Manager
for Rocky Mountain Arsenal

Prepared July 1996

Figure 9.3–2
Section 26 Excavation Areas and Cap/Cover Components

Rocky Mountain Arsenal
Prepared by: Foster Wheeler Environmental Corp.

File Name: F:\PROJECTS\ARSENAL\ROD\SEC26_EX.DWG
Date 7/22/96
Drawn by JLS
Checked by SA

Table A-7 TBCs for Groundwater

Parameter	Abbrev	Conc	Units	Hrd	Source
Arsenic	AsTOT	2.35+	µg/l		Health-based value from off-post ROD (Harding Lawson Associates 1995)
Benzene	C6H6	3+	µg/l		Health-based value from off-post ROD (Harding Lawson Associates 1995)
Isopropyl Methylphosphonic acid	IMPA	700	µg/l		EPA Lifetime Health Advisory, 1992
N-nitrosodimethylamine	NDMA	0.007+	µg/l		Risk-based level, Integrated Risk Information System (EPA 1995)
Methylisobutyl Ketone	MIBK	2000	µg/l		Proposed Corrective Action Rule, 55 FR 30798, Appendix A, July 27, 1990
Parathion	PRTHN	200	µg/l		Proposed Corrective Action Rule, 55 FR 30798, Appendix A, July 27, 1990
Trichloroethylene	TRCLE	3+	µg/l		Health-based value from off-post ROD (Harding Lawson Associates 1995)
Isodrin	ISODR	0.06+	µg/l		Health-based value from off-post ROD (Harding Lawson Associates 1995)
Dicyclopentadiene	DCPD	46+	µg/l		Health-based value from off-post ROD (Harding Lawson Associates 1995)
1,4-Oxathiane	OXAT	160+	µg/l		Health-based value from off-post ROD (Harding Lawson Associates 1995)
Dithiane	DITH	18+	µg/l		Health-based value from off-post ROD (Harding Lawson Associates 1995)
Chlorophyenylmethyl sulfide	CPMS	30+	µg/l		Health-based value from off-post ROD (Harding Lawson Associates 1995)
Chlorophyenylmethyl sulfone	CPMSO2	36+	µg/l		Health-based value from off-post ROD (Harding Lawson Associates 1995)
Chlorophyenylmethyl Sulfoxide	CPMSO	36+	µg/l		Health-based value from off-post ROD (Harding Lawson Associates 1995)
Malathion	MLTHN	100+	µg/l		Health-based value from off-post ROD (Harding Lawson Associates 1995)
Xylenes	XYLEN	1000+	µg/l		Health-based value from off-post ROD (Harding Lawson Associates 1995)

+ Containment System Remediation Goals identified Section 9 of the ROD.
µg/l Indicates micrograms per liter.